



# Massachusetts Healthcare Chartbook

Executive Office of Labor and Workforce Development  
Commonwealth Corporation

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## Contributors

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## Acknowledgements

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## Introduction

As the largest and fastest growing sector in Massachusetts, *healthcare and social assistance* is a major driver of economic growth for the state. The purpose of this chartbook is to provide background information and analysis for workforce development professionals and practitioners in Massachusetts as they focus on addressing the workforce needs of the *healthcare* sector.

In 2005, the *healthcare and social assistance* industry was the largest employer in Massachusetts. Employing nearly 15% of the total workforce, healthcare employs 50% more workers than either *manufacturing* or *education* and 25% more than *retail*. It also gained jobs during the recessionary period of 2001–2003 and was a driver of the recovery that followed it, 2003–2005.

This industry employs a large array of occupations. About half of all jobs in the *healthcare* sector are comprised of “healthcare related” jobs, whether professional (requiring a college education) or healthcare support workers (requiring a certificate or completion of a job training program). Non-healthcare workers such as administrative workers, daycare teachers, social service workers, and food preparation workers account for the rest.

The *healthcare* sector not only employs non-healthcare related workers, but workers in non-healthcare industries. While 80% of healthcare practitioners and healthcare support workers work in the *healthcare* sector, about 20% work in other parts of the economy such as pharmacists in the *retail* sector, emergency medical technologists working for cities and towns, or RNs working in the *insurance* or *education* industries.

Statewide, in 2006, the *healthcare and social assistance* sector accounted for more than 20% of all vacancies with a vacancy rate of 4.4%, both the highest number and rate of any industrial sector. Healthcare practitioner positions comprise about half the total number of healthcare industry vacancies and have a vacancy rate of 4.8%, again, the highest in the state.



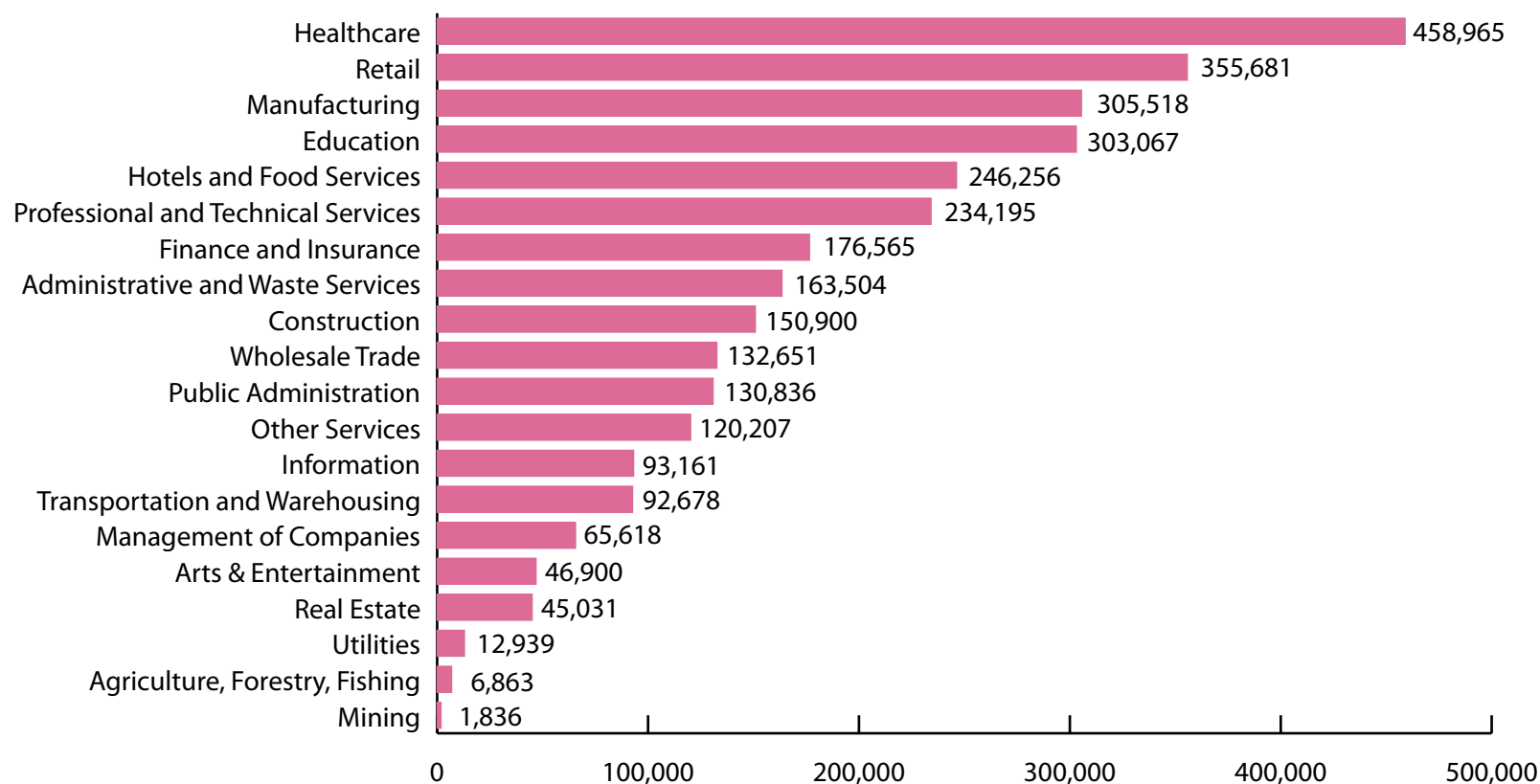
## Chart 1

### Number of Massachusetts Workers Employed by Sector, 2005

The *Healthcare and social assistance* sector has been a major employer in Massachusetts since well before 1990. With the decline of manufacturing, it gradually increased its share of overall employment to become the state's largest employer in 1995.

In 2005, *healthcare and social assistance* in Massachusetts employed 458,965 workers or 15% of the total workforce of 3,159,049. *Healthcare* employs 25% more workers than the *retail* sector (355,681) and 50% more workers than either the *manufacturing* (305,518) or *education* (303,067) sectors.

#### 2005 Employment



Source: U.S. Bureau of Labor Statistics  
Quarterly Census of Employment & Wages

## Chart 2

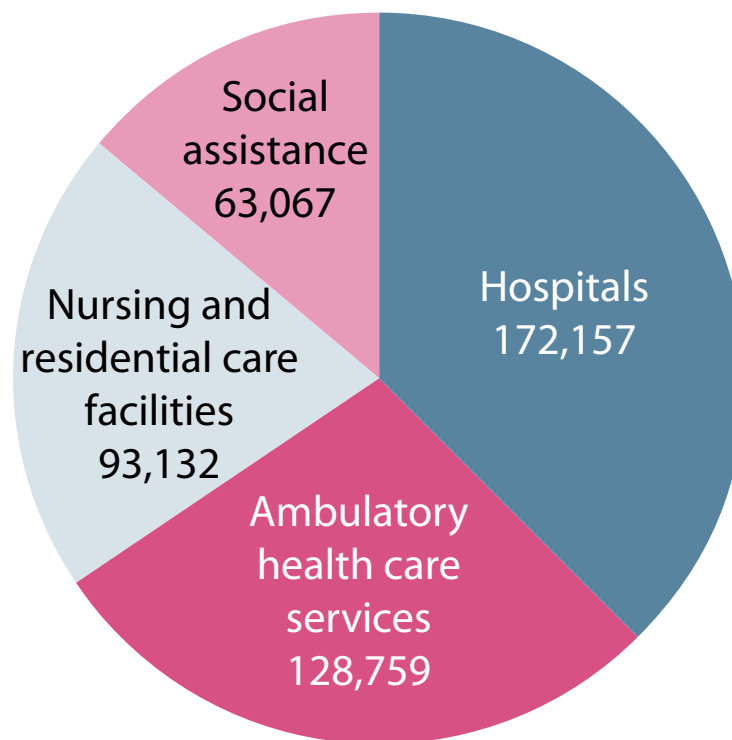
### Proportion of Total Massachusetts Workforce Employed by Healthcare Sub-Sector, 2005

The *healthcare and social assistance* sector comprises four sub-sectors:

- Hospitals, the largest sub-sector, employs 172,157 people and slightly more than 5% of the state's total workforce. This is roughly the same as the number of jobs in the *finance* sector (176,565).
- Ambulatory services, which includes physicians' offices, accounts for 128,759 jobs and 4% of all jobs in the state.
- Nursing and residential care provides an additional 93,132 jobs, 3% of the total workforce.
- Social assistance is the smallest sub-sector, employing 63,067 workers and 2% of the total Massachusetts workforce.

Although there was a 29% increase in the employment of the sector between 1990 and 2005, the structure of the *healthcare and social assistance* sector, i.e., the proportion of total sector employment in each of the sub-sectors, has remained virtually unchanged. There has been only a slight increase in the proportion of ambulatory care employment and a decrease in hospital employment.

### 2005 Sub-Sector Employment



Source: U.S. Bureau of Labor Statistics  
Quarterly Census of Employment & Wages



## Chart 3

### *What is Included in the Healthcare and Social Assistance Sector?*

In addition to what we traditionally know of as *healthcare* (hospitals, doctors' offices, etc.), this sector includes nursing/residential care, and a range of social services including child daycare services.

The ambulatory care sub-sector includes organizations that provide outpatient services: doctors' and dentists' offices, outpatient centers including mental health clinics, medical and diagnostic laboratories, home healthcare services, and ambulance companies.

Hospitals provide medical, diagnostic, and treatment services to inpatients or outpatients requiring specialized services. This sub-sector includes large general hospitals, small community hospitals,

and specialized hospitals that provide services for specific medical conditions or populations.

Nursing and residential care facilities provide residential care combined with either nursing, supervisory, or other types of care, including to the elderly, mentally ill, those with substance use problems, or those requiring rehabilitative care.

The social assistance sub-sector provides an array of social services directly to clients, and includes shelters, child daycare, individual and family services and vocational rehabilitation.

| Ambulatory Care<br>(Outpatient Care)   |  | Hospitals<br>(Inpatient Care)  |   |
|--|--|--|---|
| <ul style="list-style-type: none"> <li>• Doctors' Offices</li> <li>• Dentists' Offices</li> <li>• Home Care Services</li> <li>• Outpatient Care Centers</li> </ul> | <ul style="list-style-type: none"> <li>• Other Health Practitioners</li> <li>• Other Ambulatory Care Services</li> <li>• Medical Laboratories</li> </ul> | <ul style="list-style-type: none"> <li>• General Hospitals</li> <li>• Other Hospitals</li> </ul>   | <ul style="list-style-type: none"> <li>• Psychiatric Hospitals</li> </ul>               |
| Nursing and Residential Care Facilities<br>(Inpatient Care for the Elderly and Others)   |  | Social Assistance<br>(Social Services)   |   |
| <ul style="list-style-type: none"> <li>• Nursing Homes</li> <li>• Residential Mental Health Facilities</li> </ul>  | <ul style="list-style-type: none"> <li>• Community Residential Care Facilities</li> <li>• Other Residential Care Facilities</li> </ul>                   | <ul style="list-style-type: none"> <li>• Individual and Family Services</li> <li>• Child Daycare Services</li> <li>• Vocational Rehabilitation Services</li> </ul> | <ul style="list-style-type: none"> <li>• Emergency and Other Relief Services</li> </ul> |

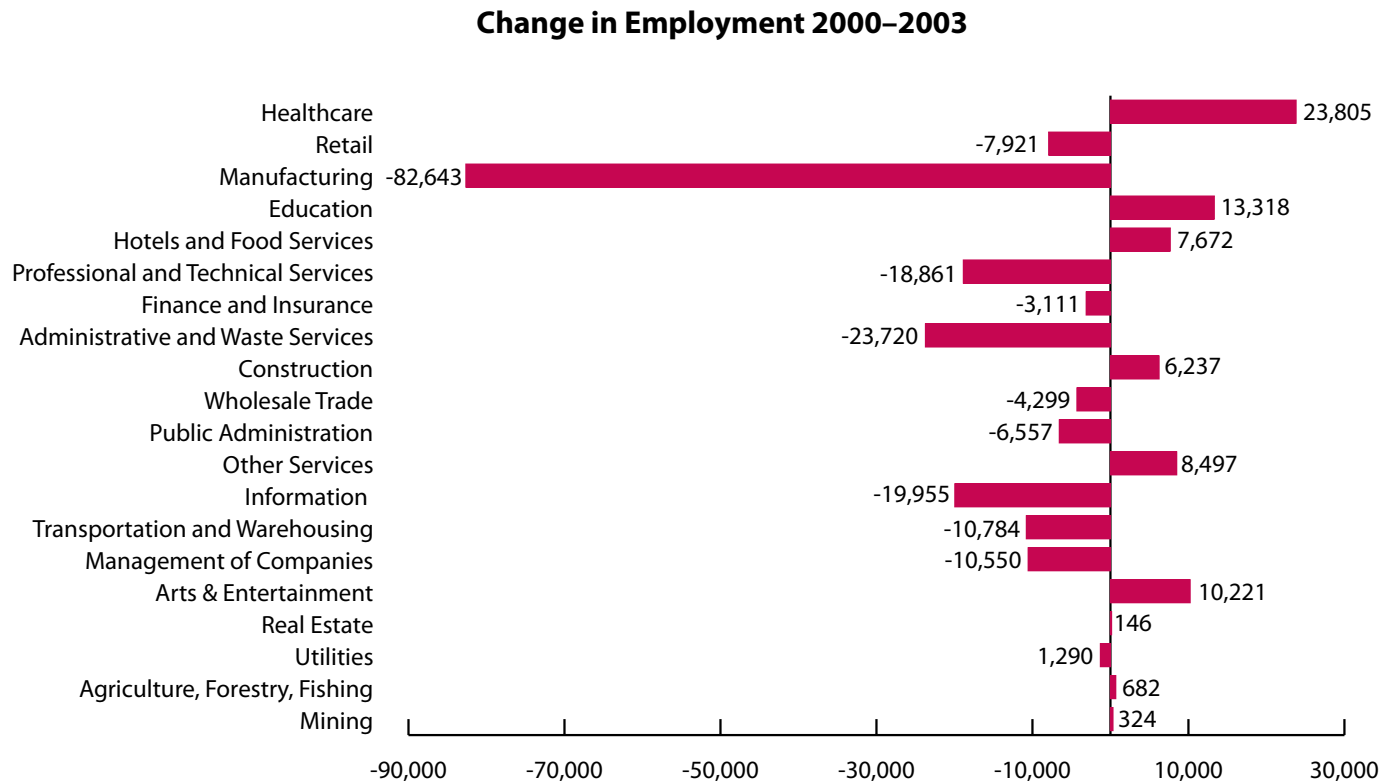
Source: U.S. Bureau of Labor Statistics  
Quarterly Census of Employment & Wages

## Chart 4

### Change in Massachusetts Employment by Sector During Recent Recession, 2000–2003

Massachusetts suffered a recession from December of 2000 until March of 2003.<sup>1</sup> The *healthcare and social assistance* sector added 23,805 new jobs from 2000 to 2003, more than any other sector. The job growth occurred despite the economy being in recession during this period. More than half of the sector's employment growth can be attributed to general hospitals.

In contrast, during the same period, Massachusetts lost 125,510 net jobs. The majority of sectors lost jobs, with *manufacturing*, Massachusetts' third largest sector, leading the group with a loss of 82,643 jobs. Employment in *retail*, the second biggest sector, declined by 7,921 jobs. Job gains also occurred in *education*, *arts and entertainment*, and *hotels and food services* sectors, all of which expanded employment.



Source: Massachusetts Department of Workforce Development  
Quarterly Census of Employment & Wages

1. Massachusetts Benchmarks, UMass Amherst Donahue Institute

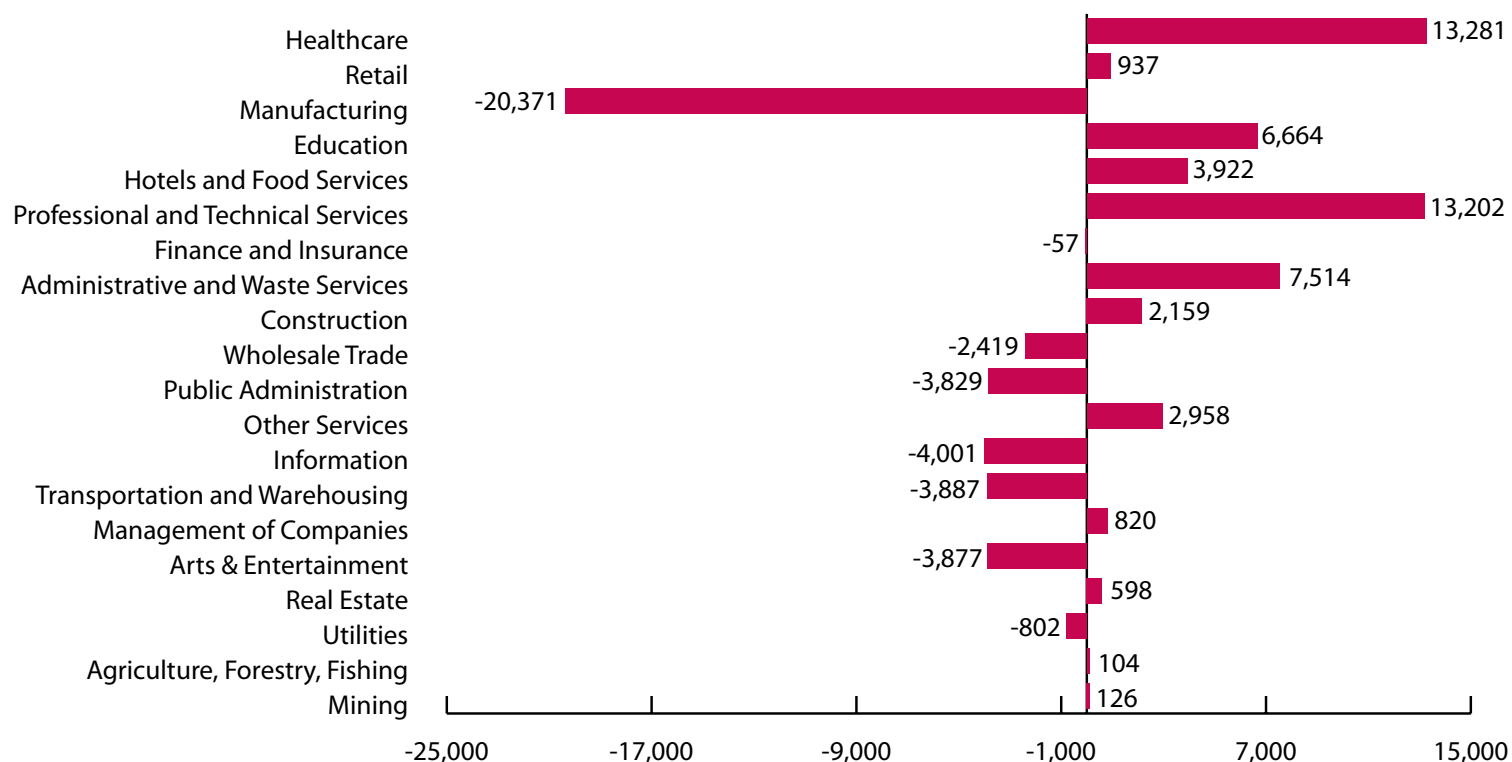
## Chart 5

### Change in Massachusetts Employment by Sector During Recovery, 2003–2005

The *healthcare and social assistance* sector added more jobs (13,281) than any other sector during the three calendar years of 2003–2005. This recovery period followed the 28-month recession, which started in December of 2000. Without the job growth that occurred in the *healthcare and social assistance* sector, the sum total of employment change from 2003–2005 in all other sectors

combined would have been slightly negative, or a loss of 239 jobs. The one other sector to see such robust employment growth was the *professional and technical services* sector, which added 13,202 jobs. The *manufacturing* sector lost over 20,000 jobs (20,371) from 2003–2005.

**Change in Employment 2003–2005**

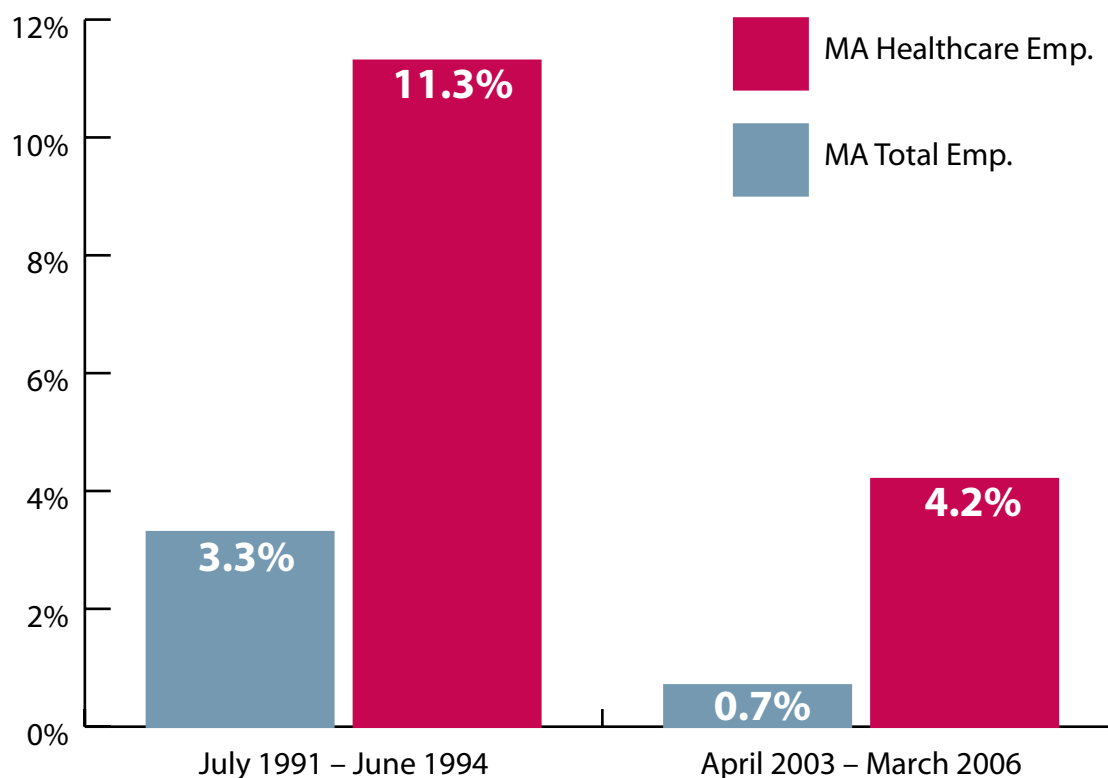


Source: Massachusetts Department of Workforce Development  
Quarterly Census of Employment & Wages

## Chart 6

### Massachusetts Employment Growth in Healthcare and Social Assistance during the Post-Recession Recovery Periods of July 1991–June 1994 and April 2003–March 2006

In the three-year recovery period from July 1991 to June 1994, Massachusetts' *healthcare and social assistance* employment grew more than three times faster than total employment. In the period from April 2003 to March 2006, this disparity was even greater, with *healthcare and social assistance* employment growing at six times the rate of total employment in Massachusetts.



Source: U.S. Bureau of Labor Statistics, Current Employment Survey

Note 1: Healthcare employment data relies on seasonally unadjusted data

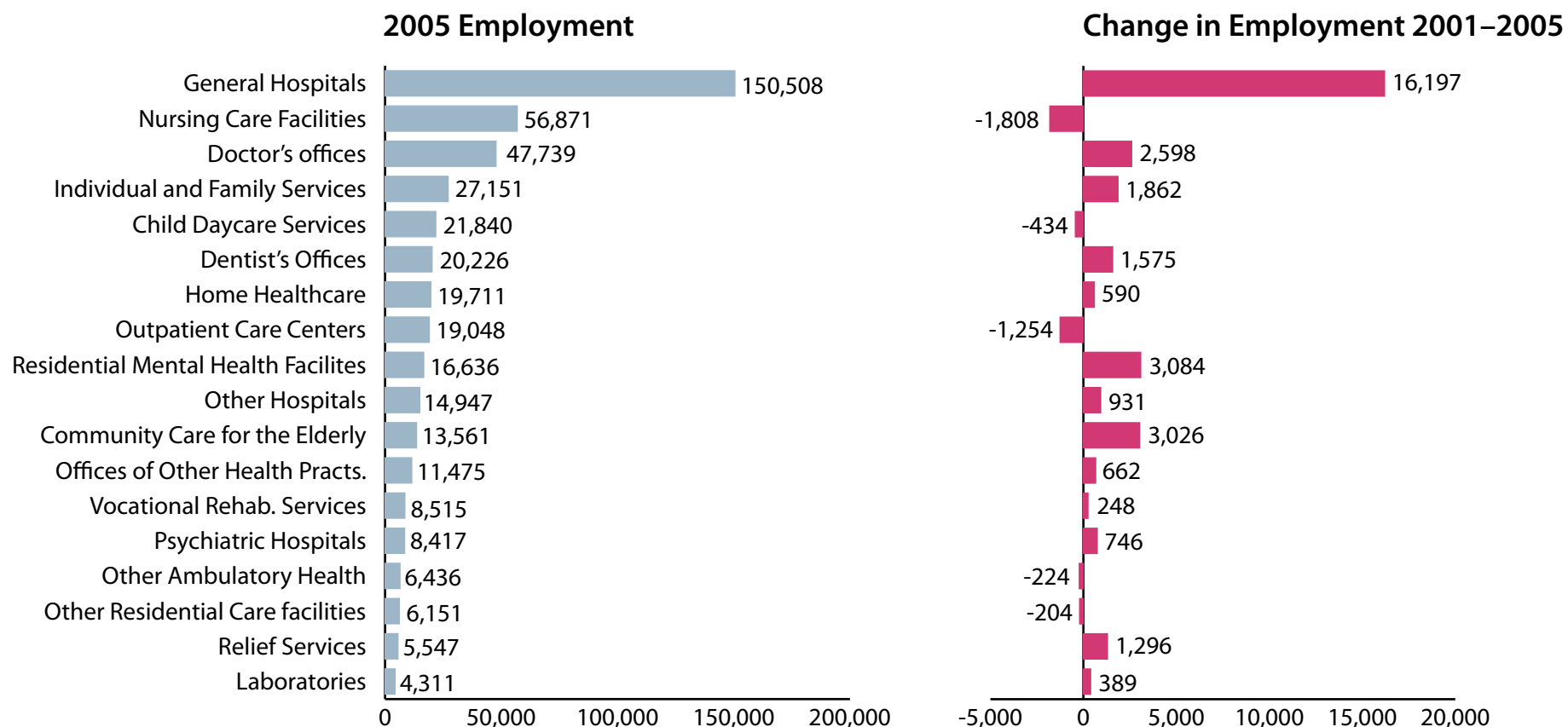
Note 2: Recessionary periods are based on Massachusetts Benchmarks data from the National Bureau of Economic Research.

## Chart 7

### Massachusetts Healthcare and Social Assistance Industry Group-Level Employment (2005) and Trends (2001–2005)

The largest industry groups by employment, in the *healthcare and social assistance* sector are general hospitals (150,508), nursing care facilities (56,871), and doctors' offices (47,739). These three account for 55% of the entire *healthcare and social assistance* sector and combined have created nearly 17,000 jobs since 2001, more

than half the jobs created in the sector as a whole. General hospitals alone employ slightly less than one third of all workers in the *healthcare and social assistance* sector.

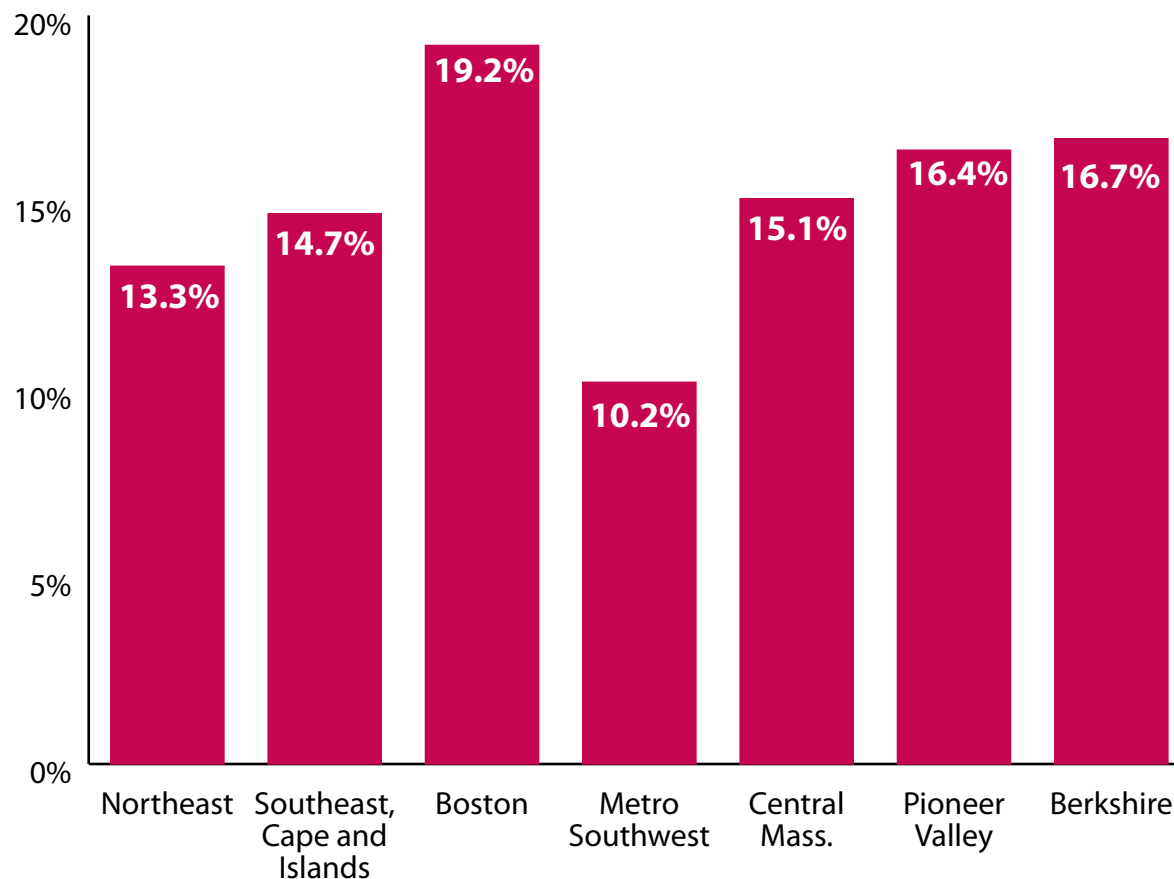


Source: Massachusetts Department of Workforce Development  
Quarterly Census of Employment & Wages

## Chart 8

### *Healthcare and Social Assistance Employment as a Share of Total Regional Employment, 2005*

The next five charts list the regions in order of largest to smallest number of total jobs with Northeast being the largest and Berkshire being the smallest. The *healthcare and social assistance* sector provides 15% of all the state's jobs. Across all the eight regions, the sector accounts for at least 10% of regional employment. Healthcare and social assistance employment is highest in Boston, with 19.2% of all jobs in the sector, and lowest in Metro Southwest, with 10.2% of all jobs in the sector. Healthcare is one of the three largest sectors in every region except Metro Southwest, where it is the fourth largest.



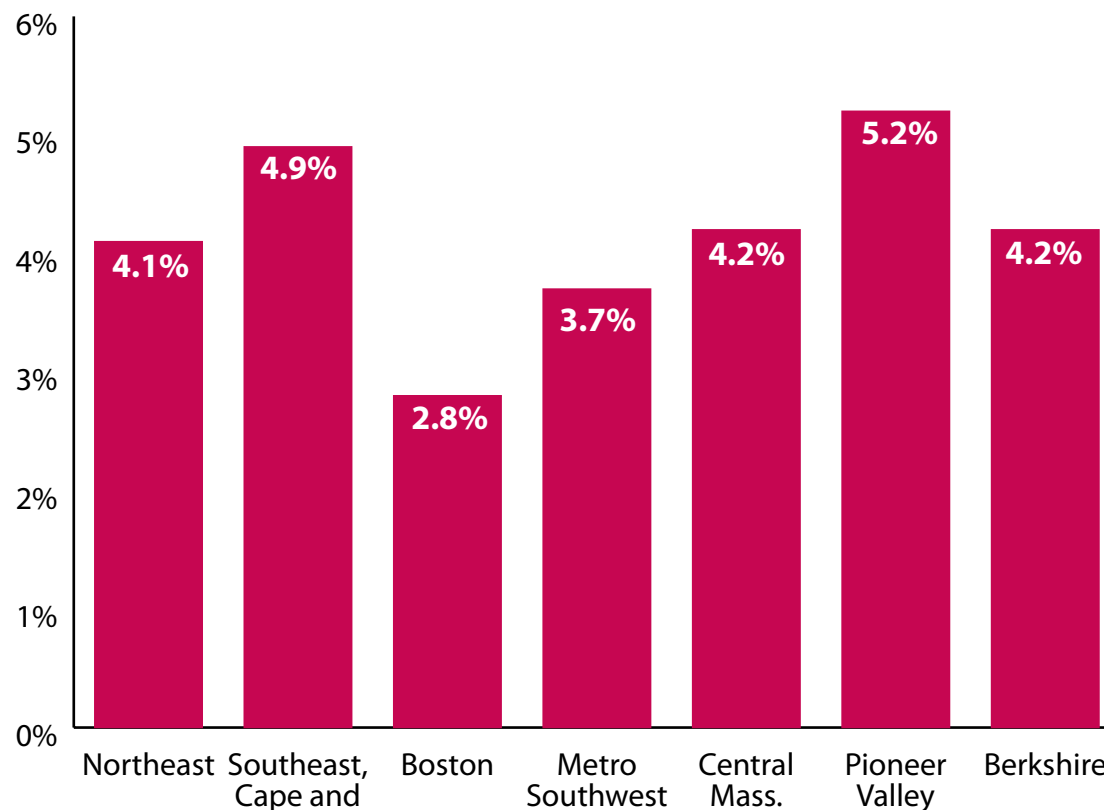
Source: Massachusetts Department of Workforce Development  
Quarterly Census of Employment & Wages

Regional definitions are in the Appendix on page 35.

## Chart 9

### *Regional Employment in Ambulatory Care as a Share of Total Regional Employment, 2005*

Across the state, 4% of employment is in ambulatory care. This varies only slightly by region, with ambulatory care employment comprising 2.8% of the total employment in Boston and 5.2% in the Pioneer Valley and South East and Cape regions. It is possible that the low rate of ambulatory care employment in Boston could be a result of hospitals and hospital-owned facilities in Boston providing outpatient care.



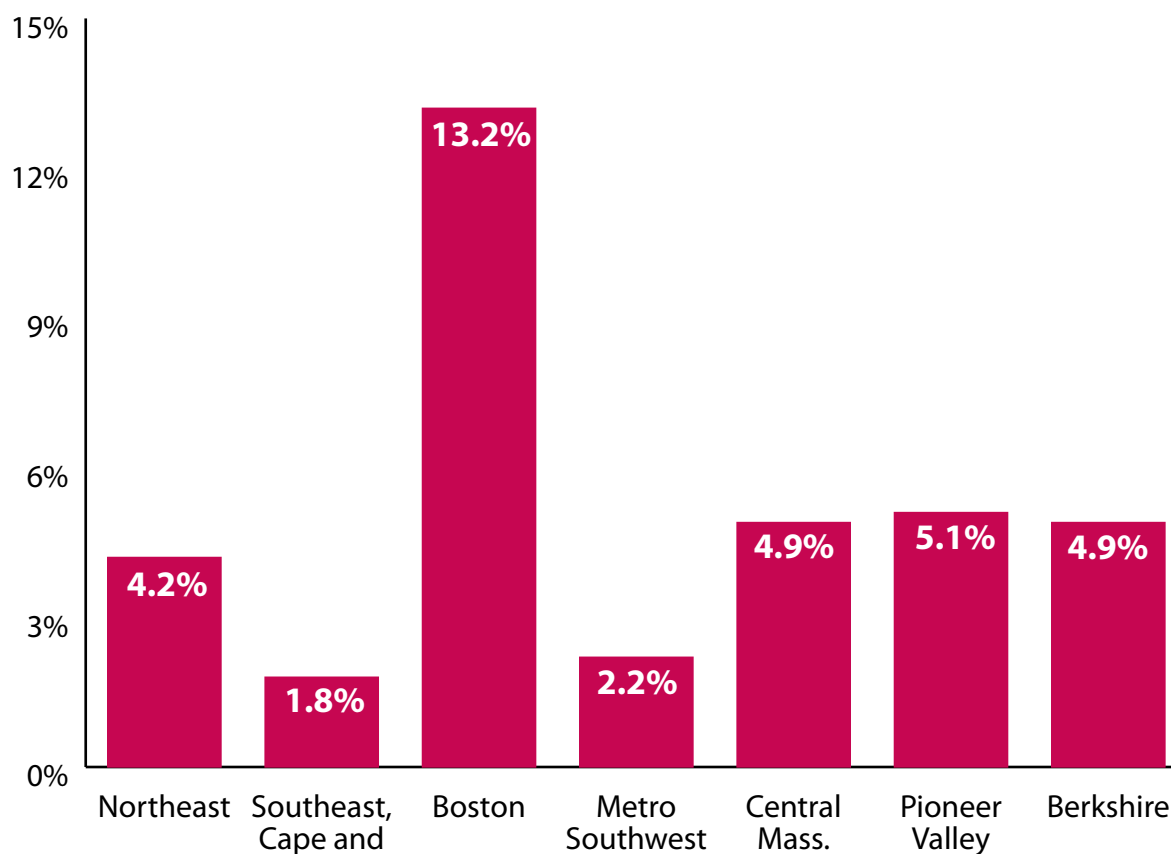
Source: Massachusetts Department of Workforce Development  
Quarterly Census of Employment & Wages

Regional definitions are in the Appendix on page 35.

## Chart 10

### *Regional Employment in Hospitals as a Share of Total Regional Employment, 2005*

There is wide regional variation in hospital employment across Massachusetts' eight regions. In Boston, 13.2% of total employment is in hospitals, nearly three times that of any other region. This is due to the concentration of teaching and research hospitals in Boston. Case in point: Massachusetts General Hospital and Brigham and Women's Hospital alone employ over 30,000 people.<sup>2</sup>



2. Massachusetts General Hospital and Brigham and Women's Hospital

Source: Massachusetts Department of Workforce Development  
Quarterly Census of Employment & Wages

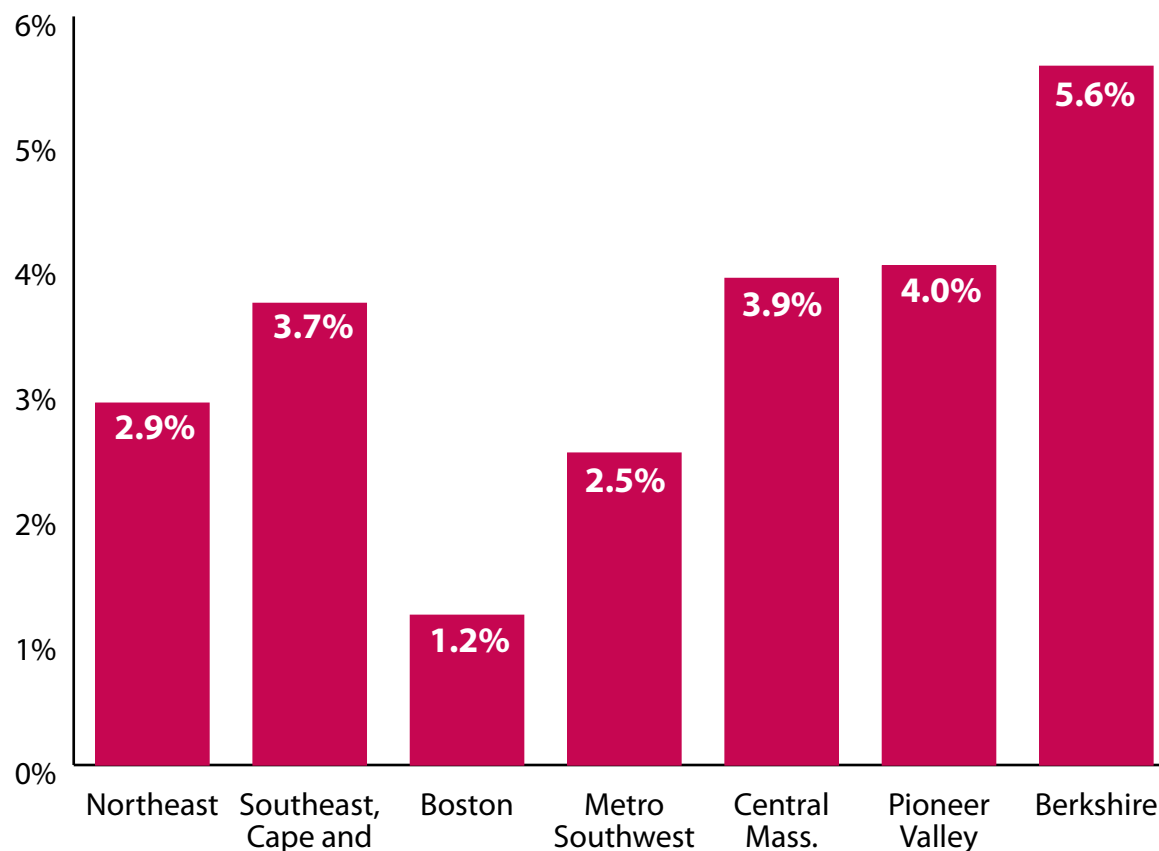
Regional definitions are in the Appendix on page 35.



## Chart 11

### *Regional Employment in Nursing and Residential Care Facilities as a Share of Total Regional Employment, 2005*

Compared to the other regions, Boston has a much lower percentage of its total employment in the nursing home and residential care sub-sector. Also note that the percent of employment in nursing home and residential care facilities increases with distance from Boston.



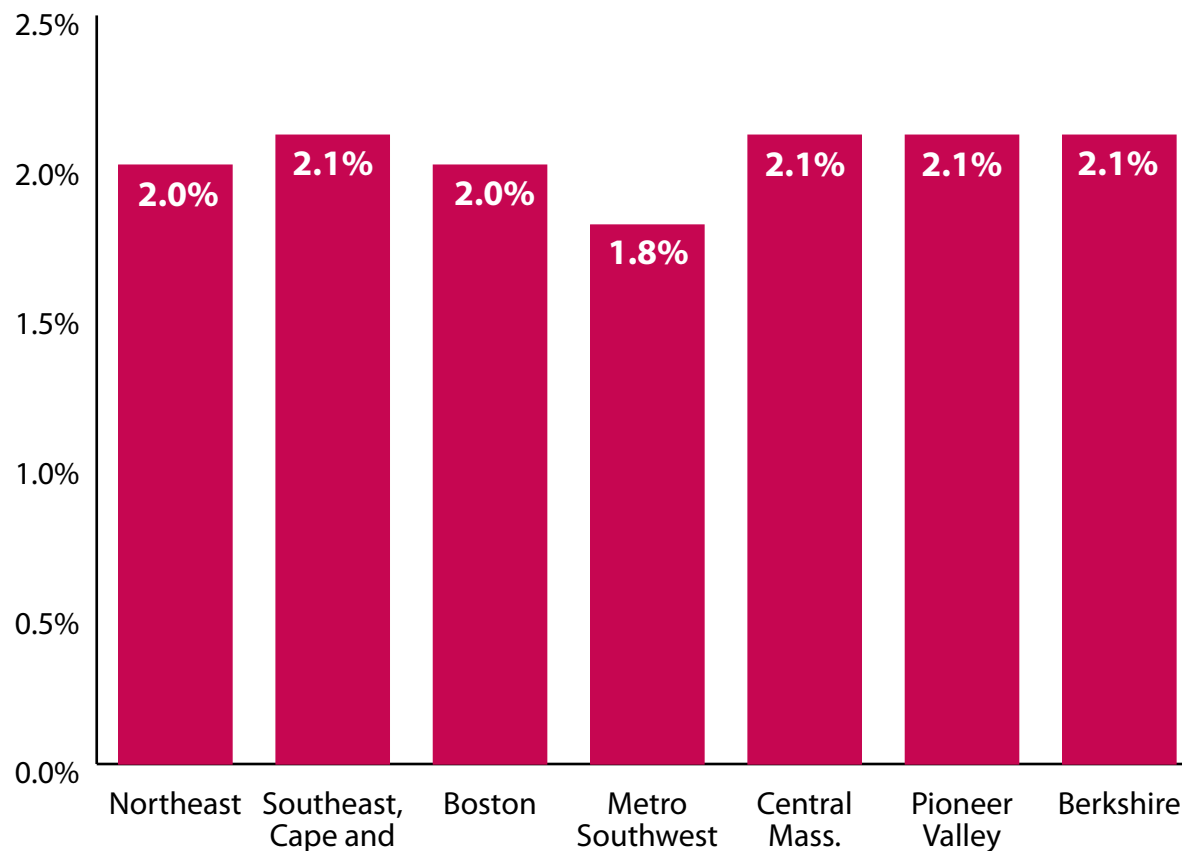
Source: Massachusetts Department of Workforce Development  
Quarterly Census of Employment & Wages

Regional definitions are in the Appendix on page 35.

## Chart 12

### *Regional Employment in Social Assistance as a Share of Total Regional Employment, 2005*

Across all regions, there is a similar proportion of total employment in the social assistance sub-sector, with a slightly smaller proportion of total employment attributable to social assistance in the Metro Southwest region.



Source: Massachusetts Department of Workforce Development  
Quarterly Census of Employment & Wages

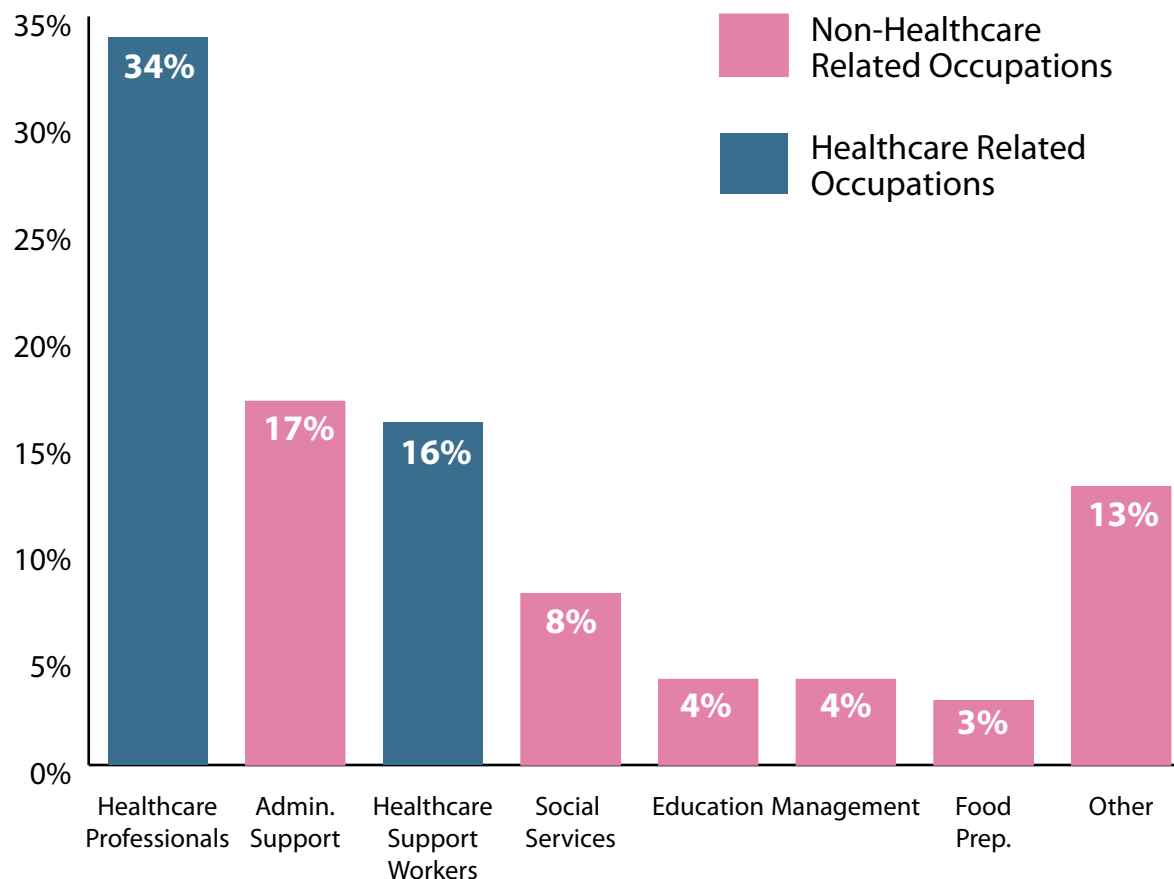
Regional definitions are in the Appendix on page 35.

## Chart 13

### *Percentage of Total Employees of the Massachusetts Healthcare and Social Assistance Sector by Type of Work and Classification as Healthcare or Non-Healthcare Related Occupation, 2005*

The *healthcare and social assistance* sector employs many different types of workers in many different capacities. About half of the people who work in the sector perform healthcare jobs or belong to “healthcare occupations,” whether professional (requiring at least an associate’s degree) or healthcare support workers (requiring a certificate or completion of a job-training program). Healthcare professionals include registered nurses (RN), licensed practical nurses (LPN), physicians, surgeons, diagnostic medical sonographers and respiratory therapists while the healthcare support worker group comprises occupations such as certified nurses’ assistants (CNA), home health aides, medical assistants, and dental assistants.

The other half of the healthcare industry is comprised of non-healthcare occupations, such as administrative workers, managers, daycare teachers, social service workers, and food preparation workers.



Source: Massachusetts Department of Workforce Development  
Occupational Employment and Wage Industry Staffing Patterns, May 2005

Note: Occupations are listed if they comprise over 3% of the industry; otherwise they are placed within the “other” category.

## Chart 14

### *Share (%) of Employees from Major Occupational Groups Working in Healthcare and Share (%) of Healthcare Occupations Working in Other Sectors in Massachusetts, 2005*

The left column is where people work (the industry sector); the top row is what people do (the major occupation). For example, 14% of all administrative workers, 11% of all buildings and grounds workers, such as janitors, maids, etc, and 9% of all physical scientists, such as researchers work in the *healthcare and social assistance* sector. Sixty percent of community and social service workers are employed in the *healthcare and social assistance* sector.

Healthcare workers also work outside the sector in such roles as:

- Pharmacists or pharmacist technicians in *retail*;
- Teaching faculty in *education*;
- Policy makers or emergency responders in *government*.

| Industry                   | All Occupations | Management | Business Financial | Life, Physical, Social Sciences | Community Social Services | Education | Healthcare Professionals | Healthcare Support Workers | Building Grounds | Food Preparation | Office and Administrative |
|----------------------------|-----------------|------------|--------------------|---------------------------------|---------------------------|-----------|--------------------------|----------------------------|------------------|------------------|---------------------------|
| Healthcare                 | 14%             | 9%         | 4%                 | 9%                              | 60%                       | 9%        | 79%                      | 81%                        | 11%              | 6%               | 14%                       |
| Retail                     |                 |            |                    |                                 |                           |           | 5%                       | 1%                         |                  |                  |                           |
| Education                  |                 |            |                    |                                 |                           |           | 5%                       | 2%                         |                  |                  |                           |
| Government                 |                 |            |                    |                                 |                           |           | 4%                       | 8%                         |                  |                  |                           |
| Administrative Services    |                 |            |                    |                                 |                           |           | 2%                       | 4%                         |                  |                  |                           |
| Professional Tech Services |                 |            |                    |                                 |                           |           | 3%                       | 2%                         |                  |                  |                           |
| Total                      |                 |            |                    |                                 |                           |           | 100%                     | 100%                       |                  |                  |                           |

Source: Massachusetts Department of Workforce Development  
Occupational Employment and Wage Industry Staffing Patterns, May 2005

## Chart 15

### *Median Salary for Healthcare Occupational Groups in Massachusetts, 2006*

Healthcare professionals in Massachusetts earn a median salary of \$60,320, while support workers earn a median salary of \$27,480. The statewide median salary for all Massachusetts workers is \$37,350. Given the years and level of post-secondary education required for healthcare professionals, it is not surprising that they earn significantly more than the median income for the state as a whole, 161% of the state median salary. In contrast, healthcare support workers earn only 74% of the Massachusetts median salary.

Healthcare professionals and support workers earn more in Massachusetts than they do in other parts of the country. However, the

difference between Massachusetts' healthcare professional salaries and the state median salary is smaller than the difference between the national median healthcare professional salary and the national median salary (161% of Massachusetts median vs. 171% of national median). In other words, the comparative salary advantage for healthcare professionals is smaller in Massachusetts than in other parts of the country. This discrepancy does not exist for healthcare support workers who earn 74% of the median salary in Massachusetts and 75% of the median salary nationwide.

|                            | Massachusetts |         | United States |         | $\frac{\text{MA}}{\text{US}}$ |
|----------------------------|---------------|---------|---------------|---------|-------------------------------|
|                            | Median Salary | % of MA | Median Salary | % of US |                               |
| All Occupations            | \$37,350      | 100%    | \$30,400      | 100%    | 123%                          |
| Healthcare Professionals   | \$60,320      | 161%    | \$51,980      | 171%    | 116%                          |
| Healthcare Support Workers | \$27,480      | 74%     | \$22,870      | 75%     | 120%                          |

Source: U.S. Bureau of Labor Statistics  
Occupational Employment Statistics

## Chart 16

### *Trends in Median Salary for Healthcare Occupational Groups in Massachusetts, 2001–2006*

From 2001 to 2006, Massachusetts' healthcare professionals' median salaries increased more than twice as fast as for all occupations. Healthcare support workers' salaries also rose faster than the median for all workers, but not as fast as healthcare professionals

working in occupations that require post-secondary degrees. The median salary for health professionals grew at an annualized rate of 6% per year while that of support workers increased by 4% per year.

|                            | 2001          |         | 2006          |         | % Increase |
|----------------------------|---------------|---------|---------------|---------|------------|
|                            | Median Salary | % of MA | Median Salary | % of MA |            |
| All Occupations            | \$32,210      | 100%    | \$37,350      | 100%    | 16%        |
| Healthcare Professionals   | \$45,250      | 140%    | \$60,320      | 161%    | 33%        |
| Healthcare Support Workers | \$22,590      | 70%     | \$27,480      | 74%     | 22%        |

Source: U.S. Bureau of Labor Statistics  
Occupational Employment Statistics

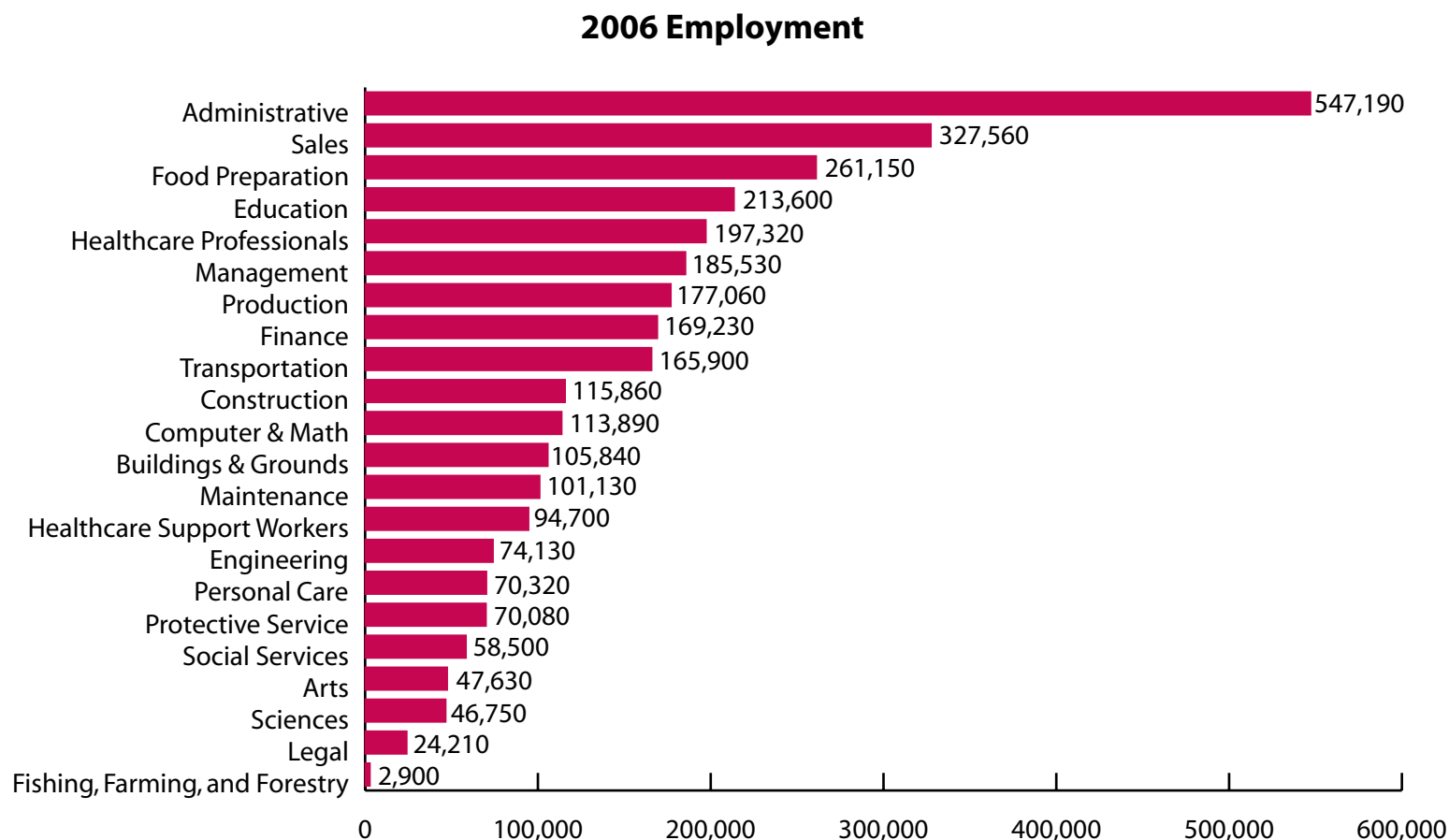
Note: These salary trends are useful only for general trend direction as it is not advisable to use Occupational Employment Statistics (OES) for time series analysis.

## Chart 17

### Employment in Massachusetts by Occupational Group, 2006

Despite the large size of the *healthcare* sector, workers employed in healthcare occupations comprise only 9% of total workers in Massachusetts. While the sector employs 15% of the statewide workforce, half the *healthcare* sector is employed in non-healthcare occupations and some healthcare workers are employed in other

sectors. Of the two healthcare-related occupations, healthcare professionals are the larger of the two groups accounting for 197,320 jobs (6% of Massachusetts workforce) while healthcare support workers account for 94,700 jobs (3% of the Massachusetts workforce).



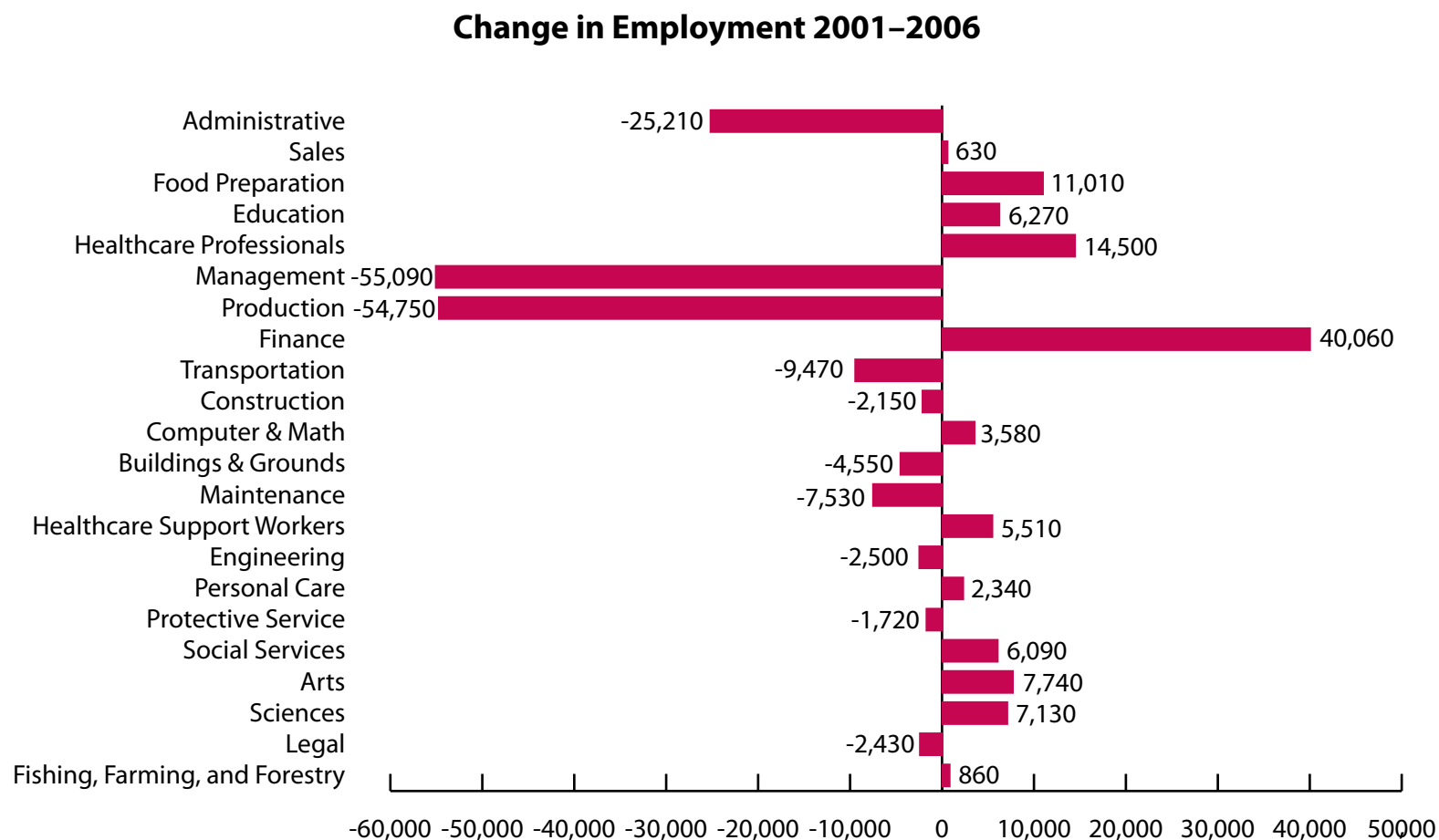
Source: U.S. Bureau of Labor Statistics  
Occupational Employment Statistics

## Chart 18

### *Occupational Employment Trends in Massachusetts, 2001–2006*

From 2001 to 2006, healthcare professionals increased by 6% or about 14,500 workers. Healthcare support workers increased by 1% or about 5,510 over the same period. As a whole, the growth in the number of healthcare professionals is second only to finance.

Employment in educational and social services occupations, which combined, make up half of the social assistance sub-sector, also increased between 2001 and 2006.



Source: U.S. Bureau of Labor Statistics  
Occupational Employment Statistics



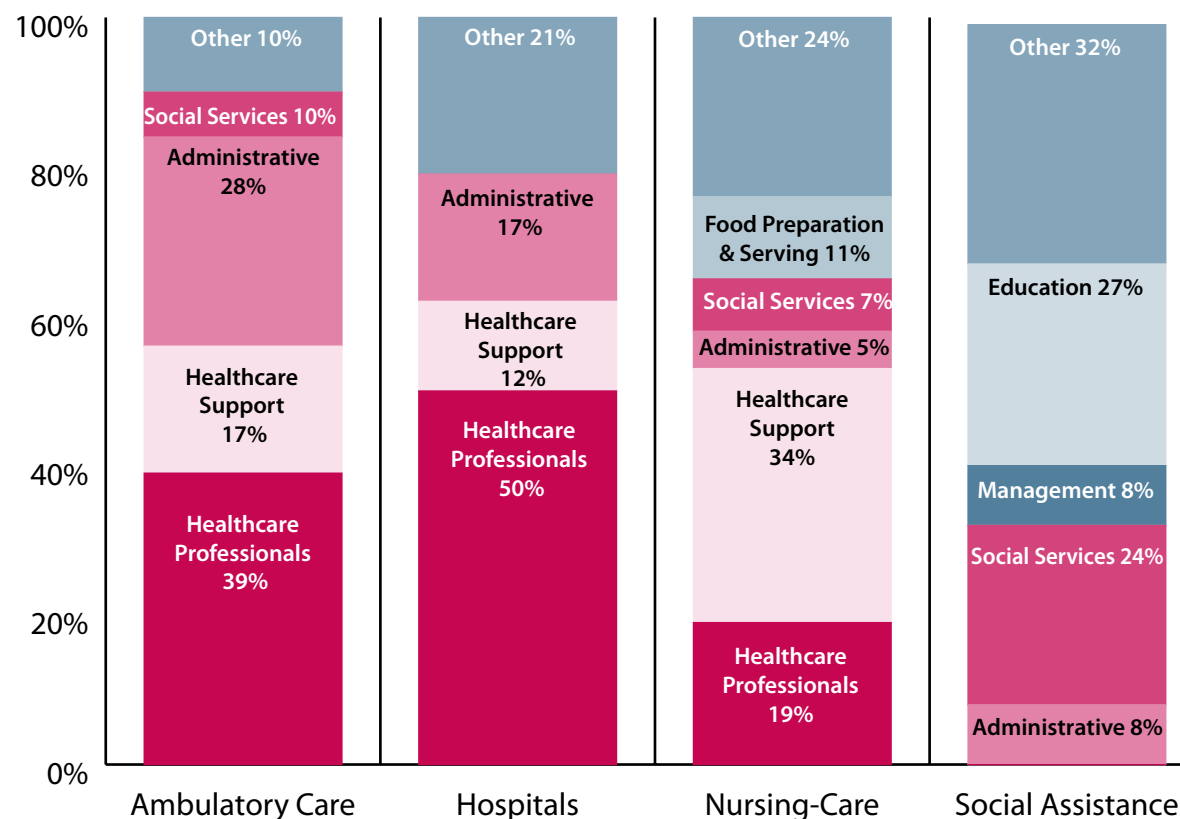
## Chart 19

### *Types of Work in Healthcare and Social Assistance Sub-Sectors in Massachusetts, 2005*

The three healthcare sub-sectors, excluding the social assistance sub-sector, have a high share of healthcare occupations (both healthcare professionals and healthcare support) employed: 56% in ambulatory care, 62% in hospitals, and 53% in nursing and resi-

dential care. The hospitals sub-sector has the highest percentage of employees working in a healthcare-related occupation. At the other extreme, only 3% of social assistance sub-sector employees are in a healthcare occupation. This is perhaps why many people do not

think of social assistance as part of the *health-care* sector. Workers in the social assistance and nursing and residential care sub-sectors perform many different kinds of jobs such as food preparation, child-care, and social service direct care.



Source: Massachusetts Department of Workforce Development  
Occupational Employment and Wage Industry Staffing Patterns, 2005

Note: Occupations are listed if they comprise over 5% of the industry; otherwise they are placed within the "other" category.

## Chart 20

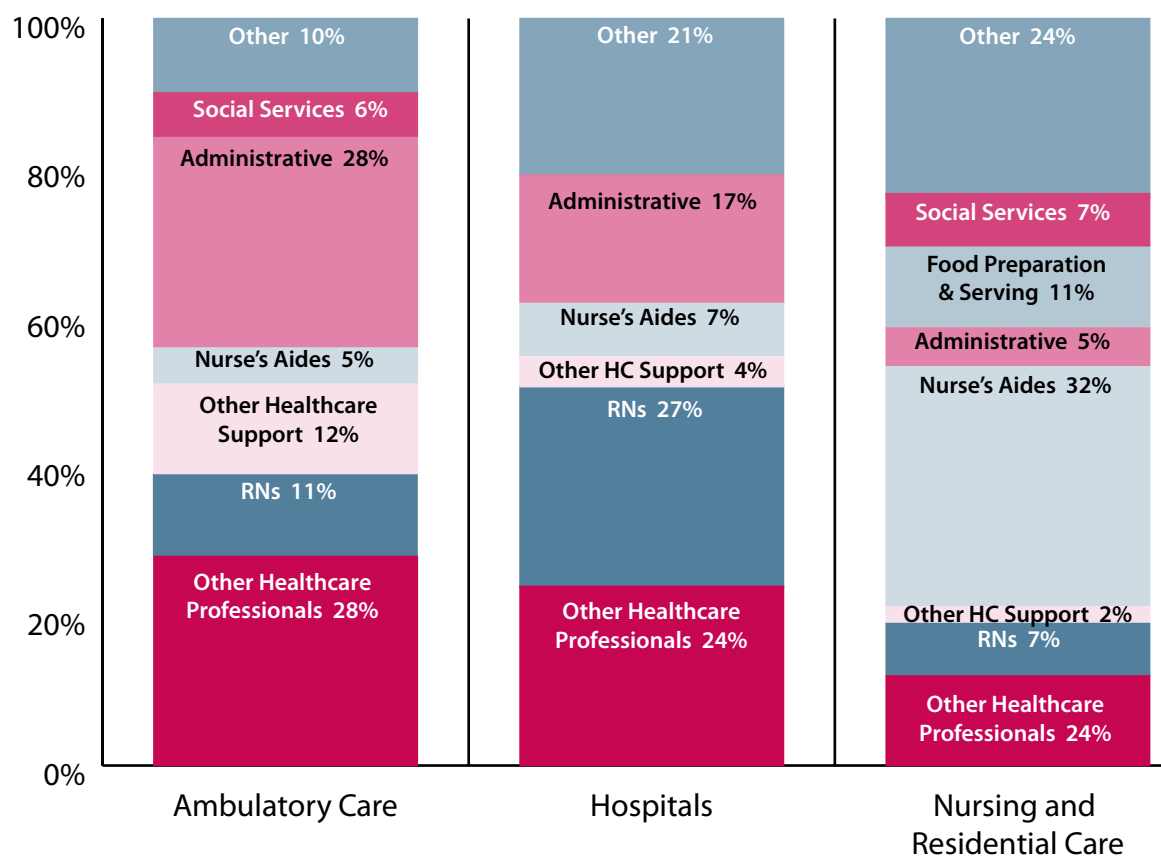
### *Distribution of Major Healthcare Occupations within Healthcare Sub-Sectors, 2005*

Three healthcare sub-sectors have a significant percentage of total staff in a healthcare-related occupation: 56% in ambulatory care, 62% in hospitals, and 53% in nursing and residential care. In these sub-sectors, registered nurses (RNs) and nurse's aides are the dominant occupations. RNs are the largest occupation in both ambulatory care and hospitals as well as the second largest in nursing and residential care, where nursing aide is the most common occupation. At least one in every four employees in hospitals is an RN (27%). In ambulatory care at least one in every ten employees is an RN (11%) and 7% of nursing and residential care employees are RNs.

Nearly one-third (32%) of the staff employed in the nursing and residential care sub-sector are nursing aides. In contrast, in both hospitals and ambulatory care settings, nursing aides account for about 5% and 7% respectively.

Physicians (not shown in chart) comprise 6% of the staff in ambulatory care facilities and less than 5% in the hospital and nursing care sub-sectors.

The occupational employment in each healthcare sub-sector in Massachusetts is similar to that of the rest of the U.S. healthcare industry.



Source: Massachusetts Department of Workforce Development  
Occupational Employment and Wage Industry Staffing Patterns, 2005

## Chart 21

### *Employment in the Largest Occupations (>2,000 workers) within the Healthcare Professional Occupation Group in Massachusetts, 2006*

Registered nurses (RNs) dominate all other occupations among healthcare professionals; there were 76,350 RNs employed in Massachusetts in 2006, more than four times the number of licensed practical nurses (LPNs). In fact, RNs are the second largest occupation in the state behind retail salespersons. Therapists, technologists, and technicians make up the lion's share of remaining profes-

sional healthcare jobs, with physicians and surgeons comprising only 8% of total employment in this occupational group. There were 2,390 dentists employed in Massachusetts in 2006. All professional healthcare occupations require at least some post-secondary education.



Source: U.S. Bureau of Labor Statistics  
Occupational Employment Statistics

Note: Occupations are listed if they employ over 2,000 individuals; otherwise they are placed in the "other healthcare professionals" category.

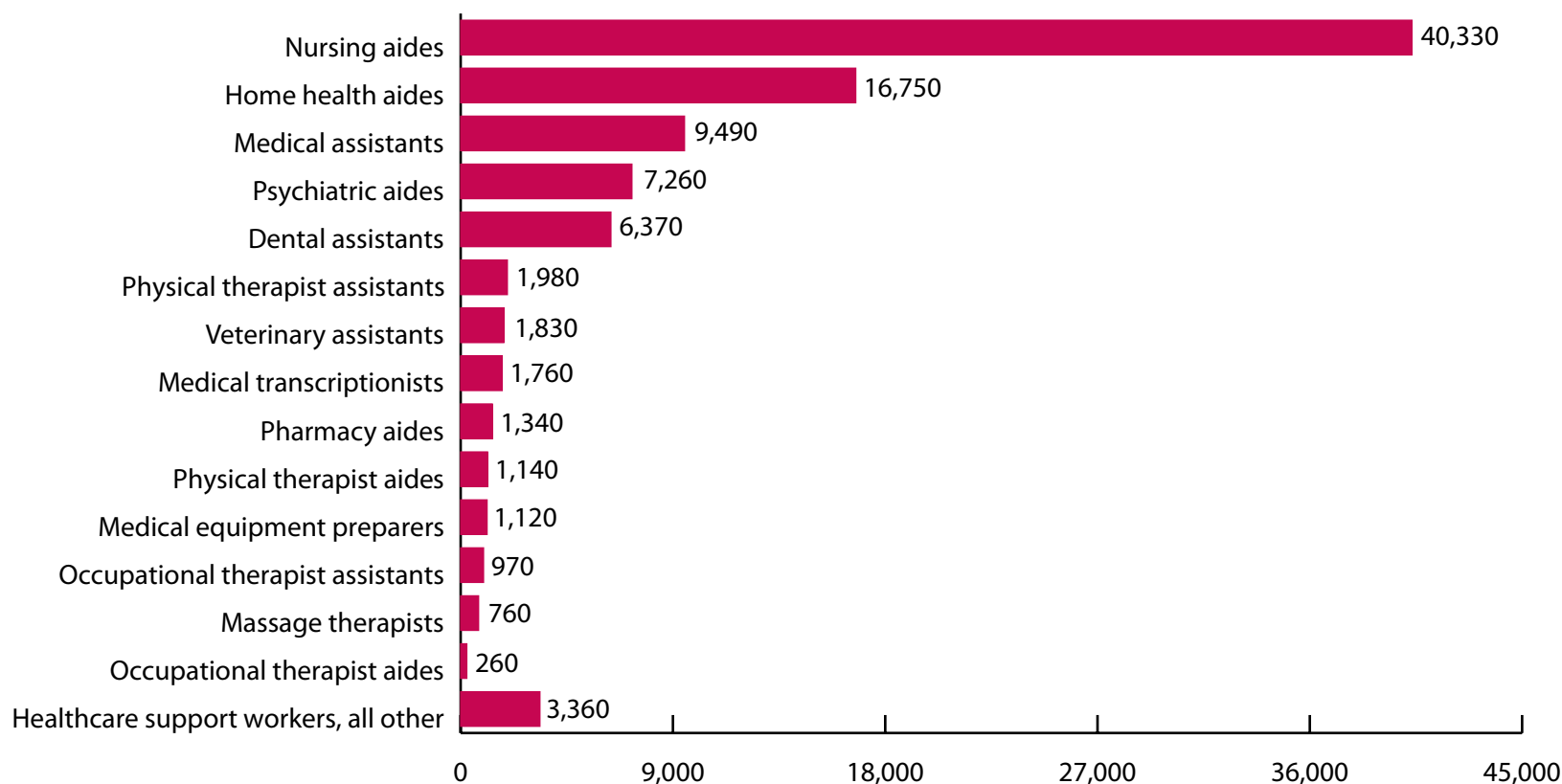
## Chart 22

### *Employment in Occupations within the Healthcare Support Occupation Group in Massachusetts, 2006*

Nursing aides, with 40,330 employed in 2006, comprise nearly half of all healthcare support workers. Home health aides, medical assistants, psychiatric aides, and dental assistants make up a large share of the support worker workforce. Smaller numbers of people work as medical transcriptionists, veterinary aides, and physical

therapy assistants, among other occupations. While these health-care support worker occupations do not require a college degree; a high school or its equivalency or additional occupational training and/or state certification or licensing are required.

#### 2006 Employment



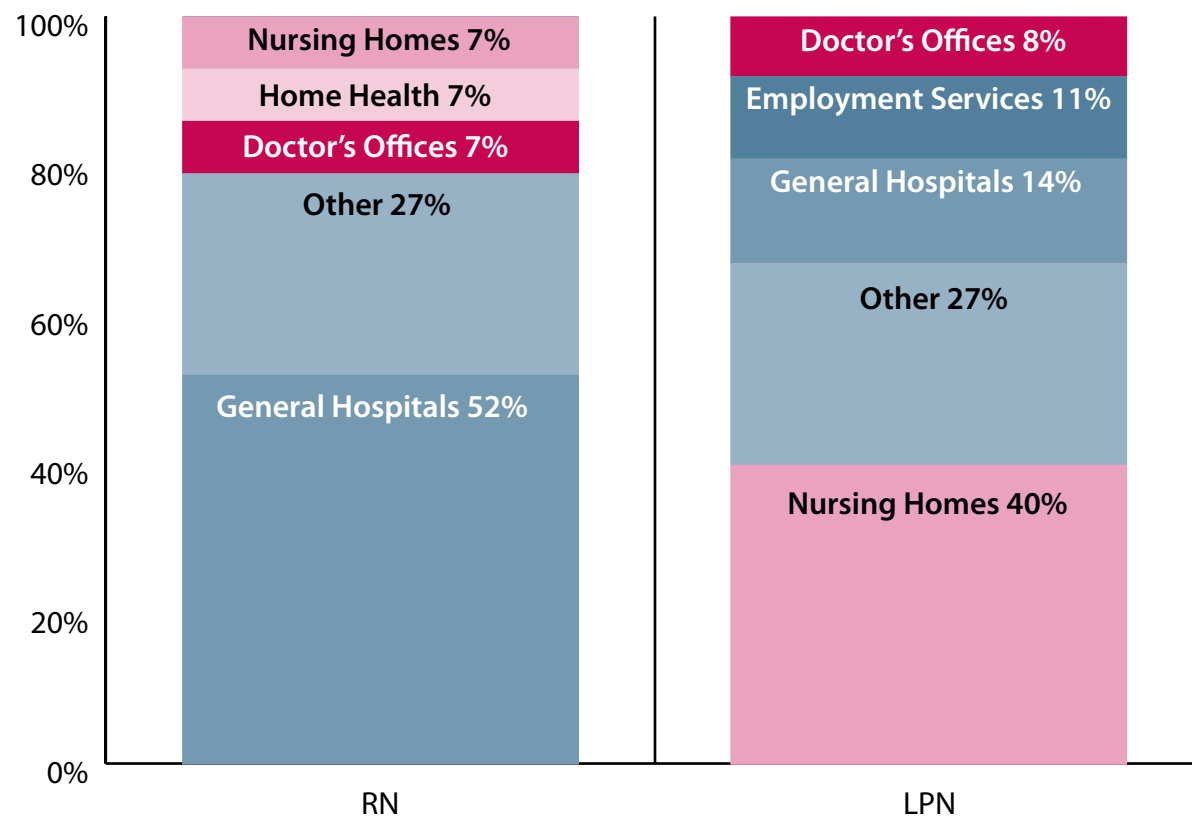
Source: U.S. Bureau of Labor Statistics  
Occupational Employment Statistics

## Chart 23

### *Massachusetts Employers of Registered Nurses and Licensed Practical Nurses, 2005*

The majority of registered nurses (RNs) (52%) work in general medical and surgical hospitals; another 21% are spread fairly evenly throughout nursing care facilities, doctors' offices, and other healthcare services.

In contrast to RNs, a significant percent of licensed practical nurses (LPNs) work in nursing homes. Hospitals are the second largest employer of LPNs, but a significant number of LPNs work as temporary nurses for staffing agencies (11%) or in doctor's offices (8%).



Source: Massachusetts Department of Workforce Development  
Occupational Employment and Wage Industry Staffing Patterns, May 2005

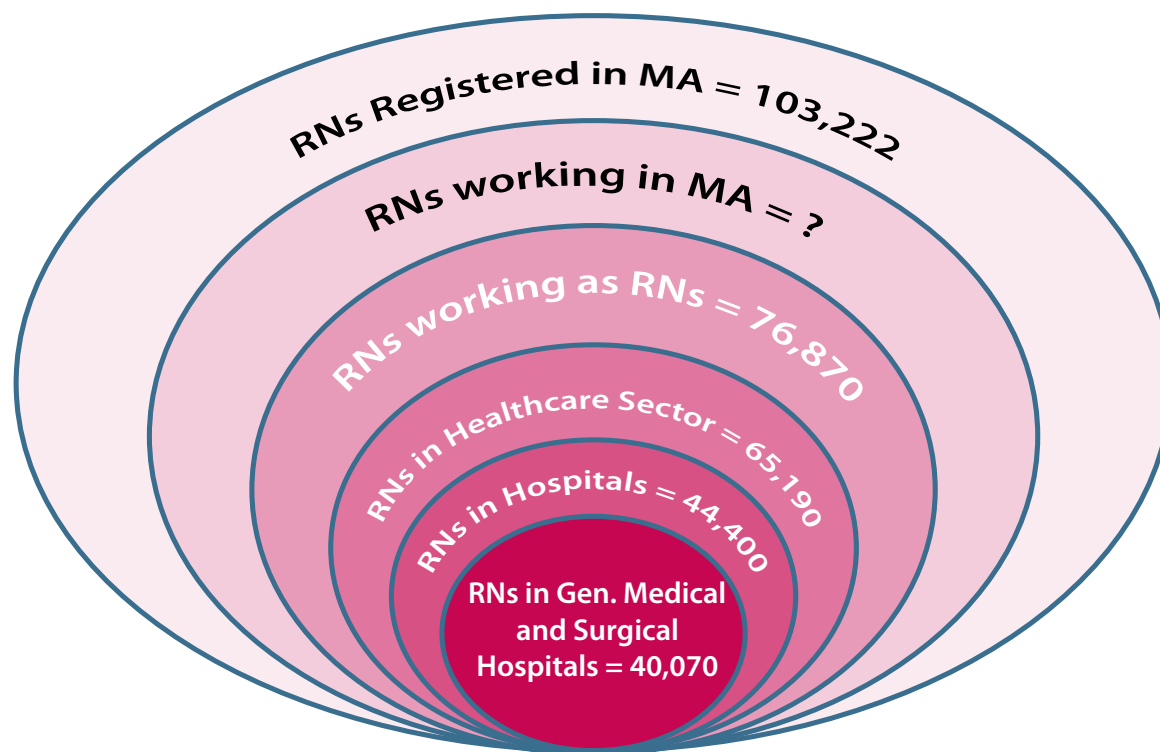
Note: Employers are listed if they comprise over 5% of the industry; otherwise they are placed within the "other" category.

## Chart 24

### *Massachusetts Registered Nurses by Type of Employment, 2005*

There are more than 76,870 RNs working as nurses in the state of Massachusetts, with 65,190 of them working in the healthcare sector. Also included in the 76,870 are RNs employed by governmental agencies and public health departments (3,000) or in educational institutions, pharmaceutical companies, or insurance firms. Additionally, there are about 30,000 RNs who are registered in Massachusetts, who are either working in jobs other than those of RNs, such as clinical project managers, or are not employed in Massachusetts. One possible explanation is that a proportion of

RNs registered in Massachusetts could reside in other states, especially neighboring states, and work in Massachusetts on a temporary short-term basis, as traveling nurses, or as independent contractors. While the total number of RNs working as RNs is known, the total number of RNs living in Massachusetts or who are not working as RNs is unknown, because those who choose to maintain certification in Massachusetts, but not work as RNs is not currently tracked.



Source 1: Massachusetts Department of Health & Human Services  
Certificate, Licensure, and Registration, 2004

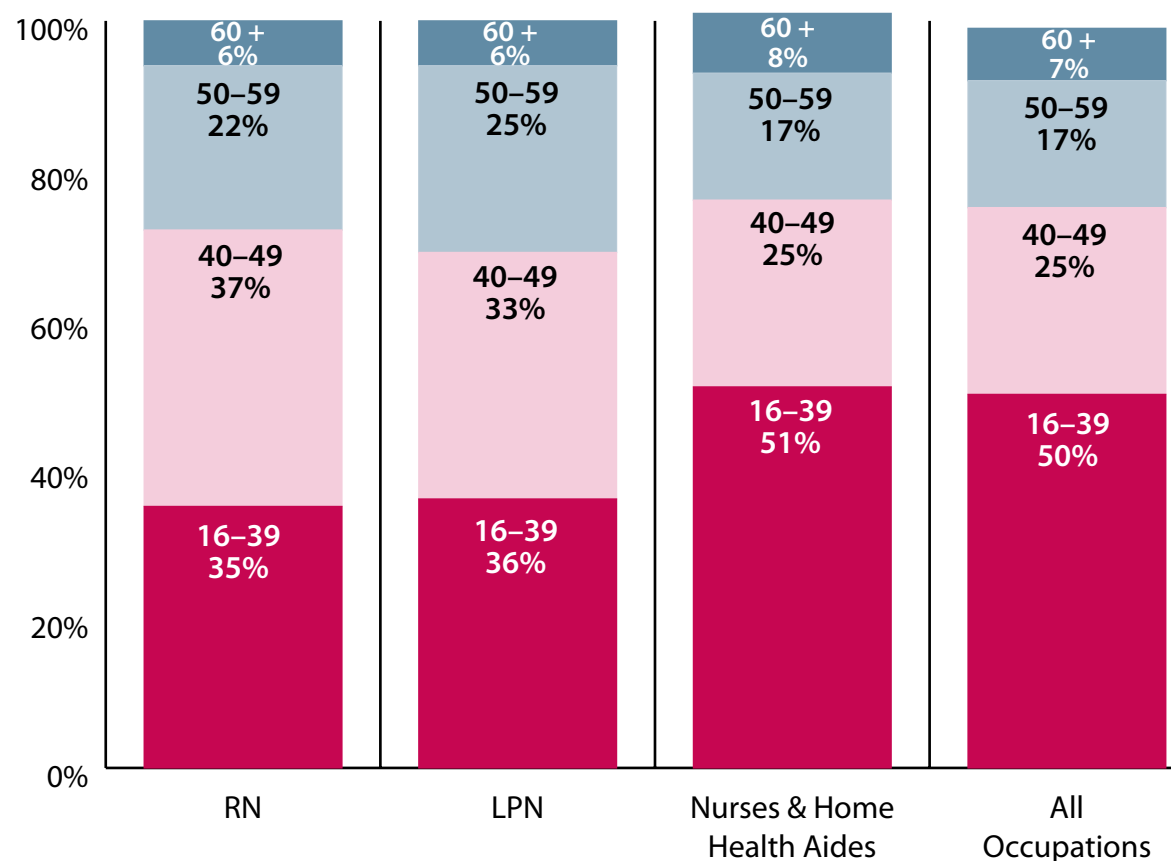
Source 2: Massachusetts Department of Workforce Development,  
Occupational Employment and Wage Industry Staffing Patterns, May, 2005

## Chart 25

### *Age of Nursing Professionals and Nursing Support Workers in Massachusetts, 2000*

Registered nurses (RNs) and licensed practical nurses (LPNs) in Massachusetts have roughly the same age distribution, with both groups older than either nursing aides or all workers in Massachusetts as of the 2000 Census. More than a quarter of RNs (28%) and LPNs (31%) in the state are 50 years or older, compared to

only 24% of all workers. Only about a third of nurses are under 40, while half of all Massachusetts workers are. The aging of the nursing workforce may pose a problem for the state in the future. It is interesting to note, that the age distribution of nursing aides is representative of all workers in Massachusetts.



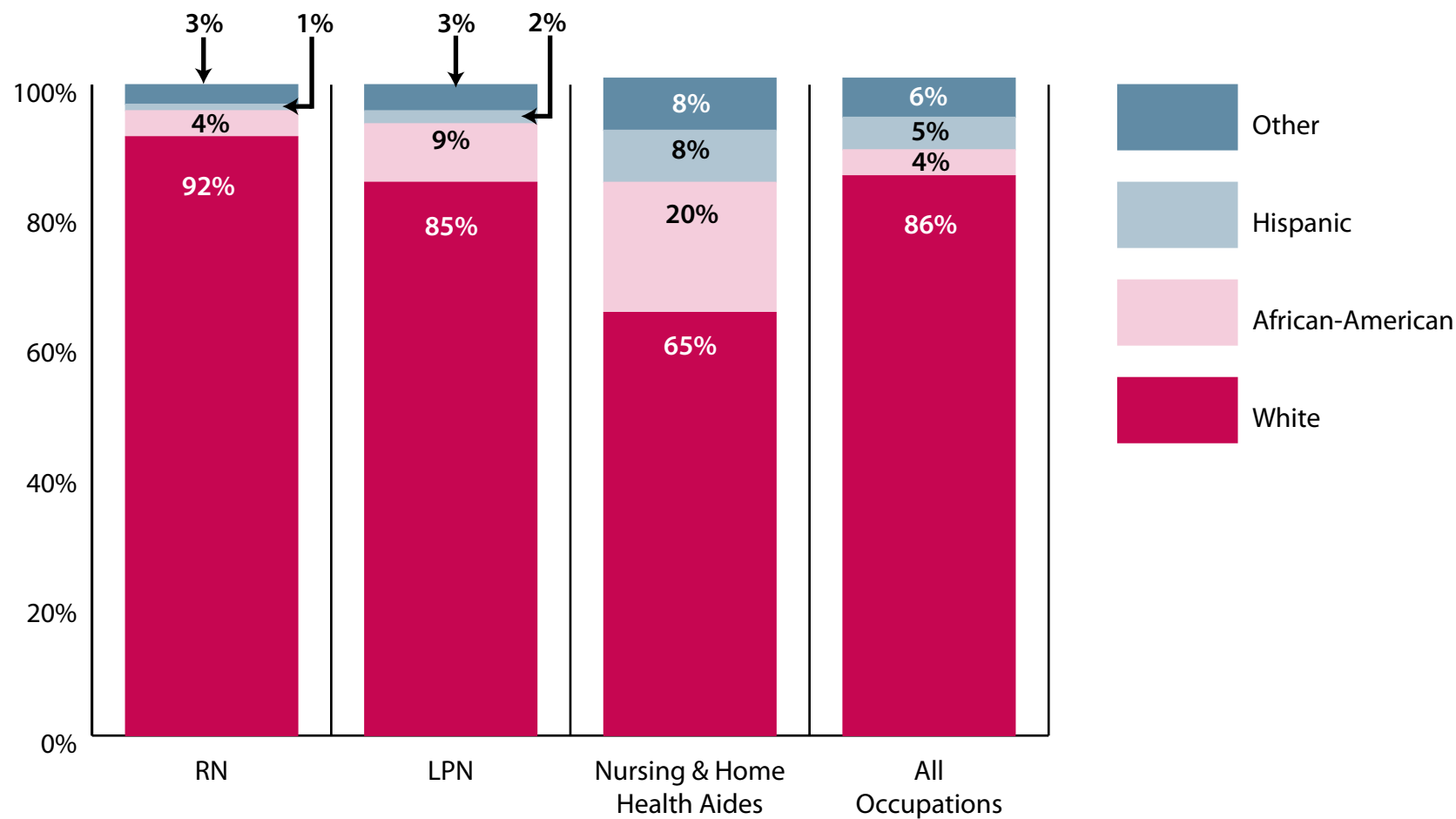
Source: 2000 Census  
Equal Employment Opportunity Tabulation

## Chart 26

### *Racial and Ethnic Diversity of Nursing Professionals and Nursing Support Workers in Massachusetts, 2000*

The further down the nursing career ladder you go, the more racially and ethnically diverse the occupation is. According to the 2000 Census for Massachusetts, the occupations of nursing aide and home health aide employ proportionally five times as many African-Americans and nearly twice as many Hispanics as the state

as a whole. Registered nurses (RNs) are the least diverse among the three occupations depicted here. For example, only 1% of RNs are Hispanic compared to 5% of all workers in the state.



Source: 2000 Census  
Equal Employment Opportunity Tabulation



## Chart 27

### Massachusetts Industry and Occupational Vacancy Rates, Q2, 2005 and Q2, 2006

The *healthcare* industry has the highest number of vacancies of any industry in the state, 17,621 in the fourth quarter of 2006 compared to a total statewide number of 92,639. Nearly half of these vacancies are for healthcare professionals and more than half of those professional vacancies are for registered nurses (RN) (4,581 RN vacancies, 6% vacancy rate).

The average vacancy rate for the healthcare practitioner and technical occupational group was 4.4% in the second quarter of 2006. For the healthcare support occupational group, the total vacancy

rate was 4.5%. These high vacancy rates and numbers have been sustained across seasons and years since the first Massachusetts Job Vacancy Survey in 2002.

High vacancy rates are an indication that the industry must resort to more expensive procedures in order to accurately staff itself, such as hiring temporary staff or using overtime.

#### Industries with the Highest Number of Vacancies

|                                 | Q2, 2005 |      | Q2, 2006 |      |
|---------------------------------|----------|------|----------|------|
|                                 | Number   | Rate | Number   | Rate |
| Massachusetts, Total            | 72,813   | 2.5% | 74,305   | 2.6% |
| Healthcare                      | 16,203   | 3.8% | 19,150   | 4.4% |
| Retail                          | 8,251    | 2.5% | 10,540   | 3.3% |
| Accommodation & Food Services   | 8,164    | 3.5% | 11,030   | 4.7% |
| Professional/Technical Services | 6,160    | 3.2% | 8,418    | 4.2% |
| Education                       | 5,471    | 1.8% | 6,429    | 2.1% |
| Manufacturing                   | 5,270    | 1.7% | 6,340    | 2.1% |

#### Occupations with the Highest Vacancies

|                                     | Q2, 2005 |      | Q2, 2006 |      |
|-------------------------------------|----------|------|----------|------|
|                                     | Number   | Rate | Number   | Rate |
| Massachusetts, Total                | 71,934   | 2.5% | 74,305   | 2.6% |
| Healthcare Practitioner & Technical | 8,862    | 4.8% | 8,574    | 4.4% |
| Sales                               | 8,419    | 2.6% | 10,848   | 3.3% |
| Office & Administration             | 8,260    | 1.5% | 9,090    | 1.7% |
| Food Preparation & Serving          | 6,878    | 2.7% | 8,704    | 3.4% |
| Management                          | 4,758    | 2.2% | 5,848    | 3.0% |
| Transportation                      | 3,621    | 2.1% | 3,826    | 2.3% |

Source: Massachusetts Job Vacancy Survey, 4<sup>th</sup> Quarter 2005, Department of Workforce Development

## Chart 28

### *Occupational Vacancies in Healthcare in Massachusetts, Q2, 2006*

The average vacancy rate for the healthcare practitioner and technical occupational group was 4.4% in the second quarter of 2006. For the healthcare support occupational group, the total vacancy rate was 4.5%.

Commonwealth Corporation has classified these occupational vacancy rates depending on how serious the unmet need is for each occupation. Critical vacancies are listed below, with persistent and constant vacancies identified. Critical vacancies are those that pay a living wage, have a sufficient level of total employment, a high num-

ber or rate of vacancies, and have persisted for at least one year (see Appendix, page 35, for detailed definitions of types of vacancies).

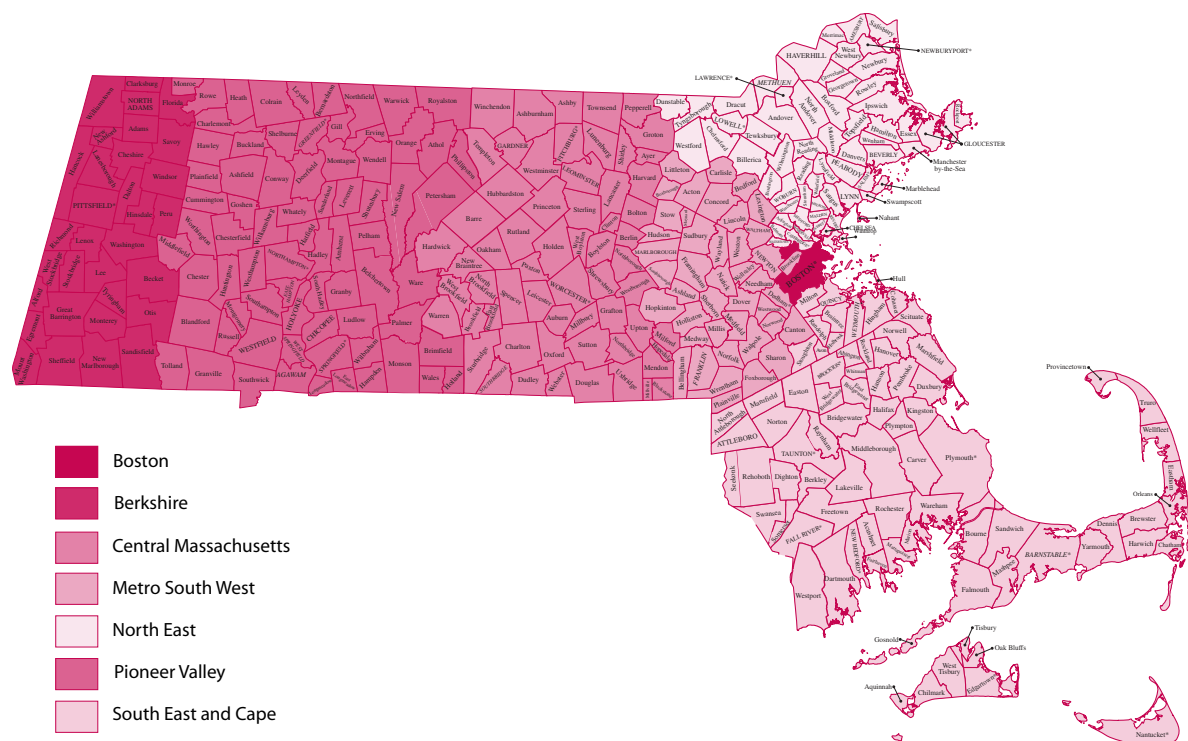
The healthcare industry is particularly afflicted with persistent and constant vacancies, indicating a tremendous need to train residents for certain healthcare occupations. Those occupations suffering from constant vacancies include registered nurses, licensed practical nurses, physical therapists, radiologic technologists and technicians and nursing aides.

| Occupations                                   | Vacancies | Vacancy Rate (%) | Persistent (Y/N) | Constant (Y/N) |
|---|-----------|------------------|------------------|----------------|
| Registered Nurses                             | 4,581     | 6.0%             | ✓                | ✓              |
| Physical Therapists                           | 381       | 6.3%             | ✓                | ✓              |
| Respiratory Therapists                        | 210       | 9.8%             |                  |                |
| Veterinarians                                 | 70        | 5.7%             |                  |                |
| Medical and Clinical Laboratory Technologists | 314       | 4.6%             | ✓                | ✓              |
| Medical and Clinical Laboratory Technicians   | 301       | 4.3%             |                  |                |
| Diagnostic Medical Sonographers               | 94        | 8.2%             | ✓                | ✓              |
| Radiologic Technologists and Technicians      | 244       | 4.2%             | ✓                | ✓              |
| Licensed Practical Nurses                     | 470       | 2.8%             | ✓                | ✓              |
| Nursing Aides, Orderlies, and Attendants      | 1,994     | 4.9%             | ✓                | ✓              |
| Physical Therapist Assistants                 | 107       | 5.4%             |                  |                |
| Physical Therapist Aides                      | 60        | 5.3%             |                  |                |
| Medical Assistants                            | 292       | 3.1%             | ✓                | ✓              |
| Veterinary Assistants                         | 97        | 5.3%             |                  |                |

Source 1: Commonwealth Corporation analysis of Massachusetts Job Vacancy Survey data

Source 2: Commonwealth Corporation analysis of Integrated Post-Secondary Educational Data Systems (IPEDS) data from the National Center for Educational Statistics.

## Appendix 1: Regional Definitions



## Appendix 2: Definition of Critical Occupational Vacancies

Commonwealth Corporation has developed a list of critical vacancies based on the Job Vacancy Survey (JVS) conducted by the Massachusetts Department of Workforce Development, under the Executive Office of Labor and Workforce Development. The purpose is to identify occupations for which there is critical and persistent demand, to help inform the state's workforce development system.

The specific definition for critical vacancies is detailed below, but critical vacancies essentially are occupations that employ a significant number of people, earn a minimum yearly salary that meets the self-sufficiency standard for one person, and have either a large number of vacancies or a high vacancy rate. Persistent vacancies are those that have persisted over time. Constant vacancies are those that have met the critical vacancy criterion for the previous six surveys (since Q4, 2003).

CRITICAL Vacancy is one for which:

1. Median Annual salary is greater than or equal to \$25,000; and
2. Occupational Employment is 1,000 or greater; and
3. Excludes Occupations with "all other" in occupational names (ex. Engineers, All other); and in either of the last two surveys has:
4. A Number of Vacancies greater than or equal to 200; or
5. A Vacancy Rate of greater than or equal to 5% employment in occupation; or
6. The Average Number of Vacancies has been greater than 300 since Q2, 2003.



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