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On the Critical List: Health Care Job Vitality in New England



Addendum to
The Economic
Contributions of the
Health Care Industry to
the New England Region

January 2004



New England Healthcare Institute

Acknowledgements

About MI: The Milken Institute is an independent economic think tank whose mission is to improve the lives and economic conditions of diverse populations in the U.S. and around the world by helping business and public policy leaders identify and implement innovative ideas for creating broad-based prosperity. We put research to work with the goal of revitalizing regions and finding new ways to generate capital for people with original ideas.

We do this by focusing on *human capital* – the talent, knowledge and experience of people, and their value to organizations, economies and society; *financial capital* – innovations that allocate financial resources efficiently, especially to those who ordinarily would not have access to it, but who can best use it to build companies, create jobs and solve long-standing social and economic problems; and *social capital* – the bonds of society, including schools, health care, cultural institutions and government services, that underlie economic advancement.

By creating ways to spread the benefits of human, financial and social capital to as many people as possible – the *democratization of capital* – we hope to contribute to prosperity and freedom in all corners of the globe. We are nonprofit, nonpartisan and publicly supported.

About NEHI: Founded in 2002, the New England Healthcare Institute (NEHI) is a regional, applied research health policy institute focused on enabling innovation in health care. NEHI is dedicated to identifying, analyzing and solving critical health care issues facing the people of New England and the nation. NEHI represents all sectors of the health care industry including members of the biotechnology, medical device, hospital, physician, researcher, employer and payer communities.

Our vision is to improve the health and health care of all people. Our mission is two fold: first, to find workable solutions to the most critical health care issues; and second, to drive change within the public and private sectors.

Established as a 501(c)3 non-profit organization, NEHI is funded through grants, membership dues and donations.

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**Addendum to
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to the New England Region***



New England Healthcare Institute

working in partnership with



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1. Executive Summary

Slow Growth from Bench to Bedside

This report is an addendum to *The Economic Contributions of the Health Care Industry to the New England Region* published by the New England Health Care Institute (NEHI) and the Milken Institute in February 2003. That report concluded that New England's multifaceted health care industry is a major contributor to the region's economic vitality, accounting for 11.4 percent of total employment. It also ranked New England first among nine U.S. census regions based on the percentage of workers directly employed in health care fields. But the study also uncovered an alarming trend: from 1980 to 2001 the percentage of total U.S. health care jobs based in New England declined from 7.3 percent to 6.7 percent, putting New England last in the nation in health care employment growth.

While New England has a long tradition of national prominence in health care and related fields, the region's ability to deliver future growth is in question. NEHI and the Milken Institute have undertaken this additional analysis to identify specifically which occupations have been growing and declining in the region. This analysis incorporates growth rates for 80 separate health care occupations spanning three years from 1999 to 2001. It benchmarks results for New England against those for the United States as a whole and for the Mid Atlantic region, which in many ways parallels New England and is a close peer in the percentage of workers employed in health care occupations.

Given New England's historic stronghold in key segments of the health care industry and its importance to the well being of the region's economy and citizens, it is critical that measures are put in place to reinvigorate growth and to ensure New England's strength from bench to bedside.

Key Findings

Among the key findings of this analysis are:

- **Health care job growth in New England lags the U.S.** — Health care employment in New England grew 1.8 percent from 1999 to 2001, for a net gain of 12,200 jobs. This compares with a national average of 4.8 percent and a growth rate of 2.4 percent, or 40,000 net jobs, in the Mid Atlantic region.
- **Critical professions are in decline** — Thirty three out of 80 professions tracked declined in numbers. Many of the occupations with the most severe declines in absolute numbers involve professionals on the front lines of delivering patient care. These include home health aides, licensed practical nurses, radiologic technicians and registered nurses. Many jobs declined at a much faster rate in New England than in the nation as a whole. Moreover, other occupations declined in New England but grew considerably on a national level.
- **High wage growth occupations** — Many occupations in the high or above average wage level categories – specifically surgeons, psychiatrists, optometrists,

biomedical engineers and medical scientists – saw increased numbers from 1999 to 2001. Of all job categories showing growth in the region, approximately 25 percent are in the high wage category, 60 percent in the above average wage category and 15 percent in the lowest wage category. The number of biomedical engineers, a key indicator of the expansion of the region’s medical research and development (R&D) infrastructure, grew 76 percent, far exceeding a national growth rate of 8 percent for this occupation.

Lessons Learned from Pennsylvania

To help understand what measures New England might undertake to reinvigorate health care employment growth, this report examines how Pennsylvania achieved a remarkable 5.8 percent growth in health care jobs from 1999 to 2001, gaining on net 29,900 jobs. The state’s success stems from: 1) Cultivating an already well established pharmaceutical industry and hospital cluster; 2) Instituting tax incentives to encourage health care industries and institutions to remain or expand within the state; and 3) Introducing coordinated and creative approaches to attract and foster the growth of strategic health care industry segments most likely to benefit the state’s economy and citizens.

Future Prognosis for New England

If New England’s growth rate in health care employment remains stalled behind the rest of the nation and it continues losing high value and critical health care workers, the region’s economic health and global prominence in health care fields may suffer. Questions that must be put before the region’s public policy and health care industry leadership include:

- How can New England maintain its leadership in health care employment concentration and accelerate growth within the region from bench to bedside?
- How can we ensure that the region’s health care industry is strong, competitive and well-positioned for the future?
- How can New England take a coordinated approach to attracting and fostering the growth of strategic health care clusters, like life sciences?

2. Introduction

In February 2003 the New England Health Care Institute (NEHI) and the Milken Institute published a study documenting the economic impact of the health care industry on the New England region. *The Economic Contributions of the Health Care Industry to the New England Region* concluded that 11.4 percent of New England's work force – representing more than 800,000 jobs – is directly employed in health care professions. In 2001, health care-related businesses or institutions directly generated annual revenues of \$53 billion, a major contribution toward the economic security and vitality of the six-state region. The study also showed that New England ranked first among nine U.S. census regions in the percentage of workers directly employed in health care in the region, further validating its reputation as the top health care center in the nation and a world leader in research and innovation.¹

But the study also revealed an alarming trend: among the nine U.S. census regions, New England ranked last in health care employment growth. From 1980 to 2001, the percentage of total U.S. health care jobs based in New England declined from 7.3 percent to 6.7 percent. This declining share of U.S. health care jobs indicates that the region's leadership in health care employment may be in jeopardy. These are high value jobs leaving or not being created in the region. The study raised vital questions about how New England can maintain its national leadership in health care employment concentration and accelerate health care job growth.

This addendum study was conducted to analyze recent trends in specific health care occupations to obtain a clearer picture of the drivers behind New England's relatively weak growth rate for health care industry jobs.

3. Findings

Regional Job Growth Lags the Nation

From 1999 to 2001, U.S. health care employment grew at 4.8 percent, generating nearly half a million jobs. During this same time period, health care employment in New England grew 1.8 percent, gaining on net 12,200 health care jobs. The Mid Atlantic region, which has nearly the same employment concentration as New England, grew 2.4 percent, creating 40,000 net jobs.

Critical Occupations Are Declining

While New England has a long tradition of national prominence in health care and related fields, the region's ability to continue job growth is in question. New England has lost a significant number of hospital-based jobs – a sector where it has traditionally been quite strong. The largest job losses among those on the front lines of delivering patient care are in the nursing field – specifically home health aides, nurses and nursing aides. All told there were 16,500 fewer nursing jobs, most of which disappeared from Massachusetts. Moreover, several critical physician occupations declined from 1999 to 2001. The number of practicing anesthesiologists declined nearly 50 percent. Obstetricians and gynecologists declined 13 percent, and family and general practitioners

were down 7 percent. In addition to losing experienced providers, the region may be seeing erosion in its younger physician base. In Massachusetts, for example, 55 percent of residents and 68 percent of fellows left the state from 1997 to 2003 following completion of their training.²

Health Care Occupations on the Rise

Many occupations in the high or above average wage level categories – specifically surgeons, psychiatrists, optometrists, biomedical engineers and medical scientists – saw increased numbers from 1999 to 2001. Of all job categories showing growth in the region, approximately 25 percent are in the high wage category, 60 percent in the above average wage category and 15 percent in the lowest wage category. The number of biomedical engineers, a key indicator of the expansion of the region’s medical research and development (R&D) infrastructure, grew 76 percent, far exceeding a national growth rate of 8 percent for this occupation.

Different Diagnoses among New England States

Health care employment growth rates were not consistent across the region’s six states, which were affected by population differences, socio-economic factors, state regulations, and the existing depth of health care businesses and institutions. Most of the growth took place in Connecticut, which claimed half of the region’s new health care job with a growth rate of 3.9 percent. Massachusetts, which accounts for nearly half of the region’s health care employment, had the second lowest growth rate at 0.8 percent, attracting only 20 percent of the region’s new jobs. Vermont exceeded the national growth rate with a rate of 6.1 percent due primarily to several successful programs to recruit and retain nurses. Rhode Island and Maine had respective growth rates of 1.7 and 1.2 percent, with New Hampshire trailing at 0.2 percent.

Future Prognosis for New England

If New England’s growth rate in health care employment remains stalled behind the rest of the nation and it continues to lose high value and critical health care workers, the region’s economic health and global prominence in health care fields may suffer. In addition to providing social value, health care jobs – as *The Economic Contributions of the Health Care Industry to the New England Region* demonstrated – have a strong ripple effect throughout the region’s economy, creating significant additional economic value. Understanding potential threats and deterrents to health care employment growth and examining how other areas of the country are nurturing job growth in this sector are vital to New England’s long-term economic well being.

Lessons to be Learned from Pennsylvania’s Success

With a similar concentration of health care workers, the Mid Atlantic region is New England’s closest peer in health care employment. Yet in recent years it recorded significantly higher growth in health care jobs. Its success was fueled in large part by Pennsylvania, which exceeded the national average and had the fastest growth rate of any state in the Northeast. As a point of comparison, from 1999 to 2001, the absolute number of health care jobs in Pennsylvania grew 10 times more than in Massachusetts. Several factors contributed to Pennsylvania’s strong growth in health care employment. Some

are structural, such as the strength of the pharmaceutical cluster in the Philadelphia area. Others represent recent proactive policy measures designed to reinforce and reinvigorate the state's health care industry. By nurturing a well-established pharmaceutical cluster, by backing public and private funding for health care-related investments, and by establishing policies that bolster an already strong health care infrastructure, Pennsylvania has created a climate in which its health care industry can truly thrive.

4. Data Resources

This analysis assesses the recent growth or decline of health care employment in New England for 80 occupations over a three-year period from 1999 to 2001. For comparative purposes, data have been obtained on increases or decreases in comparable categories for the U.S. as a whole, and for the Mid Atlantic region, which, according to *The Economic Contributions of the Health Care Industry to the New England Region*, is a close second to New England in the percentage of total workers employed in health care occupations. Data used in this assessment are from the U.S. Bureau of Labor Statistics' (BLS) Occupational Employment Statistics program. A wide range of health care occupations – including nurses, physicians, technicians, insurance underwriters, and educators – are accounted for in this study. For the purposes of better identifying and understanding prevailing trends and shifts in employment patterns, these occupations are grouped here into five health care industry segments that do not correspond exactly with the 13 health care sectors examined in the previous study. These industry segments include: providers and practitioners; health services technicians; insurance and sales workers; production and R&D staff; and educators and counselors. The breakdown of specific occupations is more precise within some categories than others. Far more specific occupations are listed, for example, within the practitioner and provider grouping (42 occupations) than in production and R&D category (11 occupations). By using the most current data available, this analysis should give an accurate picture of recent occupational trends within the region. Due to a lack of historical coverage, the analysis is limited to a three-year data set from 1999 through 2001. Nonetheless, capturing growth trends and seeing which jobs were created or lost during that time frame are important first steps toward determining the future vitality of health care industry employment in New England.

5. New England Job Growth Lags the Nation

From 1999 to 2001, the overall growth rate for the number of health care jobs in New England was 1.8 percent, or a net gain of 12,210 positions. This compares with a national average of 4.8 percent, or a net gain of nearly half a million jobs in health care-related occupations. During the same period, growth in health care employment in the Mid Atlantic region, New England's regional counterpart and closest competitor in health care employment concentration, was 2.4 percent – also lagging the national growth rate, but still expanding at a faster rate than New England.

Growth of All Health Care Related Occupations

Occupations by Region, 1999-2001

Region	Absolute Growth	Percent Growth
New England	12,210	1.8%
Mid Atlantic	39,790	2.4%
United States	497,270	4.8%

Growth of All Health Care Related Occupations

Occupations by Region and State, 1999-2001

States	Absolute Growth	Percent Growth
<i>New England</i>		
Connecticut	6,310	3.9%
Massachusetts	2,790	0.8%
Vermont	1,470	6.1%
Rhode Island	860	1.7%
Maine	700	1.2%
New Hampshire	80	0.2%
<i>Mid Atlantic</i>		
Pennsylvania	29,500	5.8%
New Jersey	10,890	3.2%
New York	-600	-0.1%

As the preceding table indicates, growth rates for individual states within the New England and Mid Atlantic regions varied considerably. New England's sluggish overall growth rate in health care occupations is largely due to the rate in Massachusetts, which only grew by 0.8 percent. Although Massachusetts accounts for nearly half of all health care employment in the region, it accounted for only 20 percent of the increase in health care positions since 1999. New Hampshire exhibited the weakest growth, while Vermont had the highest at 6.1 percent, making it the only New England state with a health care employment growth rate ahead of the national average. Growing at 3.9 percent, Connecticut, which has a high concentration of insurance and pharmaceutical industry employers, created roughly 6,300 net new jobs, accounting for approximately 50 percent of the health care job growth in the region.

Notably, Pennsylvania, which has a tradition of eminence in health care on par with Massachusetts, added 29,500 new health care positions during this same period. This represents a growth rate of 5.8 percent, slightly higher than the national average. A case study examining the measures behind Pennsylvania's success in attracting health care workers is included at the end of this report.

Demographic factors must also be considered in evaluating these growth rates. Population in New England grew 1.8 percent from April 1, 2000 to July 1, 2002, well behind a national population growth rate of 2.5 percent for the same period. Slower

population growth may account for some, but certainly not all, of New England’s low health care employment growth. Pennsylvania had an even lower rate of growth – 0.4 percent – making its growth in health care employment all the more impressive.³ In 2000, the percentage of residents aged 65 and older – the demographic group most in need of health care services – for the nation as a whole was 12.8 percent. This compares with 14 percent for the entire New England region and 15.6 percent – the second highest in the nation behind Florida – for Pennsylvania.⁴

6. Critical Occupations Are Declining

Data in this report cover growth rates for 80 separate occupations in New England from 1999 to 2001. In an overall tally, 45 health care occupations grew in numbers, 33 declined and two – epidemiologists and physical therapist assistants – remained flat during this period.

Health care occupations with the biggest declines in both absolute number of jobs and percentage of workers are ranked in the two tables that follow. Three indicators are given for each health care occupation: absolute growth, percent growth, and location quotients. Location quotients compare the regional share of an occupation against a national share average. If a location quotient is higher than 1.0, the occupation is more highly concentrated in New England than for the nation as a whole. Job declines in occupations where the location quotient is above 1.0 suggest that the region is losing jobs in traditional occupational strongholds. Likewise, declines in jobs where the location quotient is below 1.0 suggest job erosion in occupations where the region was already weak relative to the rest of the nation.

Declining Health Care Occupations

New England vs. U.S., Ranked by New England Absolute Growth, 1999-2001

Occupations	New England			United States	
	Absolute Growth	Percent Growth	Location Quotient	Absolute Growth	Percent Growth
Home Health Aides	-7,160	-18.3%	1.06	-17,340	-3.0%
Licensed Practical Nurses	-3,370	-9.5%	0.88	-4,720	-0.7%
Radiologic Technicians	-2,390	-18.9%	1.14	-9,610	-5.4%
Registered Nurses	-2,250	-1.5%	1.23	12,560	0.6%
Pharmacy Technicians	-1,830	-14.9%	0.95	10,710	5.5%
Nursing Aides	-1,820	-2.0%	1.29	-1,140	-0.1%
Insurance Underwriters	-1,720	-19.6%	1.42	-1,190	-1.3%
Medical Transcriptionists	-1,500	-25.6%	0.87	-3,170	-3.3%
Health Specialties Teachers	-1,180	-21.5%	0.95	13,090	18.1%
Medical Records Technicians	-960	-10.3%	1.09	-550	-0.4%
Anesthesiologists	-920	-48.2%	0.75	-1,210	-4.7%
Health and Safety Engineers	-700	-26.1%	1.01	-4,050	-10.0%
Dietetic Technicians	-590	-23.7%	1.23	-250	-0.9%
Family & General Practitioners	-470	-6.8%	0.88	800	0.6%
Insurance Claims Clerks	-410	-2.3%	1.25	-10,555	-3.9%

Declining Health Care Occupations

New England vs. U.S., Ranked by New England Percent Growth, 1999-2001

Occupations	New England			United States	
	Percent Growth	Absolute Growth	Location Quotient	Absolute Growth	Percent Growth
Anesthesiologists	-48.2%	-920	0.75	-1,210	-4.7%
Chiropractors	-48.1%	-380	0.42	6,520	56.5%
Orthotists and Prosthetists	-33.3%	-20	0.17	1,150	34.5%
Health and Safety Engineers	-26.1%	-700	1.01	-4,050	-10.0%
Medical Transcriptionists	-25.6%	-1,500	0.87	-3,170	-3.3%
Dietetic Technicians	-23.7%	-590	1.23	-250	-0.9%
Audiologists	-22.4%	-150	0.88	-1,910	-14.7%
Health Specialties Teachers	-21.5%	-1,180	0.95	13,090	18.1%
Respiratory Therapy Technicians	-21.1%	-280	0.97	-5,290	-15.6%
Insurance Underwriters	-19.6%	-1,720	1.42	-1,190	-1.3%
Radiologic Technicians	-18.9%	-2,390	1.14	-9,610	-5.4%
Occupational Therapist Aides	-18.6%	-80	0.86	-1,690	-18.3%
Home Health Aides	-18.3%	-7,160	1.06	-17,340	-3.0%
Medical Appliance Technicians	-15.9%	-70	0.56	-1,200	-8.8%
Physical Therapist Aides	-15.7%	-290	0.83	-9,090	-20.5%

The data on declining health care occupations represent a combination of jobs eliminated, jobs lost to other regions, and failure to create new jobs. While decreases in specific occupations also occurred nationally, the severity of the declines in many cases were much greater in New England. Anesthesiologists are a case in point. The number of practicing anesthesiologists in New England dropped 48.2 percent versus a nationwide decline of 4.7 percent.

In terms of sheer numbers, the most jobs disappeared from home health aides (7,160 positions), licensed practical nurses (3,370), radiologic technicians (2,390) and registered nurses (2,250). With the exception of registered nurses, all of these professions are declining nationally, though at far higher rates in New England than for the nation as a whole. On a percentage basis, professions showing the highest rate of decline were anesthesiologists, chiropractors, orthotists and prosthetists, health and safety engineers, and medical transcriptionists. Several occupations showed dramatic decreases in New England yet rose on a national level. Health specialties teachers, for example, which include college, university and vocational school faculty, decreased 21.5 percent in New England but were up 18.1 percent nationally.

The forces behind these declines are varied and complex, with significant differences among occupations and sometimes the region's six states. Accurately identifying trends affecting each job category and parsing out regional from national factors are beyond the scope of this analysis. But possible causes may include changes in Medicaid and Medicare reimbursement policies, malpractice rate increases, advances in technology or procedures making some occupations obsolete (perhaps at faster rates in New England, a leader in medical innovation), hospital consolidations, and regional differences in wages or salaries. No doubt the relatively high cost of living in many parts of New England also contributed to job declines.

Data on specific occupations in decline highlight certain sectors within the industry that may be at risk. In the production and R&D category, the number of health and safety engineers is decreasing. In education, health specialties teachers are declining. Among providers and practitioners, home health care jobs are disappearing. Nursing jobs are declining among registered nurses and especially among licensed practical nurses. Among physicians, in addition to anesthesiologists, the ranks of family and general practitioners are also thinning out in New England (down 6.8 percent regionally versus a national growth rate of 0.6 percent).

Occupational losses in hospital-related employment were especially notable. These declines are likely due to trends such as consolidation among the region's hospitals and reduced reimbursement rates forcing hospitals to cut costs, in part through staff reductions and pay freezes.⁵ It is not surprising, therefore, to see many support positions such as aides and technologists suffer the largest declines. In addition, unattractive wages and inflexible hours have led to high turnover rates in the hospital sector.⁶

Losses are also concentrated in home health care and nursing, where labor shortages are being felt both regionally and nationally. These losses, however, were especially acute in New England, which lost 7,160 home health jobs and 5,620 total jobs among registered nurses and licensed practical nurses. Regional declines of 18.3 percent and 9.5 percent, respectively, among home health care workers and licensed practical nurses far outpaced national declines of 3.0 percent and 0.7 percent. According to the Centers for Medicare & Medicaid Services (CMS), home health care occupations declined nationally as a result of reduced Medicare reimbursement in the wake of the Balanced Budget Act of 1997.⁷ Nursing shortages are often attributed to low wages, inflexible work schedules, physically and emotionally demanding work conditions, as well as a shortage of nursing faculty and low enrollment in nursing schools.⁸ Vermont was the only New England state where the number of nurses increased significantly, attesting to the success of that state's response to the nursing shortage. It opened up more slots in nursing schools, created financial incentives to attract nurses to the state, and donated \$3 million to a new nursing scholarship program.⁹

The decline in anesthesiologists and other physician groups in New England may be tied to low reimbursement rates and the region's relatively high cost of living.¹⁰ According to the American Medical Association, in 1998 the average salary for physicians in New England was \$179,000 per year, significantly below the national average of \$194,000 and, in fact, the lowest average salary in the country.¹¹ New England's relatively low salaries for doctors are exacerbated by the high cost of living. Factoring in cost-of-living adjustments, if a Massachusetts anesthesiologist, for example, were earning an annual salary of \$170,000, a medical school classmate practicing in Illinois would earn \$240,000 for the same work.¹² As measured by the Massachusetts Medical Society Physician Practice Environment Index, the cost of maintaining a physician practice in Massachusetts increased 57.7 percent from 1992 to 2002, *excluding* professional liability premium increases. This compares with a national increase of 28.4 percent. At the same time, professional liability premiums increased 74.3 percent in Massachusetts versus 68.3 percent for the entire U.S.¹³

Declining Occupations and Income Level

To better understand the economic impact of these declines, the 15 occupations showing the greatest declines in both absolute numbers and the percentage of jobs are analyzed according to pay level. Occupations earning annual wages on average of more than \$60,000 are rated as high, \$30,000 to \$60,000 as above average, and those earning under \$30,000 as below average.

Declining Health Care Occupations

New England, Ranked by Absolute Growth, 1999-2001

Occupations	Absolute Growth	Percent Growth	2001 Wage	U.S. % Growth
Home Health Aides	-7,160	-18.3%	\$21,929	-3.0%
Licensed Practical Nurses	-3,370	-9.5%	\$37,992	-0.7%
Radiologic Technicians	-2,390	-18.9%	\$43,780	-5.4%
Registered Nurses	-2,250	-1.5%	\$50,953	0.6%
Pharmacy Technicians	-1,830	-14.9%	\$22,224	5.5%
Nursing Aides	-1,820	-2.0%	\$23,436	-0.1%
Insurance Underwriters	-1,720	-19.6%	\$54,509	-1.3%
Medical Transcriptionists	-1,500	-25.6%	\$28,944	-3.3%
Health Specialties Teachers	-1,180	-21.5%	\$76,369	18.1%
Medical Records Technicians	-960	-10.3%	\$27,655	-0.4%
Anesthesiologists	-920	-48.2%	\$136,503	-4.7%
Health and Safety Engineers	-700	-26.1%	\$63,775	-10.0%
Dietetic Technicians	-590	-23.7%	\$24,381	-0.9%
Family & General Practitioners	-470	-6.8%	\$114,212	0.6%
Insurance Claims Clerks	-410	-2.3%	\$31,230	-3.9%

High Level

Above Average

Below Average

Declining Health Care Occupations

New England, Ranked by Percent Growth, 1999-2001

Occupations	Percent Growth	Absolute Growth	2001 Wage	U.S. % Growth
Anesthesiologists	-48.2%	-920	\$136,503	-4.7%
Chiropractors	-48.1%	-380	\$76,714	56.5%
Orthotists and Prosthetists	-33.3%	-20	\$61,010	34.5%
Health and Safety Engineers	-26.1%	-700	\$63,775	-10.0%
Medical Transcriptionists	-25.6%	-1,500	\$28,944	-3.3%
Dietetic Technicians	-23.7%	-590	\$24,381	-0.9%
Audiologists	-22.4%	-150	\$52,854	-14.7%
Health Specialties Teachers	-21.5%	-1,180	\$76,369	18.1%
Respiratory Therapy Technicians	-21.1%	-280	\$36,886	-15.6%
Insurance Underwriters	-19.6%	-1,720	\$54,509	-1.3%
Radiologic Technicians	-18.9%	-2,390	\$43,780	-5.4%
Occupational Therapist Aides	-18.6%	-80	\$29,535	-18.3%
Home Health Aides	-18.3%	-7,160	\$21,929	-3.0%
Medical Appliance Technicians	-15.9%	-70	\$31,542	-8.8%
Physical Therapist Aides	-15.7%	-290	\$25,483	-20.5%

High Level

Above Average

Below Average

Results show that the 15 occupations declining at the highest rates are fairly evenly split among high, above average, and below average wage occupations. Looking at the full list of 80 occupations, for the 33 job categories that decreased in numbers in the 1999 to 2001 period, 10 were in the high wage category, 14 in the above average wage range, and 9 fell in the below average category. It appears that declines in New England health care jobs were distributed across all wage levels, with a greater incidence among above average wage jobs.

7. Occupations on the Rise

While New England suffered from a lower growth rate in overall health care employment, growth in many occupations exceeded national averages. The tables below rank the top 15 gainers, both in absolute numbers and on a percentage basis.

Growing Health Care Occupations

New England vs. U.S., Ranked by New England Absolute Growth, 1999-2001

Occupations	New England			United States	
	Absolute Growth	Percent Growth	Location Quotient	Absolute Growth	Percent Growth
Dental Hygienists	5,620	87.8%	1.50	59,830	66.4%
Dental Assistants	4,500	50.2%	0.94	92,680	52.9%
Psychiatric Aides	3,260	64.6%	2.60	8,540	16.7%
Insurance Sales Agents	2,860	44.8%	0.64	27,270	11.3%
Medical Secretaries	2,230	9.9%	1.38	86,250	34.8%
Mental Health Social Workers	2,190	39.1%	NA	12,820	17.6%
Medical Services Managers	1,850	15.3%	1.14	-3,230	-1.4%
Rehabilitation Counselors	1,810	21.4%	NA	12,320	13.2%
Medical Assistants	1,720	14.0%	0.76	64,450	22.9%
Sales Representatives	1,710	6.9%	1.33	28,400	8.3%
Medical Lab Technicians	1,680	28.7%	1.11	4,830	3.4%
Pharmacy Aides	1,390	78.1%	1.02	9,860	20.4%
Claims Adjusters, Examiners	820	6.8%	1.20	45,740	29.6%
Emergency Medical Technicians	760	7.1%	1.25	-1,670	-1.0%
Medical Social Workers	710	9.8%	NA	1,810	1.8%

Growing Health Care Occupations

New England vs. U.S., Ranked by New England Percent Growth, 1999-2001

Occupations	New England			United States	
	Percent Growth	Absolute Growth	Location Quotient	Absolute Growth	Percent Growth
Dental Hygienists	87.8%	5,620	1.50	59,830	66.4%
Pharmacy Aides	78.1%	1,390	1.02	9,860	20.4%
Biomedical Engineers	76.1%	350	2.17	510	7.9%
Psychiatric Aides	64.6%	3,260	2.60	8,540	16.7%
Optometrists	56.3%	630	1.35	2,830	13.2%
Medical Scientists	55.7%	590	1.38	25,230	119.0%
Psychiatrists	54.4%	430	1.05	3,750	21.0%
Dental Assistants	50.2%	4,500	0.94	92,680	52.9%
Insurance Sales Agents	44.8%	2,860	0.64	27,270	11.3%
Radiation Therapists	39.1%	180	0.89	1,120	9.1%
Mental Health Social Workers	39.1%	2,190	NA	12,820	17.6%
Cardiovascular Technicians	36.7%	660	1.12	-500	-1.2%
Ophthalmic Laboratory Technicians	36.5%	460	0.93	-100	-0.3%
Opticians, Dispensing	35.2%	640	0.73	4,260	7.2%
Surgeons	33.8%	530	0.80	470	1.0%

The largest gains in absolute numbers were among dental hygienists, dental assistants, psychiatric aides, insurance sales agents, and medical secretaries, where, for the most part, growth rates mirrored national trends. Job categories showing the greatest gains on a percentage basis were dental hygienists, pharmacy aides, biomedical engineers, psychiatric aides, and optometrists. For each of these occupations, growth rates greatly exceeded the national average. As with declining occupations, forces driving growth in certain occupations are complex and varied – especially when growth rates diverge greatly from the national average.

Dental hygienists and dental assistants were among the top growing categories, both in absolute and percentage terms, together adding a total of 10,120 jobs. Both occupations tracked to national growth rates, with dental hygienists up 87.8 percent in New England versus a national average of 66.4 percent, and dental assistants up 50.2 percent regionally, only slightly lagging a national average of 52.9 percent. This growth may be due to a more concerted effort at state levels to serve Medicaid and State Children’s Health Insurance Program populations eligible for dental services; both Massachusetts and Maine recently increased Medicaid reimbursement levels for dentists. These trends, along with higher personal incomes, may be heightening demand for dental services in the region and across the nation.¹⁴

Several mental health occupations were among the highest growing jobs in New England. Psychiatric aides, mental health social workers, psychiatrists, and rehabilitation counselors all were among the largest absolute and percent increases. Of note, the number of psychiatric aides and psychiatrists in the region grew at 64.6 and 54.4 percent respectively, compared with national averages of only 16.7 and 21.0 percent.

Research and life sciences occupations, specifically biomedical engineers and medical scientists, enjoyed dramatic gains of 76.1 and 55.7 percent, respectively. This compares with national averages of 7.9 and 119.0 percent. This suggests the region is continuing to build on its strong base of research and innovation. These increases were concentrated in Massachusetts and Connecticut, where biomedical engineers increased by 91 percent and 83 percent, respectively.

Growth Occupations and Income Level

Using the same wage ranges as for declining occupations, the tables below examine the largest and fastest growing health care occupations by absolute and percentage growth according to wage level.

Growing Health Care Occupations

New England, Ranked by Absolute Growth, 1999-2001

Occupations	Absolute Growth	Percent Growth	2001 Wage	U.S. % Growth
Dental Hygienists	5,620	87.8%	\$56,448	66.4%
Dental Assistants	4,500	50.2%	\$30,819	52.9%
Psychiatric Aides	3,260	64.6%	\$27,687	16.7%
Insurance Sales Agents	2,860	44.8%	\$52,892	11.3%
Medical Secretaries	2,230	9.9%	\$29,723	34.8%
Mental Health Social Workers	2,190	39.1%	\$38,735	17.6%
Medical Services Managers	1,850	15.3%	\$67,397	-1.4%
Rehabilitation Counselors	1,810	21.4%	\$31,177	13.2%
Medical Assistants	1,720	14.0%	\$27,162	22.9%
Sales Representatives	1,710	6.9%	\$63,979	8.3%
Medical Lab Technicians	1,680	28.7%	\$34,840	3.4%
Pharmacy Aides	1,390	78.1%	\$19,222	20.4%
Claims Adjusters, Examiners	820	6.8%	\$47,982	29.6%
Emergency Medical Technicians	760	7.1%	\$27,426	-1.0%
Medical Social Workers	710	9.8%	\$40,273	1.8%

High Level
 Above Average
 Below Average

Growing Health Care Occupations

New England, Ranked by Percent Growth, 1999-2001

Occupations	Percent Growth	Absolute Growth	2001 Wage	U.S. % Growth
Dental Hygienists	87.8%	5,620	\$56,448	66.4%
Pharmacy Aides	78.1%	1,390	\$19,222	20.4%
Biomedical Engineers	76.1%	350	\$64,675	7.9%
Psychiatric Aides	64.6%	3,260	\$27,687	16.7%
Optometrists	56.3%	630	\$89,368	13.2%
Medical Scientists	55.7%	590	\$82,650	119.0%
Psychiatrists	54.4%	430	\$114,220	21.0%
Dental Assistants	50.2%	4,500	\$30,819	52.9%
Insurance Sales Agents	44.8%	2,860	\$52,892	11.3%
Radiation Therapists	39.1%	180	\$54,165	9.1%
Mental Health Social Workers	39.1%	2,190	\$38,735	17.6%
Cardiovascular Technicians	36.7%	660	\$43,797	-1.2%
Ophthalmic Laboratory Technicians	36.5%	460	\$24,636	-0.3%
Opticians, Dispensing	35.2%	640	\$35,682	7.2%
Surgeons	33.8%	530	\$126,788	1.0%

High Level
 Above Average
 Below Average

Occupations in the above average wage range appear to be expanding at a higher rate than those in the top and bottom wage categories. Seven of the fastest growing jobs in absolute terms and six of the fastest growing occupations by percent are above average wage jobs. Only two of the fastest growing occupations in absolute numbers – medical services managers and sales representatives – rank among high wage jobs. Looking across all job categories undergoing expansion in the region, approximately 25 percent are in the high wage category, 60 percent are in the above average wage range and 15

percent fall in the below average category. Although this information is far from conclusive, it may point to slower growth among the region's lower paying occupations.

8. Changing Prognosis among Five Industry Segments

To gain a better understanding of the dynamics behind these shifting patterns in health care employment as well as the potential impacts of the decline and growth of various occupations, we categorized the occupations into five sectors within the industry. These are: 1) practitioners and providers, 2) health services technicians, 3) insurance and sales, 4) production and R&D, and 5) educators and counselors.

Practitioners and Providers

The tables below highlight specific job losses and gains in the practitioner and provider category. This segment includes physicians, nurses, dentists, opticians and other professions on the front line of delivering patient care. It is by far the largest category, with 491,500 workers in 42 occupations, and had a net growth of nearly 7,000 jobs from 1999 to 2001. There was a net gain of nearly 2,700 practitioners and providers in the top wage category.

Practitioners and Providers
Declining Occupations by Wage Level, New England, 1999-2001

	Absolute Growth	Percent Growth	% of Occ. Group Share	2001 Wage
Practitioners and Providers Occupation Group	6,980	1.4%	100.0%	\$43,173
Declining				
Anesthesiologists	-920	-48.2%	0.2%	\$136,503
Obstetricians and Gynecologists	-130	-13.0%	0.2%	\$131,740
Family and General Practitioners	-470	-6.8%	1.3%	\$114,212
Physician Assistants	-70	-1.9%	0.7%	\$104,818
Chiropractors	-380	-48.1%	0.1%	\$76,714
Podiatrists	-90	-4.1%	0.4%	\$70,409
Orthotists and Prosthetists	-20	-33.3%	0.0%	\$61,010
Physical Therapists	-20	-0.2%	1.9%	\$57,431
Audiologists	-150	-22.4%	0.1%	\$52,854
Registered Nurses	-2,250	-1.5%	29.7%	\$50,953
Massage Therapists	-50	-4.0%	0.2%	\$40,907
Licensed Practical and Licensed Vocational Nurses	-3,370	-9.5%	6.6%	\$37,992
Physical Therapist Assistants	0	0.0%	0.6%	\$35,804
Recreational Therapists	-400	-14.1%	0.5%	\$32,949
Occupational Therapist Aides	-80	-18.6%	0.1%	\$29,535
Medical Transcriptionists	-1,500	-25.6%	0.9%	\$28,944
Medical Equipment Preparers	-50	-2.6%	0.4%	\$25,851
Physical Therapist Aides	-290	-15.7%	0.3%	\$25,483
Nursing Aides, Orderlies, and Attendants	-1,820	-2.0%	18.3%	\$23,436
Home Health Aides	-7,160	-18.3%	6.5%	\$21,929

High Level
 Above Average
 Below Average

Practitioners and Providers
 Growing Occupations by Wage Level, New England, 1999-2001

	Absolute Growth	Percent Growth	% of Occ. Group Share	2001 Wage
Practitioners and Providers Occupation Group	6,980	1.4%	100.0%	\$43,173
<i>Growing</i>				
Surgeons	530	33.8%	0.4%	\$126,788
Internists, General	430	11.0%	0.9%	\$116,592
Psychiatrists	430	54.4%	0.2%	\$114,220
Dentists	480	15.1%	0.7%	\$104,015
Optometrists	630	56.3%	0.4%	\$89,368
Pharmacists	420	4.2%	2.1%	\$71,808
Medical and Health Services Managers	1,850	15.3%	2.8%	\$67,397
Dental Hygienists	5,620	87.8%	2.4%	\$56,448
Radiation Therapists	180	39.1%	0.1%	\$54,165
Occupational Therapists	90	1.5%	1.2%	\$53,720
Speech-Language Pathologists	230	3.8%	1.3%	\$53,324
Respiratory Therapists	40	0.9%	0.9%	\$43,722
Dietitians and Nutritionists	390	15.7%	0.6%	\$43,282
Occupational Therapist Assistants	130	9.7%	0.3%	\$37,005
Opticians, Dispensing	640	35.2%	0.5%	\$35,682
Dental Assistants	4,500	50.2%	2.7%	\$30,819
Medical Secretaries	2,230	9.9%	5.0%	\$29,723
Psychiatric Aides	3,260	64.6%	1.7%	\$27,687
Emergency Medical Technicians and Paramedics	760	7.1%	2.3%	\$27,426
Medical Assistants	1,720	14.0%	2.9%	\$27,162
Veterinary Assistants and Laboratory Animal Caretakers	250	7.4%	0.7%	\$23,223
Pharmacy Aides	1,390	78.1%	0.6%	\$19,222

High Level
 Above Average
 Below Average

Health Services Technicians

The next table features changes in occupational patterns among health services technicians in New England. This category encompasses 61,480 workers in 13 occupations. Professions in this group provide technical support in hospital, clinical and other settings – occupations that may be the most susceptible to technological advances or hospital consolidations and have the greatest need for retraining programs. On average, health services technicians comprise the lowest paying occupational category. This was the only category to experience a net job loss, an overall decline of 4.4 percent, or 2,820 jobs, from 1999-2001.

Health Services Technicians

Declining and Growing Occupations by Wage Level, New England, 1999-2001

	Absolute Growth	Percent Growth	% of Occ. Group Share	2001 Wage
Health Services Technicians Occupation Group	-2,820	-4.4%	100.0%	\$36,097
Declining				
Diagnostic Medical Sonographers	-160	-7.4%	3.3%	\$52,619
Radiologic Technologists and Technicians	-2,390	-18.9%	16.7%	\$43,780
Respiratory Therapy Technicians	-280	-21.1%	1.7%	\$36,886
Medical Records and Health Information Technicians	-960	-10.3%	13.5%	\$27,655
Dietetic Technicians	-590	-23.7%	3.1%	\$24,381
Pharmacy Technicians	-1,830	-14.9%	17.1%	\$22,224
Growing				
Nuclear Medicine Technologists	90	10.3%	1.6%	\$50,793
Occupational Health and Safety Specialists and Technicians	450	26.3%	3.5%	\$48,153
Medical and Clinical Laboratory Technologists	60	0.7%	14.0%	\$45,587
Cardiovascular Technologists and Technicians	660	36.7%	4.0%	\$43,797
Psychiatric Technicians	20	0.8%	4.0%	\$35,817
Medical and Clinical Laboratory Technicians	1,680	28.7%	12.2%	\$34,840
Surgical Technologists	430	15.1%	5.3%	\$34,525

High Level

Above Average

Below Average

Insurance and Sales

Altogether, occupations in the insurance and sales segment gained 4.7 percent, or 3,260 positions, bringing it to a total of 72,940 workers in 2001. Most of this growth came from a 44.8 percent rise in the number insurance sales agents, which added 2,860 positions over the three-year period of the study. All occupations within this category represent either above average or high wage jobs.

Insurance and Sales

Declining and Growing Occupations by Wage Level, New England, 1999-2001

	Absolute Growth	Percent Growth	% of Occ. Group Share	2001 Wage
Insurance / Sales Occupation Group	3,260	4.7%	100.0%	\$51,073
Declining				
Insurance Underwriters	-1,720	-19.6%	9.7%	\$54,509
Insurance Claims and Policy Processing Clerks	-410	-2.3%	23.6%	\$31,230
Growing				
Sales Representative, Technical & Scientific Products	1,710	6.9%	36.2%	\$63,979
Insurance Sales Agents	2,860	44.8%	12.7%	\$52,892
Claims Adjusters, Examiners, and Investigators	820	6.8%	17.7%	\$47,982

High Level

Above Average

Below Average

Production and R&D

Production and R&D occupations registered a net gain of 4.7 percent, amounting to approximately 700 jobs. There are 11 occupations in this category, accounting for approximately 16,140 jobs. The largest growth within this category came from high paying posts such as medical scientists, biochemists and biophysicists, and biomedical engineers, reinforcing New England's reputation as a pioneer in developing medical therapies and technologies as well as its stronghold in the life sciences.

Production and R&D

Declining and Growing Occupations by Wage Level, New England, 1999-2001

	Absolute Growth	Percent Growth	% of Occ. Group Share	2001 Wage
Production and R&D Occupation Group	700	4.5%	100.0%	\$49,735
Declining				
Health and Safety Engineers	-700	-26.1%	12.3%	\$63,775
Epidemiologists	0	0.0%	0.9%	\$55,490
Environmental Scientists and Specialists, Including Health	-200	-5.7%	20.5%	\$50,570
Medical Equipment Repairers	-60	-5.4%	6.5%	\$39,161
Medical Appliance Technicians	-70	-15.9%	2.3%	\$31,542
Growing				
Medical Scientists, Except Epidemiologists	590	55.7%	10.2%	\$82,650
Biochemists and Biophysicists	210	29.6%	5.7%	\$66,276
Biomedical Engineers	350	76.1%	5.0%	\$64,675
Biological Technicians	80	2.5%	20.1%	\$38,971
Dental Laboratory Technicians	40	4.4%	5.9%	\$31,710
Ophthalmic Laboratory Technicians	460	36.5%	10.7%	\$24,636

High Level
 Above Average
 Below Average

Educators and Counselors

The final health care occupational group consists of educators and counselors. It includes nine occupations encompassing 48,880 workers in 2001. More than 4,000 positions were added in this category for a growth rate of 4.5 percent, the majority of which (2,190) were mental health and substance abuse social workers. Notably, the two occupations that declined, health specialties teachers and biological science teachers, are critical to building and training the region's future work force.

Educators and Counselors

Declining and Growing Occupations by Wage Level, New England, 1999-2001

	Absolute Growth	Percent Growth	% of Occ. Group Share	2001 Wage
Educators/Counselors Occupation Group	4,090	9.1%	100.0%	\$41,342
Declining				
Health Specialties Teachers, Postsecondary	-1,180	-21.5%	8.8%	\$76,369
Biological Science Teachers, Postsecondary	-70	-3.5%	3.9%	\$62,559
Growing				
Nursing Instructors and Teachers, Postsecondary	10	0.4%	4.9%	\$54,390
Health Educators	460	18.0%	6.2%	\$41,225
Medical Social Workers	710	9.8%	16.3%	\$40,273
Mental Health and Substance Abuse Social Workers	2,190	39.1%	15.9%	\$38,735
Mental Health Counselors	50	0.7%	13.9%	\$34,453
Substance Abuse and Behavioral Disorder Counselors	110	2.6%	9.0%	\$31,599
Rehabilitation Counselors	1,810	21.4%	21.0%	\$31,177

High Level
 Above Average
 Below Average

9. Different Diagnoses among New England States

Each of the six states comprising the New England region has significant differences in terms of the existing base of health care businesses, institutions, and population demographics. These differences may account for cross currents and isolated trends that are not occurring uniformly across the region. This section examines those trends at the state level.

Connecticut – Insurance Industry and Biosciences Spur Growth

While Connecticut represents approximately one quarter of total New England health care employment, it accounted for nearly half of the growth in the region. Growing at 3.9 percent, Connecticut created 6,310 net new health care jobs.

Capitalizing on its strength as a regional leader in the insurance industry, Connecticut's most notable gains were in insurance-related occupations. Growing numbers were recorded among insurance claims adjusters and examiners (15.0 percent), sales representatives (11.4 percent), claims and processing clerks (8.2 percent), and underwriters (5.6 percent). Connecticut also saw gains in the production and R&D group among biomedical engineers, which grew 83.3 percent, medical scientists, which grew 55.7 percent and biological technicians which grew 15.3 percent. Gains in this group indicate the state's growing strength in biosciences and life sciences

Connecticut suffers from a severe shortage of nurses and hospital support staff, a trend that was exacerbated in the 1999 to 2001 period. During this same period, home health aides in the state dropped 34.9 percent, or 4,450 positions. Surgeons, radiological technicians, and anesthesiologists also topped the list of occupations seeing the largest decline in the state. In mid-2002, Connecticut was added to the American Medical Association's medical liability crisis map as one of 19 states – the only one in New England – where patients may be losing access to medical care due to high medical liability causing physicians to move, retire early or avoid performing high-risk procedures.¹⁵

Maine – Losing R&D and Production Jobs

Health care employment in Maine grew 1.2 percent, adding a net of 700 jobs. Of the state's top 15 growing health care occupations, five were in the high wage category. These include surgeons, internists, optometrists, pharmacists, and insurance sales representatives.

While the state lost 260 registered nurses, Maine added 600 nursing aides and 530 home health aides between 1999 and 2001. The newly created Health Care Workforce Alliance, established in April 2003, is attempting to reduce shortages among nurses and hospital workers through a \$200,000 investment in technical college programs and a \$200,000 scholarship program.¹⁶

Of significant concern, in light of the state's efforts to attract industries known for innovation and/or manufacturing jobs, is that all occupations in the production and R&D occupational group declined from already low levels. According to the Beacon Hill Institute, a research group that focuses on federal, state and local economic policies, Maine's high tax burden as a percentage of gross state product – the highest in the nation – may be deterring investment in the research-oriented industries.¹⁷

Massachusetts – Largest Employer Losing Ground

Massachusetts represents approximately 50 percent of total health care employment in New England, yet accounted for only 20 percent of the job growth in the region. Health care employment in Massachusetts grew at 0.8 percent, creating 2,790 net new jobs.

The most significant declines in Massachusetts were among nurses, home health aides, health specialties teachers, general practitioners, and anesthesiologists. The state drove regional trends in many of these areas, including the declines among physicians. In just three years, Massachusetts lost half its anesthesiologists. Moreover, among junior doctors, from 1997 to 2003, 55 percent of residents and 68 percent of fellows left the state after completing their training, suggesting that the state may be failing to retain its young physician base.

In the production and R&D occupation group, Massachusetts had strong gains, recording employment growth of 33.8 percent among biochemists and biophysicists, as well as an increase of 91 percent among biomedical engineers. Gains within this group were offset by declines of 11.2 percent among health and safety engineers and 25 percent among medical appliance technicians.

New Hampshire – Nursing Shortage Becoming More Acute

New Hampshire had the lowest health care employment growth in the region, at 0.2 percent. With a largely rural population base, New Hampshire has trouble attracting or retaining nurses, who often leave for higher salaries and more urban or suburban environments.¹⁸ From 1999 to 2001, the number of nurses employed in the state declined by 250, or 2.1 percent. Of even greater concern is a significant decline in family and general practitioners. The state lost 680 general practitioners, a loss of 64 percent from 1999 to 2001. At the same time this occupation grew 0.6 percent nationwide. New Hampshire's decline may be due to the state's low reimbursement rates for Medicare and Medicaid patients. Finally, as with Maine, most occupations in the production and R&D occupational group declined over the three-year period, representing a 9.0 percent decrease in that category.¹⁹

Rhode Island – Recruiting Students into Medical Fields

Health care employment in Rhode Island grew 1.7 percent, adding 800 net new health care jobs. The state faced especially large losses in the health services technicians group, which includes pharmacy technicians (down 36.9 percent), dietetic technicians (down 54.2 percent), and medical and clinical laboratory technologists (down 27.8 percent). Fewer of the state's high school graduates are entering nursing and technical programs, leading to nursing and hospital staffing shortages. To counter this trend, hospital groups such as the Hospital Association of Rhode Island's Health Partnership Council (HPC) are developing outreach programs to encourage secondary school and college students to enter health care professions. Internships, advertising, signing bonuses, and on-campus recruitment are among the tools HPC is employing.²⁰

Vermont – Successfully Countering Nursing Shortages

Starting from a small base, Vermont had the highest growth rate for health care employment of any state in the region, rising 6.1 percent with the addition of 1,470 net jobs. Occupations with the greatest growth over the three-year period on a percentage basis include registered nurses, nursing aides, surgeons and family and general practitioners. Vermont was the only state in New England to achieve significant growth in the number of registered nurses and licensed practical nurses. Measures recommended by the state's Nursing Blue Ribbon Commission have helped Vermont address the nursing shortage. These included creating a center for tracking the nursing work force, funding a nursing loan repayment program, and starting a \$3 million nursing scholarship program.²¹

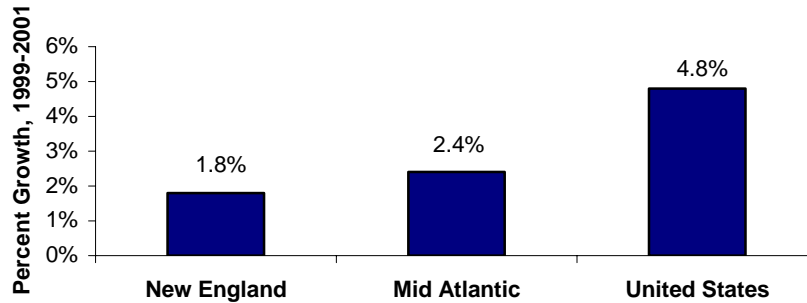
Despite these notable successes, Vermont also faced declines in some occupations. Insurance underwriters declined 57.9 percent, health and safety engineers declined 33.3 percent, medical secretaries and medical assistants were down 42.6 percent and 22.2 percent, respectively, and health specialties educators declined 33.3 percent.

10. Regional Summary

The Mid Atlantic region, comprised of New Jersey, New York, and Pennsylvania, shares many characteristics with New England. It too is a regional center for health care employment. Both have similar climates, population densities, and clusters of medical research institutions and major employers in the pharmaceutical, medical device, health care services and life sciences sectors. These neighboring regions are fierce competitors for health care employment, ranking first and second nationally in the concentration of workers employed in health care occupations. With a much higher overall population, the Mid Atlantic has a greater number of health care employees (within the 80 occupations studied) – 1,685,000 versus approximately 691,000 for New England. New England, however, has a slightly higher concentration of health care workers – 25 percent above the national average – with the Mid Atlantic in close second with a concentration 23 percent above the national average. If the Mid Atlantic and other regions grow at faster rates than New England, they threaten to displace New England as the nation's leading health care employer.

As the following table shows, not only did New England have a substantially lower health care employment growth rate than the nation as a whole from 1999 to 2001, but it also trailed its nearest competitor, the Mid Atlantic region, in overall health care job growth.

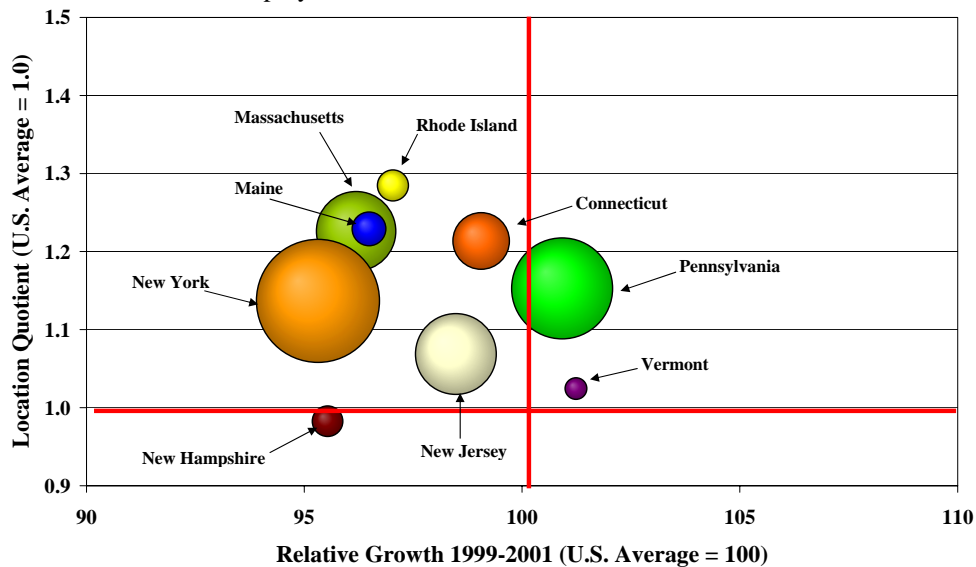
Growth of All Health Care Occupations by Region, 1999-2001



The following bubble chart provides a multi-dimensional perspective of the overall health care occupational profile of the New England and Mid Atlantic states. The vertical axis uses the 2001 location quotient (LQ) to measure the employment concentration of all health occupations relative to the U.S. average. The horizontal axis measures state health care employment growth relative to the entire U.S. If a state has an index of 100, this means its growth rate from 1999 to 2001 was the same as the national average. The size of the bubble pertains to the actual number of health care occupations. For example, New York has by far the largest number of health care jobs among the states shown below.

Total Health Care Occupations Profile

Employment - Concentration, Size, and Growth



Of all the New England and Mid Atlantic states, Pennsylvania had the best overall performance from 1999 to 2001. Like most states in the two regions, it started with an already high concentration of health care employment relative to the national average. What's extraordinary about Pennsylvania is the rate of growth in health care jobs during

this period even while its overall population grew only 0.4 percent. Moreover, these jobs were added across the income spectrum in high and low paying occupations.

Given its size and parity in many other respects with the larger New England states, Pennsylvania's success in growing an already sizeable health care employment base deserves a closer look. Examining the factors contributing to Pennsylvania's success may help policy makers and health care leaders in New England identify initiatives that could potentially be adopted to promote vibrant, long-term growth in health care employment.

11. A Case Study: The Pennsylvania and Philadelphia Story

Within the Mid Atlantic region, Pennsylvania stands out as a clear winner in its efforts to foster health care employment growth. It now rivals New England for preeminence in health care and related fields.

Pennsylvania's closest peer in the health care industry is Massachusetts, although it has nearly twice the population, with 12.3 million residents compared with 6.3 million for Massachusetts. Yet from 1999 to 2001, the absolute growth of health care jobs in Pennsylvania was 10 times higher than that for Massachusetts. Even adjusting for differences in the labor pool, the number of people employed in health care in Pennsylvania grew more than seven times faster than in Massachusetts. The key question is: what is enabling Pennsylvania to achieve such growth?

Pennsylvania's strong growth rate is attributable to several factors. Some are structural, having evolved over decades. Others, however, are the result of recent government and private industry initiatives to reinforce and renew the strength of Pennsylvania's health care industries.

Cluster Effect

Perhaps the most important structural factor is Pennsylvania's remarkably strong pharmaceutical cluster. As private funding plays an increasingly important role in the health care industry, Philadelphia's proximity to pharmaceutical company headquarters and research laboratories is a significant advantage in the search for new sources of job growth.

Primary U.S. operations and/or major research and manufacturing facilities for most of the world's top 10 pharmaceutical companies ranked according to sales are located in the greater Philadelphia area. Companies with a major presence near Philadelphia include Merck, GlaxoSmithKline, Novartis, Bristol-Myers Squibb, AstraZeneca, Roche, and Wyeth. While many of these companies have operations in New England, particularly specialized research laboratories, the vast majority of their expenditures remain in the greater Philadelphia area.

Mid-sized pharmaceutical companies based in the U.S. also favor the Mid Atlantic region. Of the 111 pharmaceutical manufacturing companies or divisions based in the

Northeast with annual sales above \$50 million, 97 are based in the Mid Atlantic region versus only 14 in New England.²² This concentration affords a significant advantage for securing private funding to develop a local base for research and innovation, as well as for other aspects of the health care industry. It also provides a network of resources to attract newer businesses to the area. Consistently, new research divisions of major companies are being established where ready access to capital and a skilled labor pool are already in place.

Pharmaceutical manufacturers making major investments in medical research have fueled hospital expansion in the greater Philadelphia area. The pharmaceutical industry has provided hospitals, medical schools and companies in related health care sectors with seed capital and opportunities for technology transfer arrangements. The Philadelphia metropolitan area has the highest percentage of physicians engaged in research of all U.S. metropolitan areas.²³

This investment in research has elevated the importance of hospitals and other health care employers to the local economy. When coupled with the state's rising elderly population and an increasing number of overseas visitors seeking medical care, this growth has become even more pronounced. Nearly 15 percent of all private sector jobs in greater Philadelphia are in health care, with the largest number of health care workers at hospitals and related facilities.

To foster collaboration among industry, research, and health care delivery, Philadelphia deliberately strengthened ties between pharmaceutical industries and other health care institutions. Former Mayor Edward Rendell worked to keep and expand links with SmithKline Beecham (now GlaxoSmithKline) and generate health care industry growth in the city. By way of example, Philadelphia's Presbyterian Medical Center now houses a primary GlaxoSmithKline research facility. Other similar high-level initiatives have been undertaken to promote the development of hospitals and other health care businesses, in addition to pharmaceutical companies.

Favorable Policies to Support Health Care Infrastructure

Pennsylvania has also benefited from proactive government actions and policies aimed at sustaining and promoting a strong health care base. Spurred by fears of health care employment decline, in the mid-1990s Mayor Rendell moved to stop the departure of one of the city's leading employers, SmithKline Beecham. Although it had major operations in Philadelphia, SmithKline Beecham was headquartered in London even before its merger with Glaxo. Company leadership had no strong historical or cultural loyalty to the city. To make staying in Philadelphia even more compelling, the city cut income tax rates for local workers. The more favorable tax structure kept the company's operations within the city limits. This initiative also improved relationships with the region's other employers. Independence Blue Cross, for example, the largest health insurer in Southeastern Pennsylvania, subsequently decided to expand its presence in Philadelphia.²⁴

Legislation put forth by Pennsylvania state government also created a more favorable climate for health care businesses, particularly those engaged in R&D. The state reduced its corporate tax rate from 12.25 percent in 1993 to 9.99 percent in 1995, still today's existing rate.²⁵ This tax reduction helped Pennsylvania compare more favorably with lower cost locations such as New Jersey, which has a corporate tax rate of 9.00 percent. Pennsylvania also stimulated investments in medical innovation by instituting a tax credit in 1996 for companies with significant R&D budgets. This credit allowed companies to shelter up to \$15 million annually in corporate R&D expenditures from state income tax. Such legislation has provided a further incentive for companies to commit research dollars to projects in Philadelphia and the surrounding area. The exemption was so successful that in 2002 the legislature voted to raise the tax exemption for R&D spending to \$60 million.²⁶

Public and Private Funding

While Pennsylvania receives less National Institutes of Health funding for medical research than Massachusetts, it has created other sources of public funding that offer greater flexibility to the health care industry. For example, the state designated \$100 million in funding from tobacco litigation settlements to promote biotechnology industry growth. This initiative is already providing significant benefits to Philadelphia.²⁷ The money has been invested in research facilities such as the University of Pennsylvania School of Medicine and the Children's Hospital of Philadelphia. Pennsylvania has also invested \$60 million in 2002 to initiate a venture capital fund that supports the commercialization of new life science businesses.

Public and private groups are often collaborating to promote the development of health care industry sectors. Innovation PA is a public/private partnership that supports technology and innovation in the state. An alliance between two private trade associations, Greater Philadelphia First and the Pennsylvania Biotechnology Association, was forged to promote Philadelphia as a biotechnology center by emphasizing the availability of venture capital.²⁸ Other local organizations, such as Ben Franklin Technology Partners, a statewide nonprofit network dedicated to fostering innovation and economic growth, the Greater Philadelphia Chamber of Commerce, and the Pennsylvania Department of Economic Development have teamed together to provide business assistance, strategic alliances, and financial backing for the health care industry.

In summary, by nurturing its well-established pharmaceutical cluster, by creating healthy public and private funding for health care-related investments and by establishing favorable policies that support a strong health care infrastructure, Pennsylvania has created a business climate in which the industry can truly thrive.

12. Future Prognosis for New England

While New England has a long tradition of national prominence in health care and related fields, the region's ability to deliver future growth is in question. If New England's growth rate in health care employment remains stalled behind the rest of the nation and it

continues losing high value and critical health care workers, the region's economic health and global prominence in health care fields may suffer.

New England's public policy and health care industry leadership will need to work together to develop strategies to ensure that the region's health care industry is strong, competitive and well-positioned for the future. The lessons from Pennsylvania's success in bolstering its health care infrastructure may be instructive. A key challenge for New England is to develop a coordinated approach to maintaining its stronghold in health care delivery while attracting and fostering the growth of strategic health care clusters, like life sciences. It is vital that the region work together to address these issues.

Given New England's historic stronghold in key segments of the health care industry and its importance to the well being of the region's economy and citizens, it is critical that measures be put in place to reinvigorate growth and to reinforce New England's strength from bench to bedside.

Appendix A – Occupational Data

New England

Occupation Code	Occupation Title	1999 Employment	2001 Employment	99-'01 Absolute Growth	99-'01 Percent Growth	2001 Wage	2001 LQ
New England	Total Health Care Related Occupations	678,730	690,940	12,210	1.8%	50,930	1.20
Practitioners and Providers Occupation Group							
31-1011	Home Health Aides	39,060	31,900	-7,160	-18.3%	21,929	1.06
29-2061	Licensed Practical and Licensed Vocational Nurses	35,570	32,200	-3,370	-9.5%	37,992	0.88
29-1111	Registered Nurses	148,220	145,970	-2,250	-1.5%	50,953	1.23
31-1012	Nursing Aides, Orderlies, and Attendants	91,900	90,080	-1,820	-2.0%	23,436	1.29
31-9094	Medical Transcriptionists	5,860	4,360	-1,500	-25.6%	28,944	0.87
29-1061	Anesthesiologists	1,910	990	-920	-48.2%	136,503	0.75
29-1062	Family and General Practitioners	6,870	6,400	-470	-6.8%	114,212	0.88
29-1125	Recreational Therapists	2,830	2,430	-400	-14.1%	32,949	1.69
29-1011	Chiropractors	790	410	-380	-48.1%	76,714	0.42
31-2022	Physical Therapist Aides	1,850	1,560	-290	-15.7%	25,483	0.83
29-1121	Audiologists	670	520	-150	-22.4%	52,854	0.88
29-1064	Obstetricians and Gynecologists	1,000	870	-130	-13.0%	131,740	0.94
29-1081	Podiatrists	2,170	2,080	-90	-4.1%	70,409	5.10
31-2012	Occupational Therapist Aides	430	350	-80	-18.6%	29,535	0.86
29-1071	Physician Assistants	3,640	3,570	-70	-1.9%	104,818	1.19
31-9011	Massage Therapists	1,250	1,200	-50	-4.0%	40,907	0.85
31-9093	Medical Equipment Preparers	1,950	1,900	-50	-2.6%	25,851	1.06
29-1123	Physical Therapists	9,430	9,410	-20	-0.2%	57,431	1.39
29-2091	Orthotists and Prosthetists	60	40	-20	-33.3%	61,010	0.17
31-2021	Physical Therapist Assistants	3,110	3,110	0	0.0%	35,804	1.21
29-1126	Respiratory Therapists	4,290	4,330	40	0.9%	43,722	0.97
29-1122	Occupational Therapists	5,910	6,000	90	1.5%	53,720	1.45
31-2011	Occupational Therapist Assistants	1,340	1,470	130	9.7%	37,005	1.57
29-1124	Radiation Therapists	460	640	180	39.1%	54,165	0.89
29-1127	Speech-Language Pathologists	6,020	6,250	230	3.8%	53,324	1.40
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	3,380	3,630	250	7.4%	23,223	1.13
29-1031	Dietitians and Nutritionists	2,490	2,880	390	15.7%	43,282	1.24
29-1051	Pharmacists	10,010	10,430	420	4.2%	71,808	0.87
29-1063	Internists, General	3,920	4,350	430	11.0%	116,592	1.52
29-1066	Psychiatrists	790	1,220	430	54.4%	114,220	1.05
29-1020	Dentists	3,170	3,650	480	15.1%	104,015	0.78
29-1067	Surgeons	1,570	2,100	530	33.8%	126,788	0.80
29-1041	Optometrists	1,120	1,750	630	56.3%	89,368	1.35
29-2081	Opticians, Dispensing	1,820	2,460	640	35.2%	35,682	0.73
29-2041	Emergency Medical Technicians and Paramedics	10,660	11,420	760	7.1%	27,426	1.25
31-9095	Pharmacy Aides	1,780	3,170	1,390	78.1%	19,222	1.02
31-9092	Medical Assistants	12,300	14,020	1,720	14.0%	27,162	0.76
11-9111	Medical and Health Services Managers	12,080	13,930	1,850	15.3%	67,397	1.14
43-6013	Medical Secretaries	22,420	24,650	2,230	9.9%	29,723	1.38
31-1013	Psychiatric Aides	5,050	8,310	3,260	64.6%	27,687	2.60
31-9091	Dental Assistants	8,970	13,470	4,500	50.2%	30,819	0.94
29-2021	Dental Hygienists	6,400	12,020	5,620	87.8%	56,448	1.50
Health Services Technicians Occupation Group							
29-2034	Radiologic Technologists and Technicians	12,630	10,240	-2,390	-18.9%	43,780	1.14
29-2052	Pharmacy Technicians	12,320	10,490	-1,830	-14.9%	22,224	0.95
29-2071	Medical Records and Health Information Technicians	9,290	8,330	-960	-10.3%	27,655	1.09
29-2051	Dietetic Technicians	2,490	1,900	-590	-23.7%	24,381	1.23
29-2054	Respiratory Therapy Technicians	1,330	1,050	-280	-21.1%	36,886	0.68
29-2032	Diagnostic Medical Sonographers	2,160	2,000	-160	-7.4%	52,619	1.13
29-2053	Psychiatric Technicians	2,440	2,460	20	0.8%	35,817	0.77
29-2011	Medical and Clinical Laboratory Technologists	8,560	8,620	60	0.7%	45,587	1.11
29-2033	Nuclear Medicine Technologists	870	960	90	10.3%	50,793	1.03
29-2055	Surgical Technologists	2,850	3,280	430	15.1%	34,525	0.91
29-9010	Occupational Health and Safety Specialists and Technicians	1,710	2,160	450	26.3%	48,153	1.04
29-2031	Cardiovascular Technologists and Technicians	1,800	2,460	660	36.7%	43,797	1.12
29-2012	Medical and Clinical Laboratory Technicians	5,850	7,530	1,680	28.7%	34,840	0.96
Insurance / Sales Occupation Group							
13-2053	Insurance Underwriters	8,790	7,070	-1,720	-19.6%	54,509	1.42
43-9041	Insurance Claims and Policy Processing Clerks	17,660	17,250	-410	-2.3%	31,230	1.25
13-1031	Claims Adjusters, Examiners, and Investigators	12,120	12,940	820	6.8%	47,982	1.20
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	24,730	26,440	1,710	6.9%	63,979	1.33
41-3021	Insurance Sales Agents	6,380	9,240	2,860	44.8%	52,892	0.64
Production and R&D Occupation Group							
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	2,680	1,980	-700	-26.1%	63,775	1.01
19-2041	Environmental Scientists and Specialists, Including Health	3,510	3,310	-200	-5.7%	50,570	1.08
51-9082	Medical Appliance Technicians	440	370	-70	-15.9%	31,542	0.56
49-9062	Medical Equipment Repairers	1,110	1,050	-60	-5.4%	39,161	0.89
19-1041	Epidemiologists	140	140	0	0.0%	55,490	0.66
51-9081	Dental Laboratory Technicians	910	950	40	4.4%	31,710	0.45
19-4021	Biological Technicians	3,160	3,240	80	2.5%	38,971	1.39
19-1021	Biochemists and Biophysicists	710	920	210	29.6%	66,276	1.06
17-2031	Biomedical Engineers	460	810	350	76.1%	64,675	2.17
51-9063	Ophthalmic Laboratory Technicians	1,260	1,720	460	36.5%	24,636	0.93
19-1042	Medical Scientists, Except Epidemiologists	1,060	1,650	590	55.7%	82,650	0.66
Educators/Counselors Occupation Group							
25-1071	Health Specialties Teachers, Postsecondary	5,500	4,320	-1,180	-21.5%	76,369	0.95
25-1042	Biological Science Teachers, Postsecondary	1,980	1,910	-70	-3.5%	62,559	0.92
25-1072	Nursing Instructors and Teachers, Postsecondary	2,400	2,410	10	0.4%	54,390	1.31
21-1014	Mental Health Counselors	6,750	6,800	50	0.7%	34,453	NA
21-1011	Substance Abuse and Behavioral Disorder Counselors	4,280	4,390	110	2.6%	31,599	NA
21-1091	Health Educators	2,560	3,020	460	18.0%	41,225	NA
21-1022	Medical and Public Health Social Workers	7,250	7,960	710	9.8%	40,273	NA
21-1015	Rehabilitation Counselors	8,470	10,280	1,810	21.4%	31,177	NA
21-1023	Mental Health and Substance Abuse Social Workers	5,600	7,790	2,190	39.1%	38,735	NA

Connecticut

Occupation Code	Occupation Title	1999 Employment	2001 Employment	99-'01 Absolute Growth	99-'01 Percent Growth	1999 Wage	2001 Wage	2001 LQ
CT	Total Health Care Related Occupations	163,760	170,070	6,310	3.9%	49,941	53,388	1.21
Practitioners and Providers Occupation Group								
31-1011	Home Health Aides	12,740	9,290	-4,450	-34.9%	24,810	23,990	1.14
29-1067	Surgeons	1,560	790	-770	-49.4%	133,420	128,700	1.24
31-9094	Medical Transcriptionists	1,620	880	-740	-45.7%	29,070	32,650	0.72
29-1061	Anesthesiologists	920	550	-370	-40.2%	139,640	135,730	1.71
29-1125	Recreational Therapists	1,140	870	-270	-23.7%	34,880	37,960	2.49
29-1071	Physician Assistants	1,060	830	-230	-21.7%	63,940	67,510	1.14
29-1031	Dietitians and Nutritionists	700	520	-180	-25.7%	46,560	48,310	0.93
29-1121	Audiologists	340	170	-170	-50.0%	42,690	51,100	1.18
29-1011	Chiropractors	520	360	-160	-30.8%	72,130	79,720	1.53
43-6013	Medical Secretaries	5,460	5,330	-130	-2.4%	28,690	30,830	1.23
29-2061	Licensed Practical and Licensed Vocational Nurses	7,130	7,030	-100	-1.4%	39,410	42,690	0.79
31-2022	Physical Therapist Aides	500	470	-30	-6.0%	21,670	24,320	1.03
11-9111	Medical and Health Services Managers	3,480	3,460	-20	-0.6%	69,700	76,580	1.17
31-1013	Psychiatric Aides	390	380	-10	-2.6%	30,210	25,670	0.49
31-2012	Occupational Therapist Aides	50	40	-10	-20.0%	26,880	28,370	0.41
31-9011	Massage Therapists	270	270	0	0.0%	36,260	45,390	0.79
29-1064	Obstetricians and Gynecologists	490	530	40	8.2%	134,280	130,110	2.36
31-9093	Medical Equipment Preparers	400	450	50	12.5%	25,650	28,700	1.03
31-2011	Occupational Therapist Assistants	280	340	60	21.4%	35,990	40,360	1.49
31-2021	Physical Therapist Assistants	590	650	60	10.2%	29,020	33,720	1.05
29-1066	Psychiatrists	450	530	80	17.8%	103,050	106,860	1.88
29-1122	Occupational Therapists	1,230	1,330	100	8.1%	57,470	58,330	1.33
29-1123	Physical Therapists	2,110	2,210	100	4.7%	61,860	63,170	1.34
29-1065	Pediatricians, General	330	460	130	39.4%	96,100	102,780	1.46
29-1041	Optometrists	260	440	180	69.2%	73,750	93,300	1.40
29-1051	Pharmacists	2,390	2,570	180	7.5%	66,630	76,440	0.88
29-1127	Speech-Language Pathologists	1,350	1,530	180	13.3%	57,770	59,060	1.42
29-2081	Opticians, Dispensing	380	590	210	55.3%	35,740	42,020	0.72
29-1020	Dentists	1,510	1,760	250	16.6%	101,140	107,120	1.54
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	500	760	260	52.0%	18,710	22,510	0.97
31-9095	Pharmacy Aides	350	690	340	97.1%	19,820	19,690	0.91
29-1126	Respiratory Therapists	710	1,080	370	52.1%	41,690	45,690	1.00
29-1062	Family and General Practitioners	1,230	1,610	380	30.9%	94,330	117,060	0.91
29-1111	Registered Nurses	30,870	31,330	460	1.5%	49,480	53,150	1.09
29-1063	Internists, General	500	1,020	520	104.0%	124,520	107,450	1.47
31-9091	Dental Assistants	2,640	3,440	800	30.3%	27,540	32,850	0.99
29-2021	Dental Hygienists	2,020	2,980	960	47.5%	58,670	57,540	1.53
31-1012	Nursing Aides, Orderlies, and Attendants	22,100	23,300	1,200	5.4%	23,290	25,730	1.37
31-9092	Medical Assistants	2,840	4,130	1,290	45.4%	26,900	28,890	0.92
29-2041	Emergency Medical Technicians and Paramedics	1,310	2,620	1,310	100.0%	26,670	29,410	1.18
29-1081	Podiatrists	NA	200	NA	NA	112,170	96,510	NA
29-1124	Radiation Therapists	180	NA	NA	NA	51,800	41,980	NA
Health Services Technicians Occupation Group								
29-2034	Radiologic Technologists and Technicians	3,410	2,780	-630	-18.5%	37,640	43,990	1.27
29-2071	Medical Records and Health Information Technicians	1,620	1,180	-440	-27.2%	30,600	32,040	0.64
29-2052	Pharmacy Technicians	2,870	2,510	-360	-12.5%	21,060	23,020	0.93
29-2051	Dietetic Technicians	640	450	-190	-29.7%	25,780	27,050	1.20
29-2055	Surgical Technologists	780	650	-130	-16.7%	33,280	36,820	0.74
29-2032	Diagnostic Medical Sonographers	640	520	-120	-18.8%	45,820	56,280	1.21
29-2054	Respiratory Therapy Technicians	340	280	-60	-17.6%	35,770	39,620	0.75
29-2033	Nuclear Medicine Technologists	140	220	80	57.1%	48,650	56,940	0.97
29-2012	Medical and Clinical Laboratory Technicians	1,190	1,300	110	9.2%	34,140	38,880	0.68
29-2011	Medical and Clinical Laboratory Technologists	1,520	1,760	240	15.8%	46,130	49,810	0.93
29-9010	Occupational Health and Safety Specialists and Technicians	230	540	310	134.8%	46,330	50,900	1.07
29-2031	Cardiovascular Technologists and Technicians	210	560	350	166.7%	39,200	52,680	1.05
29-2053	Psychiatric Technicians	1,020	1,420	400	39.2%	41,200	42,360	1.83
Insurance / Sales Occupation Group								
13-2053	Insurance Underwriters	2,130	2,250	120	5.6%	56,190	59,120	1.86
43-9041	Insurance Claims and Policy Processing Clerks	5,130	5,550	420	8.2%	30,530	34,000	1.65
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	5,430	6,050	620	11.4%	56,610	71,900	1.26
13-1031	Claims Adjusters, Examiners, and Investigators	4,320	4,970	650	15.0%	44,840	50,640	1.91
41-3021	Insurance Sales Agents	3,220	5,410	2,190	68.0%	56,800	58,920	1.55
Production and R&D Occupation Group								
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	1,110	610	-500	-45.0%	51,630	60,820	1.29
19-2041	Environmental Scientists and Specialists, Including Health	730	580	-150	-20.5%	49,870	52,170	0.78
51-9081	Dental Laboratory Technicians	310	220	-90	-29.0%	29,600	35,950	0.43
51-9082	Medical Appliance Technicians	170	150	-20	-11.8%	22,520	29,150	0.93
51-9083	Ophthalmic Laboratory Technicians	460	470	10	2.2%	26,960	29,190	1.05
17-2031	Biomedical Engineers	60	110	50	83.3%	54,240	54,260	1.21
49-9062	Medical Equipment Repairers	180	240	60	33.3%	43,980	38,320	0.84
19-4021	Biological Technicians	590	680	90	15.3%	41,880	37,890	1.20
19-1042	Medical Scientists, Except Epidemiologists	1,060	1,650	590	55.7%	54,160	82,650	2.73
19-1021	Biochemists and Biophysicists	NA	1,450	NA	NA	57,010	69,210	NA
Educators/Counselors Occupation Group								
21-1011	Substance Abuse and Behavioral Disorder Counselors	1,370	1,060	-310	-22.6%	33,960	36,190	NA
21-1014	Mental Health Counselors	1,520	1,350	-170	-11.2%	33,330	33,250	NA
21-1022	Medical Social Workers	1,760	1,730	-30	-1.7%	45,370	43,680	NA
21-1091	Health Educators	450	420	-30	-6.7%	38,660	40,910	NA
25-1072	Nursing Instructors and Teachers, Postsecondary	440	430	-10	-2.3%	59,960	61,220	0.96
21-1023	Mental Health and Substance Abuse Social Workers	1,130	1,690	560	49.6%	43,520	46,020	NA
21-1015	Rehabilitation Counselors	2,860	3,690	830	29.0%	34,220	35,110	NA

Maine

Occupation Code	Occupation Title	1999 Employment	2001 Employment	99-'01 Absolute Growth	99-'01 Percent Growth	1999 Wage	2001 Wage	2001 LQ
ME	Total Health Care Related Occupations	60,660	61,360	700	1.2%	42,528	44,803	1.23
Practitioners and Providers Occupation Group								
31-9091	Dental Assistants	1,220	810	-410	-33.6%	23,540	24,560	0.65
31-1013	Psychiatric Aides	790	430	-360	-45.6%	21,010	22,960	1.56
11-9111	Medical and Health Services Managers	1,840	1,580	-260	-14.1%	55,530	59,020	1.50
29-1111	Registered Nurses	12,440	12,180	-260	-2.1%	40,480	45,080	1.19
29-1011	Chiropractors	270	50	-220	-81.5%	53,020	55,070	0.60
29-1071	Physician Assistants	670	560	-110	-16.4%	64,380	74,220	2.15
31-9093	Medical Equipment Preparers	290	200	-90	-31.0%	20,750	22,340	1.29
29-1064	Obstetricians and Gynecologists	130	80	-50	-38.5%	143,430	141,080	1.00
31-9095	Pharmacy Aides	130	80	-50	-38.5%	19,060	16,820	0.30
29-1122	Occupational Therapists	440	400	-40	-9.1%	46,500	48,860	1.12
29-1123	Physical Therapists	810	770	-40	-4.9%	50,010	49,080	1.31
29-1125	Recreational Therapists	230	190	-40	-17.4%	24,850	26,890	1.53
29-1066	Psychiatrists	150	130	-20	-13.3%	127,160	132,260	1.30
29-2061	Licensed Practical and Licensed Vocational Nurses	2,400	2,380	-20	-0.8%	27,420	29,200	0.75
31-2022	Physical Therapist Aides	140	120	-20	-14.3%	18,360	20,530	0.73
29-1126	Respiratory Therapists	410	400	-10	-2.4%	35,010	39,340	1.04
29-1031	Dietitians and Nutritionists	220	220	0	0.0%	31,560	30,980	1.10
29-1065	Pediatricians, General	90	90	0	0.0%	107,650	114,160	0.80
29-1124	Radiation Therapists	60	60	0	0.0%	36,490	41,910	0.96
31-2012	Occupational Therapist Aides	40	50	10	25.0%	22,890	22,800	1.43
29-1062	Family and General Practitioners	640	670	30	4.7%	111,220	108,830	1.07
29-2081	Opticians, Dispensing	150	180	30	20.0%	22,720	26,720	0.62
31-9094	Medical Transcriptionists	670	700	30	4.5%	23,350	25,540	1.61
31-2011	Occupational Therapist Assistants	30	70	40	133.3%	27,440	31,310	0.86
29-2021	Dental Hygienists	820	880	60	7.3%	40,630	48,860	1.27
31-2021	Physical Therapist Assistants	180	240	60	33.3%	30,770	34,910	1.08
29-1020	Dentists	550	650	100	18.2%	94,430	86,050	1.60
29-1051	Pharmacists	810	940	130	16.0%	64,150	73,050	0.91
29-1063	Internists, General	130	290	160	123.1%	122,470	119,800	1.17
43-6013	Medical Secretaries	1,390	1,550	160	11.5%	22,450	25,120	1.00
29-1067	Surgeons	200	370	170	85.0%	143,990	144,910	1.63
29-1127	Speech-Language Pathologists	440	610	170	38.6%	40,050	43,210	1.58
29-2041	Emergency Medical Technicians and Paramedics	1,090	1,260	170	15.6%	20,490	22,340	1.59
29-1041	Optometrists	70	260	190	271.4%	85,520	83,180	2.32
31-9092	Medical Assistants	1,090	1,430	340	31.2%	24,200	24,740	0.89
31-1011	Home Health Aides	3,700	4,230	530	14.3%	16,920	18,590	1.63
31-1012	Nursing Aides, Orderlies, and Attendants	8,570	9,170	600	7.0%	17,430	19,480	1.51
29-2091	Orthotists and Prosthetists	NA	50	NA	NA	NA	39,930	NA
31-9011	Massage Therapists	NA	NA	NA	NA	12,880	31,130	NA
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	NA	490	NA	NA	NA	20,890	NA
Health Services Technicians Occupation Group								
29-2034	Radiologic Technologists and Technicians	1,290	840	-450	-34.9%	32,000	36,640	1.08
29-2053	Psychiatric Technicians	590	370	-220	-37.3%	20,620	23,180	1.34
29-2071	Medical Records and Health Information Technicians	1,020	840	-180	-17.6%	21,670	23,310	1.28
29-2032	Diagnostic Medical Sonographers	130	130	0	0.0%	41,640	45,700	0.85
29-2052	Pharmacy Technicians	1,230	1,180	-50	-4.1%	18,050	20,110	1.23
29-2033	Nuclear Medicine Technologists	110	70	-40	-36.4%	37,000	44,220	0.87
29-2051	Dietetic Technicians	150	140	-10	-6.7%	23,630	22,900	1.04
29-2054	Respiratory Therapy Technicians	40	50	10	25.0%	28,390	33,460	0.38
29-2055	Surgical Technologists	260	270	10	3.8%	25,780	28,380	0.86
29-9010	Occupational Health and Safety Specialists and Technicians	170	200	30	17.6%	37,760	42,870	1.11
29-2011	Medical and Clinical Laboratory Technologists	820	870	50	6.1%	36,210	40,050	1.29
29-2031	Cardiovascular Technologists and Technicians	120	220	100	83.3%	28,680	32,140	1.16
29-2012	Medical and Clinical Laboratory Technicians	390	570	180	46.2%	27,020	28,800	0.84
Insurance / Sales Occupation Group								
43-9041	Insurance Claims and Policy Processing Clerks	1,820	1,610	-210	-11.5%	23,180	26,260	1.35
13-1031	Claims Adjusters, Examiners, and Investigators	1,210	1,150	-60	-5.0%	38,420	45,580	1.24
13-2053	Insurance Underwriters	360	350	-10	-2.8%	41,890	43,760	0.81
41-3021	Insurance Sales Agents	1,210	1,270	60	5.0%	45,320	41,690	1.02
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	1,250	1,500	250	20.0%	53,280	60,250	0.87
Production and R&D Occupation Group								
51-9081	Dental Laboratory Technicians	180	130	-50	-27.8%	29,950	31,400	0.71
19-4021	Biological Technicians	450	410	-40	-8.9%	30,110	31,700	2.03
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	160	150	-10	-6.3%	48,440	52,090	0.89
19-1021	Biochemists and Biophysicists	60	50	-10	-16.7%	56,630	53,850	0.67
51-9082	Medical Appliance Technicians	30	40	10	33.3%	35,930	28,240	0.70
19-2041	Environmental Scientists and Specialists, Including Health	410	430	20	4.9%	39,180	41,260	1.62
17-2031	Biomedical Engineers	NA	NA	NA	NA	NA	68,360	NA
49-9062	Medical Equipment Repairers	NA	30	NA	NA	NA	38,680	NA
51-9083	Ophthalmic Laboratory Technicians	NA	50	NA	NA	20,600	20,180	NA
Educators/Counselors Occupation Group								
25-1071	Health Specialties Teachers, Postsecondary	230	120	-110	-47.8%	52,760	44,490	0.30
25-1072	Nursing Instructors and Teachers, Postsecondary	240	170	-70	-29.2%	45,680	50,300	1.07
21-1022	Medical Social Workers	620	560	-60	-9.7%	35,670	35,930	NA
21-1011	Substance Abuse and Behavioral Disorder Counselors	380	330	-50	-13.2%	29,020	32,700	NA
25-1042	Biological Science Teachers, Postsecondary	110	140	30	27.3%	47,110	54,270	0.78
21-1015	Rehabilitation Counselors	830	910	80	9.6%	20,650	22,990	NA
21-1091	Health Educators	280	370	90	32.1%	30,520	47,020	NA
21-1014	Mental Health Counselors	410	640	230	56.1%	38,630	32,830	NA
21-1023	Mental Health and Substance Abuse Social Workers	750	1,000	250	33.3%	31,950	33,650	NA

Massachusetts

Occupation Code	Occupation Title	1999 Employment	2001 Employment	99-'01 Absolute Growth	99-'01 Percent Growth	1999 wage	2001 wage	2001 LQ
MA	Total Health Care Related Occupations	330,620	333,410	2,790	0.8%	47,330	51,648	1.23
Practitioners and Providers Occupation Group								
31-1012	Nursing Aides, Orderlies, and Attendants	46,810	40,680	-6,130	-13.1%	21,030	23,630	1.23
31-1011	Home Health Aides	17,980	13,990	-3,990	-22.2%	20,200	21,890	0.99
29-2061	Licensed Practical and Licensed Vocational Nurses	20,680	17,280	-3,400	-16.4%	35,640	38,420	1.00
29-1111	Registered Nurses	77,180	74,200	-2,980	-3.9%	49,200	52,550	1.33
29-2041	Emergency Medical Technicians and Paramedics	6,670	5,880	-790	-11.8%	25,430	28,740	1.36
29-1061	Anesthesiologists	990	440	-550	-55.6%	135,810	137,470	0.71
31-9094	Medical Transcriptionists	2,280	1,710	-550	-24.3%	26,720	29,130	0.72
29-1062	Family and General Practitioners	3,150	2,770	-380	-12.1%	83,870	112,530	0.81
29-1123	Physical Therapists	4,780	4,510	-270	-5.6%	55,420	57,410	1.41
31-2021	Physical Therapist Assistants	1,890	1,660	-230	-12.2%	33,170	36,810	1.38
29-1126	Respiratory Therapists	2,440	2,240	-200	-8.2%	40,660	44,070	1.07
31-2022	Physical Therapist Aides	940	750	-190	-20.2%	25,900	26,810	0.84
29-1127	Speech-Language Pathologists	2,900	2,770	-130	-4.5%	52,740	53,010	1.32
29-1064	Obstetricians and Gynecologists	380	260	-120	-31.6%	139,480	132,190	0.60
29-1125	Recreational Therapists	1,210	1,090	-120	-9.9%	29,490	30,700	1.61
31-9092	Medical Assistants	5,940	5,830	-110	-1.9%	25,160	27,640	0.67
29-1122	Occupational Therapists	3,230	3,140	-90	-2.8%	51,780	53,940	1.61
31-2012	Occupational Therapist Aides	340	260	-80	-23.5%	32,980	31,010	1.36
29-1051	Pharmacists	4,900	4,840	-60	-1.2%	61,370	69,760	0.86
31-2011	Occupational Therapist Assistants	900	840	-60	-6.7%	34,400	37,060	1.90
31-9011	Massage Therapists	750	700	-50	-6.7%	26,780	41,720	1.05
29-1063	Internists, General	2,400	2,360	-40	-1.7%	126,810	121,510	1.75
29-1081	Podiatrists	110	90	-20	-18.2%	101,010	116,940	0.47
29-2091	Orthotists and Prosthetists	60	40	-20	-33.3%	61,470	61,010	0.35
29-1071	Physician Assistants	1,380	1,390	10	0.7%	44,500	58,890	0.98
29-1121	Audiologists	300	320	20	6.7%	47,670	53,950	1.15
31-9093	Medical Equipment Preparers	960	1,020	60	6.3%	23,510	25,470	1.20
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	2,110	2,240	130	6.2%	21,720	24,920	1.48
29-1124	Radiation Therapists	320	520	200	62.5%	52,330	56,040	1.53
29-1066	Psychiatrists	330	560	230	69.7%	102,630	120,420	1.03
29-2081	Opticians, Dispensing	880	1,130	250	28.4%	39,990	34,870	0.71
29-1041	Optometrists	600	870	270	45.0%	69,740	91,360	1.42
29-1067	Surgeons	780	1,090	310	39.7%	140,710	141,540	0.88
29-1031	Dietitians and Nutritionists	810	1,650	840	103.7%	42,360	43,630	1.51
31-9095	Pharmacy Aides	730	1,870	1,140	156.2%	21,130	19,590	1.27
11-9111	Medical and Health Services Managers	5,400	7,430	2,030	37.6%	60,970	63,900	1.29
43-6013	Medical Secretaries	9,600	12,430	2,830	29.5%	27,250	31,130	1.47
31-1013	Psychiatric Aides	3,750	7,390	3,640	97.1%	25,050	28,160	4.91
31-9091	Dental Assistants	2,200	6,280	4,080	185.5%	27,680	31,320	0.93
29-2021	Dental Hygienists	1,450	6,100	4,650	320.7%	49,710	58,170	1.61
29-1065	Pediatricians, General	610	NA	NA	NA	101,310	130,730	NA
Health Services Technicians Occupation Group								
29-2034	Radiologic Technologists and Technicians	5,940	4,710	-1,230	-20.7%	41,130	46,140	1.11
29-2052	Pharmacy Technicians	5,470	4,620	-850	-15.5%	19,190	22,970	0.88
29-2054	Respiratory Therapy Technicians	890	680	-210	-23.6%	34,030	36,420	0.94
29-2071	Medical Records and Health Information Technicians	4,780	4,620	-160	-3.3%	24,310	27,060	1.29
29-2053	Psychiatric Technicians	720	570	-150	-20.8%	25,120	27,830	0.38
29-2011	Medical and Clinical Laboratory Technologists	4,490	4,360	-130	-2.9%	40,780	45,660	1.19
29-9010	Occupational Health and Safety Specialists and Technicians	1,140	1,010	-130	-11.4%	48,980	48,740	1.03
29-2032	Diagnostic Medical Sonographers	1,020	980	-40	-3.9%	44,050	53,640	1.18
29-2051	Dietetic Technicians	920	960	40	4.3%	18,970	23,580	1.31
29-2033	Nuclear Medicine Technologists	480	530	50	10.4%	45,490	48,970	1.21
29-2031	Cardiovascular Technologists and Technicians	990	1,280	290	29.3%	35,190	43,340	1.24
29-2055	Surgical Technologists	1,450	1,870	420	29.0%	33,020	35,000	1.10
29-2012	Medical and Clinical Laboratory Technicians	3,170	4,400	1,230	38.8%	33,900	33,640	1.19
Insurance / Sales Occupation Group								
13-2053	Insurance Underwriters	5,090	3,410	-1,680	-33.0%	46,430	55,080	1.46
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	12,690	12,920	230	1.8%	56,960	62,360	1.38
43-9041	Insurance Claims and Policy Processing Clerks	6,420	6,800	380	5.9%	30,580	30,200	1.04
13-1031	Claims Adjusters, Examiners, and Investigators	3,520	4,480	960	27.3%	40,610	43,660	0.89
Production and R&D Occupation Group								
19-2041	Environmental Scientists and Specialists, Including Health	1,740	1,480	-260	-14.9%	50,350	54,810	1.02
49-9062	Medical Equipment Repairers	750	610	-140	-18.7%	35,270	40,160	1.10
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	1,070	950	-120	-11.2%	51,590	68,990	1.03
51-9082	Medical Appliance Technicians	240	180	-60	-25.0%	31,000	34,270	0.57
19-1041	Epidemiologists	140	140	0	0.0%	53,650	55,490	1.40
19-4021	Biological Technicians	1,930	1,970	40	2.1%	38,660	41,550	1.79
19-1021	Biochemists and Biophysicists	650	870	220	33.8%	64,380	66,990	2.14
51-9081	Dental Laboratory Technicians	260	480	220	84.6%	38,020	30,560	0.48
17-2031	Biomedical Engineers	340	650	310	91.2%	66,300	65,790	3.70
51-9083	Ophthalmic Laboratory Technicians	680	1,110	430	63.2%	25,660	23,000	1.28
Educators/Counselors Occupation Group								
25-1071	Health Specialties Teachers, Postsecondary	4,620	3,810	-810	-17.5%	83,280	79,170	1.77
21-1014	Mental Health Counselors	3,560	3,010	-550	-15.4%	30,820	36,390	NA
25-1042	Biological Science Teachers, Postsecondary	1,310	1,220	-90	-6.9%	55,560	63,030	1.25
25-1072	Nursing Instructors and Teachers, Postsecondary	1,200	1,430	230	19.2%	44,320	53,720	NA
21-1011	Substance Abuse and Behavioral Disorder Counselors	1,540	2,070	530	34.4%	29,110	30,740	NA
21-1091	Health Educators	1,060	1,600	540	50.9%	35,230	39,980	NA
21-1015	Rehabilitation Counselors	3,400	4,330	930	27.4%	27,450	30,550	NA
21-1022	Medical Social Workers	3,540	4,580	1,040	29.4%	39,380	40,150	NA
21-1023	Mental Health and Substance Abuse Social Workers	2,920	4,100	1,180	40.4%	30,890	37,210	NA

New Hampshire

Occupation Code	Occupation Title	1999 Employment	2001 Employment	99-'01 Absolute Growth	99-'01 Percent Growth	1999 Wage	2001 Wage	2001 LQ
NH	Total Health Care Related Occupations	49,960	50,040	80	0.2%	42,101	46,871	0.98
Practitioners and Providers Occupation Group								
29-1062	Family and General Practitioners	1,060	380	-680	-64.2%	100,520	118,400	0.59
29-1063	Internists, General	560	250	-310	-55.4%	105,310	127,390	0.99
29-1111	Registered Nurses	11,990	11,740	-250	-2.1%	39,290	44,400	1.12
29-2021	Dental Hygienists	1,110	870	-240	-21.6%	47,900	56,590	1.23
29-1031	Dietitians and Nutritionists	350	200	-150	-42.9%	36,840	42,810	0.98
29-1123	Physical Therapists	910	860	-50	-5.5%	48,640	52,560	1.44
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	350	310	-40	-11.4%	14,010	17,680	1.09
31-9092	Medical Assistants	1,040	1,010	-30	-2.9%	21,770	25,240	0.62
29-1124	Radiation Therapists	80	60	-20	-25.0%	47,220	50,170	0.94
29-1127	Speech-Language Pathologists	500	480	-20	-4.0%	48,630	52,330	1.22
31-9094	Medical Transcriptionists	470	450	-20	-4.3%	25,860	27,480	1.01
29-1041	Optometrists	120	110	-10	-8.3%	47,850	67,200	0.96
31-1011	Home Health Aides	1,470	1,460	-10	-0.7%	17,910	21,570	0.55
29-1121	Audiologists	30	30	0	0.0%	48,230	51,110	0.57
31-2022	Physical Therapist Aides	80	80	0	0.0%	21,340	23,760	0.48
31-9011	Massage Therapists	140	140	0	0.0%	27,240	30,580	1.12
31-9095	Pharmacy Aides	170	170	0	0.0%	19,090	16,530	0.62
29-1067	Surgeons	240	250	10	4.2%	142,540	145,180	1.08
31-9093	Medical Equipment Preparers	80	90	10	12.5%	22,550	24,520	0.57
29-1066	Psychiatrists	80	100	20	25.0%	124,460	124,210	0.98
29-1125	Recreational Therapists	160	190	30	18.8%	27,810	27,970	1.50
29-1126	Respiratory Therapists	300	340	40	13.3%	37,920	41,700	0.87
31-2021	Physical Therapist Assistants	240	280	40	16.7%	32,200	36,950	1.24
29-1122	Occupational Therapists	510	560	50	9.8%	47,360	49,500	1.54
31-2011	Occupational Therapist Assistants	60	110	50	83.3%	32,090	33,020	1.33
29-1020	Dentists	550	610	60	10.9%	105,730	102,920	1.47
29-1065	Pediatricians, General	40	110	70	175.0%	85,760	130,540	0.96
29-1071	Physician Assistants	200	280	80	40.0%	53,790	64,930	1.05
43-6013	Medical Secretaries	1,830	1,920	90	4.9%	24,110	26,920	1.22
29-2081	Opticians, Dispensing	150	300	150	100.0%	26,780	34,130	1.01
29-1051	Pharmacists	660	820	160	24.2%	63,420	71,260	0.78
31-1012	Nursing Aides, Orderlies, and Attendants	5,950	6,170	220	3.7%	20,330	22,510	1.00
29-2041	Emergency Medical Technicians and Paramedics	510	740	230	45.1%	22,670	24,620	0.92
31-9091	Dental Assistants	940	1,190	250	26.6%	26,310	27,470	0.94
29-2061	Licensed Practical and Licensed Vocational Nurses	1,640	2,110	470	28.7%	28,940	32,620	0.65
29-1011	Chiropractors	NA	NA	NA	NA	NA	63,870	NA
29-2091	Orthotists and Prosthetists	NA	NA	NA	NA	42,390	49,700	NA
31-1013	Psychiatric Aides	NA	560	NA	NA	21,940	23,070	NA
Health Services Technicians Occupation Group								
29-2011	Dietetic Technicians	190	80	-110	-57.9%	20,530	24,550	0.58
29-2012	Medical and Clinical Laboratory Technicians	360	290	-70	-19.4%	28,190	35,310	0.42
29-2031	Pharmacy Technicians	800	780	-20	-2.5%	18,940	20,830	0.80
29-2032	Medical and Clinical Laboratory Technologists	540	550	10	1.9%	36,790	40,520	0.80
29-2033	Cardiovascular Technologists and Technicians	130	160	30	23.1%	37,190	41,880	0.83
29-2034	Nuclear Medicine Technologists	30	60	30	100.0%	40,290	48,870	0.73
29-2051	Radiologic Technologists and Technicians	650	690	40	6.2%	33,450	39,930	0.87
29-2052	Diagnostic Medical Sonographers	60	130	70	116.7%	43,900	44,020	0.83
29-2055	Medical Records and Health Information Technicians	660	730	70	10.6%	23,890	25,770	1.09
29-2071	Surgical Technologists	190	270	80	42.1%	27,920	31,460	0.85
29-9010	Occupational Health and Safety Specialists and Technicians	50	190	140	280.0%	45,430	47,550	1.04
Insurance / Sales Occupation Group								
43-9041	Insurance Claims and Policy Processing Clerks	2,160	1,480	-680	-31.5%	35,830	33,510	1.21
13-1031	Claims Adjusters, Examiners, and Investigators	1,000	670	-330	-33.0%	66,740	59,420	0.71
13-2053	Insurance Underwriters	410	430	20	4.9%	42,600	44,120	0.98
41-3021	Insurance Sales Agents	990	1,180	190	19.2%	43,680	41,830	0.93
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	3,120	4,300	1,180	37.8%	56,130	61,630	2.46
Production and R&D Occupation Group								
19-2041	Environmental Scientists and Specialists, Including Health	280	250	-30	-10.7%	46,250	44,030	0.92
19-4021	Biological Technicians	90	70	-20	-22.2%	32,680	34,080	0.34
49-9062	Medical Equipment Repairers	140	120	-20	-14.3%	34,160	37,720	1.15
17-2031	Biomedical Engineers	60	50	-10	-16.7%	57,230	73,090	1.52
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	90	80	-10	-11.1%	56,280	58,240	0.46
51-9083	Ophthalmic Laboratory Technicians	120	140	20	16.7%	24,900	22,320	0.86
51-9082	Medical Appliance Technicians	NA	NA	NA	NA	NA	30,860	NA
		780	710	-90				
Educators/Counselors Occupation Group								
21-1015	Rehabilitation Counselors	940	680	-260	-27.7%	19,270	23,470	NA
21-1011	Substance Abuse and Behavioral Disorder Counselors	390	190	-200	-51.3%	23,490	26,660	NA
21-1022	Medical and Public Health Social Workers	750	560	-190	-25.3%	34,840	34,560	NA
25-1072	Nursing Instructors and Teachers, Postsecondary	320	150	-170	-53.1%	41,480	50,650	0.92
21-1091	Health Educators	310	210	-100	-32.3%	31,400	34,490	NA
25-1042	Biological Science Teachers, Postsecondary	180	220	40	22.2%	44,550	70,700	1.21
21-1023	Mental Health and Substance Abuse Social Workers	160	230	70	43.8%	33,470	34,450	NA
21-1014	Mental Health Counselors	220	330	110	50.0%	32,490	34,200	NA

Rhode Island

Occupation Code	Occupation Title	1999 Employment	2001 Employment	99-'01 Absolute Growth	99-'01 Percent Growth	1999 Wage	2001 Wage	2001 LQ
RI	Total Health Care Related Occupations	49,770	50,630	860	1.7%	47,291	51,842	1.28
Practitioners and Providers Occupation Group								
29-2061	Licensed Practical and Licensed Vocational Nurses	2,440	1,980	-460	-18.9%	34,890	39,820	0.79
31-9094	Medical Transcriptionists	570	330	-240	-42.1%	25,160	28,840	0.96
29-2041	Emergency Medical Technicians and Paramedics	650	460	-190	-29.2%	22,140	23,660	0.74
29-1126	Respiratory Therapists	430	270	-160	-37.2%	40,530	42,000	0.89
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	260	120	-140	-53.8%	18,500	20,750	0.55
31-9091	Dental Assistants	1,250	1,120	-130	-10.4%	27,330	30,650	1.14
29-1031	Dietitians and Nutritionists	310	190	-120	-38.7%	39,990	43,350	1.20
29-1051	Pharmacists	950	850	-100	-10.5%	63,910	69,270	1.04
43-6013	Medical Secretaries	2,660	2,570	-90	-3.4%	24,810	26,630	2.10
31-9093	Medical Equipment Preparers	220	140	-80	-36.4%	22,400	25,340	1.14
31-9095	Pharmacy Aides	370	290	-80	-21.6%	18,120	18,630	1.36
29-1062	Family and General Practitioners	650	600	-50	-7.7%	98,740	123,510	1.21
31-2022	Physical Therapist Aides	120	80	-40	-33.3%	30,730	32,290	0.62
29-1125	Recreational Therapists	90	90	0	0.0%	34,930	35,050	0.92
31-9011	Massage Therapists	90	90	0	0.0%	19,540	37,200	0.93
29-1071	Physician Assistants	90	120	30	33.3%	63,950	63,300	0.58
31-2011	Occupational Therapist Assistants	70	110	40	57.1%	31,690	33,820	1.72
29-1066	Psychiatrists	80	130	50	62.5%	103,250	124,130	1.64
29-1122	Occupational Therapists	360	420	60	16.7%	53,420	50,150	1.49
29-1063	Internists, General	170	270	100	58.8%	115,640	107,480	1.38
29-2021	Dental Hygienists	490	590	100	20.4%	52,780	52,350	1.08
31-2021	Physical Therapist Assistants	90	190	100	111.1%	33,320	36,170	1.09
29-1127	Speech-Language Pathologists	410	530	120	29.3%	49,590	54,890	1.74
29-1123	Physical Therapists	490	630	140	28.6%	59,770	58,820	1.36
29-1020	Dentists	260	430	170	65.4%	116,210	120,160	1.34
11-9111	Medical and Health Services Managers	870	1,060	190	21.8%	64,660	73,070	1.27
29-1111	Registered Nurses	11,290	11,480	190	1.7%	48,040	50,550	1.41
29-1067	Surgeons	90	330	240	266.7%	138,870	125,380	1.84
31-9092	Medical Assistants	760	1,130	370	48.7%	21,380	23,090	0.89
31-1011	Home Health Aides	1,770	2,540	770	43.5%	18,990	23,450	1.24
31-1012	Nursing Aides, Orderlies, and Attendants	6,040	7,850	1,810	30.0%	19,370	22,140	1.64
29-1011	Chiropractors	NA	NA	NA	NA	75,240	75,410	NA
29-1041	Optometrists	NA	NA	NA	NA	79,290	97,000	NA
29-1061	Anesthesiologists	NA	70	NA	NA	NA	138,720	NA
29-1064	Obstetricians and Gynecologists	NA	40	NA	NA	126,130	135,100	NA
29-1065	Pediatricians, General	NA	390	NA	NA	128,640	124,710	NA
29-1081	Podiatrists	NA	NA	NA	NA	107,730	109,360	NA
29-1121	Audiologists	NA	NA	NA	NA	NA	50,190	NA
29-2081	Opticians, Dispensing	NA	NA	NA	NA	28,510	31,010	NA
31-1013	Psychiatric Aides	210	NA	NA	NA	22,020	26,650	NA
Health Services Technicians Occupation Group								
29-2052	Pharmacy Technicians	1,680	1,060	-620	-36.9%	18,820	20,550	1.40
29-2051	Dietetic Technicians	590	270	-320	-54.2%	20,730	23,500	2.55
29-2011	Medical and Clinical Laboratory Technologists	970	700	-270	-27.8%	45,170	47,740	1.32
29-2034	Radiologic Technologists and Technicians	1,030	850	-180	-17.5%	35,680	42,810	1.38
29-2071	Medical Records and Health Information Technicians	740	630	-110	-14.9%	22,620	29,560	1.21
29-2031	Cardiovascular Technologists and Technicians	250	190	-60	-24.0%	30,670	38,340	1.27
29-2033	Nuclear Medicine Technologists	110	80	-30	-27.3%	45,360	53,160	1.26
29-2053	Psychiatric Technicians	110	100	-10	-9.1%	34,070	35,190	0.46
29-9010	Occupational Health and Safety Specialists and Technicians	60	60	0	0.0%	44,030	45,470	0.42
29-2032	Diagnostic Medical Sonographers	180	190	10	5.6%	41,320	49,530	1.57
29-2055	Surgical Technologists	170	220	50	29.4%	32,750	35,010	0.89
29-2012	Medical and Clinical Laboratory Technicians	610	730	120	19.7%	36,100	40,900	1.36
Insurance / Sales Occupation Group								
43-9041	Insurance Claims and Policy Processing Clerks	1,910	1,270	-640	-33.5%	27,160	30,210	1.35
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	1,500	1,190	-310	-20.7%	52,250	58,490	0.88
13-1031	Claims Adjusters, Examiners, and Investigators	1,690	1,440	-250	-14.8%	34,330	48,970	1.96
41-3021	Insurance Sales Agents	460	590	130	28.3%	48,370	51,940	0.60
13-2053	Insurance Underwriters	230	390	160	69.6%	48,570	51,590	1.15
Production and R&D Occupation Group								
51-9081	Dental Laboratory Technicians	80	50	-30	-37.5%	31,300	33,820	0.34
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	100	90	-10	-10.0%	48,470	58,030	0.68
19-4021	Biological Technicians	60	50	-10	-16.7%	29,350	29,990	0.31
49-9062	Medical Equipment Repairers	40	80	40	100.0%	33,390	36,230	0.99
19-2041	Environmental Scientists and Specialists, Including Health	200	290	90	45.0%	50,750	52,020	1.38
19-1042	Medical Scientists, Except Epidemiologists	NA	NA	NA	NA	NA	37,790	NA
51-9083	Ophthalmic Laboratory Technicians	NA	NA	NA	NA	NA	20,280	NA
Educators/Counselors Occupation Group								
21-1022	Medical Social Workers	420	310	-110	-26.2%	34,970	41,530	NA
25-1042	Biological Science Teachers, Postsecondary	160	150	-10	-6.3%	67,460	71,110	1.06
25-1072	Nursing Instructors and Teachers, Postsecondary	140	170	30	21.4%	51,630	52,300	1.35
21-1023	Mental Health and Substance Abuse Social Workers	350	410	60	17.1%	29,210	37,870	NA
21-1091	Health Educators	100	180	80	80.0%	45,070	52,670	NA
21-1015	Rehabilitation Counselors	270	410	140	51.9%	40,160	33,310	NA
21-1011	Substance Abuse and Behavioral Disorder Counselors	450	610	160	35.6%	31,310	26,930	NA
21-1014	Mental Health Counselors	720	880	160	22.2%	24,540	29,400	NA
25-1071	Health Specialties Teachers, Postsecondary	NA	60	NA	NA	NA	64,150	NA

Vermont

Occupation Code	Occupation Title	1999 Employment	2001 Employment	99-'01 Absolute Growth	99-'01 Percent Growth	1999 Wages	2001 Wages	2001 LQ
VT	Total Health Care Related Occupations	23,960	25,430	1,470	6.1%	44,682	46,045	1.02
Practitioners and Providers Occupation Group								
43-6013	Medical Secretaries	1,480	850	-630	-42.6%	24,390	26,270	1.10
31-9092	Medical Assistants	630	490	-140	-22.2%	25,000	27,340	0.61
29-1020	Dentists	300	200	-100	-33.3%	97,400	103,700	0.99
11-9111	Medical and Health Services Managers	490	400	-90	-18.4%	65,550	70,970	0.76
29-1127	Speech-Language Pathologists	420	330	-90	-21.4%	44,750	46,990	1.72
31-9091	Dental Assistants	720	630	-90	-12.5%	25,790	29,410	1.02
31-2021	Physical Therapist Assistants	120	90	-30	-25.0%	26,100	30,360	0.82
31-1011	Home Health Aides	1,400	1,390	-10	-0.7%	17,140	17,780	1.08
31-1013	Psychiatric Aides	120	110	-10	-8.3%	18,730	21,340	0.80
31-2022	Physical Therapist Aides	70	60	-10	-14.3%	21,170	21,130	0.74
29-1031	Dietitians and Nutritionists	100	100	0	0.0%	42,260	39,260	1.00
29-1041	Optometrists	70	70	0	0.0%	91,930	97,710	1.25
29-1063	Internists, General	160	160	0	0.0%	121,810	95,010	1.30
29-2081	Opticians, Dispensing	260	260	0	0.0%	24,380	32,820	1.79
29-1122	Occupational Therapists	140	150	10	7.1%	47,170	46,930	0.84
31-9094	Medical Transcriptionists	270	290	20	7.4%	23,510	27,210	1.34
29-2041	Emergency Medical Technicians and Paramedics	430	460	30	7.0%	20,040	21,530	1.17
31-9095	Pharmacy Aides	30	70	40	133.3%	16,610	16,530	0.52
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	160	200	40	25.0%	17,770	17,010	1.45
29-1066	Psychiatrists	30	120	90	300.0%	121,660	79,900	2.41
29-2021	Dental Hygienists	510	600	90	17.6%	40,910	48,480	1.74
29-1123	Physical Therapists	330	430	100	30.3%	46,680	50,820	1.48
29-1051	Pharmacists	300	410	110	36.7%	65,680	70,460	0.80
29-2061	Licensed Practical and Licensed Vocational Nurses	1,280	1,420	140	10.9%	28,050	29,690	0.90
29-1071	Physician Assistants	40	200	160	400.0%	70,500	62,770	1.54
29-1062	Family and General Practitioners	140	370	230	164.3%	107,990	104,780	1.19
29-1067	Surgeons	170	440	270	158.8%	121,370	134,960	3.90
31-1012	Nursing Aides, Orderlies, and Attendants	2,430	2,910	480	19.8%	17,600	20,290	0.97
29-1111	Registered Nurses	4,450	5,040	590	13.3%	41,200	44,160	0.99
29-1011	Chiropractors	NA	NA	NA	NA	27,090	29,900	NA
29-1064	Obstetricians and Gynecologists	NA	80	NA	NA	NA	116,010	NA
29-1065	Pediatricians, General	NA	130	NA	NA	97,380	100,370	NA
Health Services Technicians Occupation Group								
29-2071	Medical Records and Health Information Technicians	470	330	-140	-29.8%	32,040	31,900	1.01
29-2031	Cardiovascular Technologists and Technicians	100	50	-50	-50.0%	33,780	34,180	0.53
29-2032	Diagnostic Medical Sonographers	80	50	-30	-37.5%	39,730	46,630	0.66
29-2054	Respiratory Therapy Technicians	60	40	-20	-33.3%	29,240	29,950	0.60
29-2034	Radiologic Technologists and Technicians	310	370	60	19.4%	33,670	37,770	0.95
29-2052	Pharmacy Technicians	270	340	70	25.9%	20,390	21,950	0.71
29-9010	Occupational Health and Safety Specialists and Technicians	60	160	100	166.7%	35,420	43,500	1.79
29-2012	Medical and Clinical Laboratory Technicians	130	240	110	84.6%	29,410	30,300	0.71
29-2011	Medical and Clinical Laboratory Technologists	220	380	160	72.7%	42,640	41,230	1.13
29-2053	Psychiatric Technicians	NA	110	NA	NA	28,580	30,050	NA
Insurance / Sales Occupation Group								
13-2053	Insurance Underwriters	570	240	-330	-57.9%	43,580	42,210	1.12
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	740	480	-260	-35.1%	46,570	54,010	0.56
13-1031	Claims Adjusters, Examiners, and Investigators	380	230	-150	-39.5%	44,220	47,240	0.50
41-3021	Insurance Sales Agents	500	790	290	58.0%	46,240	46,850	1.27
43-9041	Insurance Claims and Policy Processing Clerks	220	540	320	145.5%	30,240	26,690	0.91
Production and R&D Occupation Group								
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	150	100	-50	-33.3%	50,440	59,390	1.19
51-9081	Dental Laboratory Technicians	80	70	-10	-12.5%	29,220	25,340	0.76
19-4021	Biological Technicians	40	60	20	50.0%	29,210	29,440	0.60
19-2041	Environmental Scientists and Specialists, Including Health	150	280	130	86.7%	42,950	43,480	2.12
19-1042	Medical Scientists, Except Epidemiologists	NA	NA	NA	NA	NA	50,500	NA
51-9083	Ophthalmic Laboratory Technicians	NA	30	NA	NA	33,340	24,230	NA
Educators/Counselors Occupation Group								
25-1071	Health Specialties Teachers, Postsecondary	650	390	-260	-40.0%	55,960	58,810	1.99
21-1091	Health Educators	360	240	-120	-33.3%	43,780	38,450	NA
25-1042	Biological Science Teachers, Postsecondary	220	180	-40	-18.2%	60,800	48,740	2.03
21-1011	Substance Abuse and Behavioral Disorder Counselors	150	130	-20	-13.3%	40,300	34,180	NA
25-1072	Nursing Instructors and Teachers, Postsecondary	60	60	0	0.0%	57,770	48,270	0.76
21-1022	Medical Social Workers	160	220	60	37.5%	35,830	39,860	NA
21-1023	Mental Health and Substance Abuse Social Workers	290	360	70	24.1%	35,180	39,760	NA
21-1015	Rehabilitation Counselors	170	260	90	52.9%	28,810	31,260	NA
21-1014	Mental Health Counselors	320	590	270	84.4%	43,940	36,760	NA

United States

Occupation		1999	2001	99-'01	99-'01	1999	2001
Code	Occupation Title	Employment	Employment	Absolute Growth	Percent Growth	Wage	Wage
US	Total Health Care Related Occupations	10,276,140	10,773,410	497,270	4.8%	47,215	50,913
Practitioners and Providers Occupation Group							
31-1011	Home Health Aides	577,530	560,190	-17,340	-3.0%	18,810	18,510
31-2022	Physical Therapist Aides	44,340	35,250	-9,090	-20.5%	20,160	21,730
29-2061	Licensed Practical and Licensed Vocational Nurses	688,510	683,790	-4,720	-0.7%	29,020	31,490
29-1123	Physical Therapists	131,050	126,450	-4,600	-3.5%	58,350	59,130
29-1125	Recreational Therapists	30,190	26,830	-3,360	-11.1%	29,280	31,020
11-9111	Medical and Health Services Managers	230,640	227,410	-3,230	-1.4%	58,090	64,550
31-9094	Medical Transcriptionists	97,260	94,090	-3,170	-3.3%	24,660	27,020
29-1127	Speech-Language Pathologists	85,920	83,110	-2,810	-3.3%	47,820	50,330
29-1051	Pharmacists	226,300	223,630	-2,670	-1.2%	63,030	72,830
29-1121	Audiologists	12,950	11,040	-1,910	-14.7%	45,670	49,700
29-1122	Occupational Therapists	78,950	77,080	-1,870	-2.4%	51,910	52,210
31-2012	Occupational Therapist Aides	9,250	7,560	-1,690	-18.3%	22,710	24,340
29-2041	Emergency Medical Technicians and Paramedics	172,360	170,690	-1,670	-1.0%	23,280	25,450
29-1064	Obstetricians and Gynecologists	18,780	17,230	-1,550	-8.3%	135,430	133,430
29-1061	Anesthesiologists	25,910	24,700	-1,210	-4.7%	123,780	131,680
31-1012	Nursing Aides, Orderlies, and Attendants	1,308,740	1,307,600	-1,140	-0.1%	17,860	19,850
31-2021	Physical Therapist Assistants	48,600	47,810	-790	-1.6%	33,690	35,740
29-1071	Physician Assistants	56,750	56,200	-550	-1.0%	50,850	62,410
31-2011	Occupational Therapist Assistants	17,290	17,520	230	1.3%	33,230	36,170
29-1067	Surgeons	48,450	48,920	470	1.0%	135,660	137,040
29-1062	Family and General Practitioners	134,490	135,290	800	0.6%	104,090	110,020
29-1124	Radiation Therapists	12,340	13,460	1,120	9.1%	43,360	53,480
29-2091	Orthotists and Prosthetists	3,330	4,480	1,150	34.5%	44,610	51,510
29-1031	Dietitians and Nutritionists	41,320	43,200	1,880	4.5%	37,350	41,070
29-1126	Respiratory Therapists	80,230	82,930	2,700	3.4%	36,860	39,870
29-1041	Optometrists	21,400	24,230	2,830	13.2%	77,750	87,980
29-1081	Podiatrists	4,470	7,620	3,150	70.5%	100,090	94,500
29-1066	Psychiatrists	17,870	21,620	3,750	21.0%	103,660	113,570
29-2081	Opticians, Dispensing	58,860	63,120	4,260	7.2%	25,190	28,060
31-9093	Medical Equipment Preparers	29,070	33,540	4,470	15.4%	21,220	23,490
31-9011	Massage Therapists	21,910	26,440	4,530	20.7%	28,740	33,130
29-1063	Internists, General	48,740	53,310	4,570	9.4%	123,280	126,930
29-1065	Pediatricians, General	18,940	24,150	5,210	27.5%	112,760	116,550
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	53,680	60,050	6,370	11.9%	16,710	18,570
29-1011	Chiropractors	11,540	18,060	6,520	56.5%	70,930	76,870
31-1013	Psychiatric Aides	51,100	59,640	8,540	16.7%	22,390	23,760
31-9095	Pharmacy Aides	48,270	58,130	9,860	20.4%	19,010	19,170
29-1111	Registered Nurses	2,205,430	2,217,990	12,560	0.6%	44,470	48,240
29-1020	Dentists	69,360	87,810	18,450	26.6%	106,130	110,790
29-2021	Dental Hygienists	90,050	149,880	59,830	66.4%	48,150	56,770
31-9092	Medical Assistants	281,480	345,930	64,450	22.9%	22,650	24,360
43-6013	Medical Secretaries	247,950	334,200	86,250	34.8%	23,940	26,000
31-9091	Dental Assistants	175,160	267,840	92,680	52.9%	24,130	27,650
Health Services Technicians Occupation Group							
29-2034	Radiologic Technologists and Technicians	177,850	168,240	-9,610	-5.4%	35,510	38,860
29-2054	Respiratory Therapy Technicians	33,990	28,700	-5,290	-15.6%	33,430	35,220
29-2071	Medical Records and Health Information Technicians	142,720	142,170	-550	-0.4%	23,150	25,370
29-2033	Nuclear Medicine Technologists	17,880	17,360	-520	-2.9%	42,430	51,270
29-2031	Cardiovascular Technologists and Technicians	41,490	40,990	-500	-1.2%	33,280	36,510
29-2011	Medical and Clinical Laboratory Technologists	145,750	145,400	-350	-0.2%	39,310	43,060
29-2051	Dietetic Technicians	29,190	28,940	-250	-0.9%	21,000	23,360
29-2055	Surgical Technologists	64,810	67,460	2,650	4.1%	27,560	30,710
29-2032	Diagnostic Medical Sonographers	29,280	32,990	3,710	12.7%	43,760	48,010
29-9010	Occupational Health and Safety Specialists and Technicians	34,840	38,800	3,960	11.4%	41,590	46,190
29-2012	Medical and Clinical Laboratory Technicians	142,090	146,920	4,830	3.4%	28,430	30,200
29-2053	Psychiatric Technicians	54,560	59,750	5,190	9.5%	23,510	26,920
29-2052	Pharmacy Technicians	196,430	207,140	10,710	5.5%	20,050	22,510
Insurance / Sales Occupation Group							
43-9041	Insurance Claims and Policy Processing Clerks	268,650	258,100	-10,550	-3.9%	32,000	30,730
13-2053	Insurance Underwriters	93,970	92,780	-1,190	-1.3%	44,940	48,770
41-3021	Insurance Sales Agents	241,730	269,000	27,270	11.3%	47,690	48,570
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	341,930	370,330	28,400	8.3%	52,140	60,520
13-1031	Claims Adjusters, Examiners, and Investigators	154,770	200,510	45,740	29.6%	41,960	45,350
Production and R&D Occupation Group							
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	40,470	36,420	-4,050	-10.0%	53,680	59,090
51-9081	Dental Laboratory Technicians	42,940	39,750	-3,190	-7.4%	29,240	30,550
51-9082	Medical Appliance Technicians	13,610	12,410	-1,200	-8.8%	27,080	29,010
51-9083	Ophthalmic Laboratory Technicians	34,590	34,490	-100	-0.3%	21,680	22,610
17-2031	Biomedical Engineers	6,450	6,960	510	7.9%	52,430	63,330
19-1041	Epidemiologists	2,270	3,970	1,700	74.9%	49,020	55,590
49-9062	Medical Equipment Repairers	19,640	22,070	2,430	12.4%	35,390	37,570
19-2041	Environmental Scientists and Specialists, Including Health	53,610	57,430	3,820	7.1%	47,000	50,700
19-4021	Biological Technicians	39,580	43,560	3,980	10.1%	32,060	34,030
19-1021	Biochemists and Biophysicists	11,810	16,130	4,320	36.6%	56,170	61,680
19-1042	Medical Scientists, Except Epidemiologists	21,200	46,430	25,230	119.0%	55,880	62,650
Educators/Counselors Occupation Group							
25-1072	Nursing Instructors and Teachers, Postsecondary	35,360	34,390	-970	-2.7%	47,830	51,290
25-1042	Biological Science Teachers, Postsecondary	33,790	38,580	4,790	14.2%	54,930	64,410
25-1071	Health Specialties Teachers, Postsecondary	72,130	85,220	13,090	18.1%	66,470	66,850

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