



The Health Care Workforce in New York
Trends in the Supply and Demand for Health Workers



CHWS
Center for Health Workforce Studies

School of Public Health
University at Albany, State University of New York

**The Health Care Workforce in New York:
Trends in the Supply of and Demand for Health Workers**

March 2018



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PREFACE

This report summarizes data and information about New York's health workforce to describe supply of and demand for workers and to provide projections for future demand. A key goal of this report is to assist policy makers and other stakeholders in:

- making informed decisions on health workforce education and job training investments;
- addressing the most pressing health care workforce needs;
- guide health workforce policies, including decisions about the capacity of health professions education programs; and
- informing current and prospective students about health care employment prospects and opportunities.

This report was prepared by Center for Health Workforce Studies (CHWS) staff, including Robert Martiniano, R. Ashley Krohmal, Lauren Boyd, Yuhao Liu, Nafin Harun, Evan Harasta, Shen Wang, and Jean Moore, with editing by Matt Allegretti. Funding for this report was provided by the 1199 Hospital League Health Care Industry Planning and Placement Fund, Inc.

Established in 1996, CHWS is an academic research center, based at the School of Public Health, University at Albany, State University of New York (SUNY). The mission of CHWS is to provide timely, accurate data and conduct policy relevant research about the health workforce. The research conducted by CHWS supports and promotes health workforce planning and policymaking at local, regional, state, and national levels. Today, CHWS has established itself as a national leader in the field of health workforce studies.

The views expressed in this report are those of CHWS and do not necessarily represent positions or policies of SUNY or 1199 Hospital League Health Care Industry Planning and Placement Fund, Inc.

March 2018

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I. EXECUTIVE SUMMARY

A. Background

The health workforce is a vital part of New York State's health care delivery system. Efforts to improve the quality of health services and expand access to care depends on the availability of an adequate supply of appropriately prepared health workers. With the rapid pace of change in health care, it has become more important and more challenging to assess current and future health workforce needs. Among the most significant changes that affect the demand for health workers include:

- The shifting focus of the health care delivery system to primary care and prevention;
- Increasing use of team-based service delivery models;
- Growing attention to population health, especially chronic disease management;
- An aging population;
- Expanding scope of practice;
- Creating new categories of workers who assist in the delivery and management of care;
- Increasing numbers of integrated service delivery systems, including accountable care organizations; and
- Payment reform, moving to value-based payment models.

New York has initiated a number of important programs such as the *Delivery System Reform Incentive Payment (DSRIP)* program and the *State Health Innovation Plan (SHIP)* that support the transition to models of service delivery that are team based, primary care focused, and support value based payment. At a time when health care systems are undergoing dramatic change, data and information on the health workforce can contribute greatly to informed workforce planning and development.

This report presents data drawn from a variety of sources to describe the state's health workforce, and provides these data statewide and by region. It includes information on the health status of New Yorkers, the health care system, and the supply of and demand for health workers. The report is designed to assist stakeholders to improve health workforce planning efforts.

B. Key Findings

Health sector employment in the state and the nation continues to be an important economic driver, accounting for a substantial amount of job growth.

- In 2016, there were nearly 22 million jobs in the US either in the health sector or in health occupations employed outside the health sector, accounting for over 14% of the total US workforce.
- Health sector employment in New York State accounted for 12% of total employment in 2016, higher than the national level of nearly 11%.
- Health sector employment in New York State has grown by nearly 30% between 2000 and 2016, compared to less than 5% job growth for all other employment sectors.
- Employment in the health care sector outside of New York City increased by over 24%, while employment in other employment sectors increased by less than 1% during that same period.

Statewide, jobs grew more rapidly in home health care between 2002 and 2016, compared to other health sector settings.

- While hospitals continued to employ the largest share of health sector workers (40%) in the state, job growth was more pronounced in other health care settings, including home health care adding over 56,000 jobs and ambulatory care adding more than 28,000 jobs between 2002 and 2016.

Primary care physicians^a and psychiatrists^b are not well distributed across the state, with wide regional variation.

- In 2017, the Long Island region had the most primary care physicians per capita with 96.2 per 100,000, while the North Country (61.0 per 100,000) had the least.
- The New York City region had the most psychiatrists per capita (41.9 per 100,000) in 2017, while the North Country (11.3 per 100,000) and the Mohawk Valley (10.9 per 100,000) regions had the least.

In 2017, health facilities across the state reported difficulty recruiting various health professions.

- Hospitals reported difficulties recruiting clinical laboratory technologists, psychiatric NPs, and physician assistants.
- Fifty percent of hospitals reported plans to expand clinical services in 2018.
- Nursing homes in the state reported the most difficulty recruiting and retaining experienced RNs and nurse directors and managers in 2017.
- In 2017, the state's home health agencies reported the greatest difficulty recruiting RNs, physical therapists, and occupational therapists.
- Seventy-four percent of home health care agencies projected expanding their paraprofessional workforce (eg. home health aides, personal care aides, others) within the next year.
- In 2016, federally qualified health centers (FQHCs) in the state reported the most difficulty recruiting psychiatrists, psychiatric NPs, and family/general practice physicians.

Between 2014 and 2024, the New York State Department of Labor (DOL) projects significant job growth for a number of health occupations.

- Between 2014 and 2024, there are nearly 11,000 annual projected openings for home health aides, followed by RNs (7,500), personal care aides (6,500), and nursing assistants (4,300).

^a Primary care physicians include general practice, family practice, general internal medicine, obstetrics/gynecology, and general pediatrics.

^b Psychiatrists include general psychiatrists and child and adolescent psychiatrists.

II. BACKGROUND

A. Overview

The health workforce is a vital part of New York State's health care delivery system. Efforts to improve the quality of health services and expand access to care depends on the availability of an adequate supply of appropriately prepared health workers. With the rapid pace of change in health care, it has become more important and more challenging to assess current and future health workforce needs. Among the most significant changes that affect the demand for health workers include:

- The shifting focus of the health care delivery system to primary care and prevention;
- Increasing use of team-based service delivery models;
- Growing attention to population health, especially chronic disease management;
- An aging population;
- Expanding scope of practice;
- Creating new categories of workers who assist in the delivery and management of care;
- Increasing numbers of integrated service delivery systems, including accountable care organizations; and
- Payment reform, moving to value-based payment models.

New York has initiated a number of important programs such as the *Delivery System Reform Incentive Payment (DSRIP)* program and the *State Health Innovation Plan (SHIP)* that support the transition to models of service delivery that are team based, primary care focused, and support value based payment. At a time when health care systems are undergoing dramatic change, data and information on the health workforce can contribute greatly to informed workforce planning and development.

This report presents data drawn from a variety of sources to describe the state's health workforce, and provides these data statewide and by region. It includes information on the health status of New Yorkers, the health care system, and the supply of and demand for health workers. The report is designed to assist stakeholders to improve health workforce planning efforts.

B. Objectives and Goals

The objectives of this report are to:

- Describe health care employment trends in New York; and
- Identify the health professions and occupations in greatest demand currently and offer projections for future demand.

The goals of this report are to:

- Assist policy makers and other stakeholders to target health workforce education and job training resources to address the most pressing health workforce needs;
- Guide health workforce policies, including decisions about the capacity of health professions education programs; and
- Inform current and prospective students about health care employment prospects and opportunities.

C. Data Sources and Methods

All data sources for this report are cited unless they entail primary data collection conducted by the Center for Health Workforce Studies (CHWS) and collaborating partners. The following is a list of data sources used in this report. Where appropriate, the methods used for calculating the rates in this report are also described.

Information provided in this report is statewide or by New York State Department of Labor (NYSDOL) regions. A list of counties and a map depicting the NYSDOL regions are presented on pages 11, 12, and 13.

Data sources include:

1. Center for Health Workforce Studies

- Surveys of Human Resources Directors in Health Care

CHWS, in conjunction with statewide and regional provider organizations, conducts annual surveys of human resources directors from FQHCs, home health care agencies, hospitals, and nursing homes across New York State. The 2017 surveys ask about the professions and occupations that pose the greatest recruitment and retention problems, as well as emerging care coordination titles and employment trends. Recruitment and retention difficulty is assessed on a 1 (least difficult) to 5 (most difficult) scale. The provider organizations that CHWS collaborated with on these surveys included:

- Community Health Center Association of New York State
- Healthcare Association of New York State
- Home Care Association of New York State, Inc.
- LeadingAge New York
- New York State Association of Healthcare Providers, Inc.

Home health care agencies serve patients in multiple counties, and multi-site FQHCs may serve more than one county. In these cases, the counties may be located in different NYSDOL regions. Consequently, information on recruitment and retention for home health care agencies and FQHCs was reported in each region where services were provided or sites were located. Additionally, in instances where total responses for a region (either by setting or by occupation) were less than 5, no information is provided or regions were combined.

- New York State RN Graduations

CHWS surveys RN education programs in New York annually to describe trends in the production of RNs in the state. The 2017 survey included questions about applications, acceptances, and graduations for that year as well as projected graduations through 2017.

- New York State Physician Data

Physician estimates were developed using a number of different sources, including physician relicensure survey data, and represents physicians actively working in New York. Counts used in this report represent individuals, not full time equivalents, with no estimation of time spent in patient care.

2. US Bureau of Labor Statistics (BLS) and the NYSDOL

- Covered Employment and Wages Program (ES-202)

Counts of Jobs

Data from 2012-2016 were used to describe regional changes in health care employment by setting. A number of events potentially affected the information reported, including closures, mergers, and expansions. Consequently, large changes in jobs in specific health sectors (i.e. hospitals, nursing homes, or home health care) may reflect a change in ownership or the service delivery system rather than changes in the workforce. At times, addresses of survey respondents could not be determined. Consequently, summing the regions will not add up to the statewide total.

- Occupational Employment Statistics (OES)

Wages

Wages are based on 2013, 2014, 2015, and 2016 Occupational Employment Survey (OES) data, which were then revised to the first quarter of 2017 by making cost of living adjustments. Average hourly salary was calculated by dividing average annual salary by 52 weeks and by 40 hours per week. Entry-level and experienced-level wages were determined by using Occupational Employment Statistics data. Entry-level wages were calculated by averaging the bottom third of wages in an occupation. Experienced-level wages were calculated by averaging the top two-thirds of wages in an occupation.

- Employment Projections

Every 2 years, BLS develops employment projections for the nation. National employment projections used in this report reflect a count of the number of jobs in certain occupational categories and by health care setting for 2016 - 2026. NYSDOL develops projections for the state and by NYSDOL region, which are both for the period 2014 - 2024. Annual job openings reflect both newly created positions in the occupation and turnover of workers in existing positions who retire, change jobs, or leave the occupation. Occupations with a small increase in the number of new jobs but a high number of annual openings typically reflect significant annual turnover rather than expansion of the occupation. Limitations to these projections include unanticipated external factors such as recessions, change in

scopes of work or education for specific occupational titles, changes in state and/or federal reimbursement, and/or advancements in technology.

3. Integrated Postsecondary Education Data System

The data from school year 2011/2012 (hereafter referred to as 2012) to school year 2015/2016 (hereafter referred to as 2016) were used to describe the number of new graduates each year potentially entering health occupations. These data were collected from two and four year universities, vocational schools, and technical schools. The number of graduations were displayed and aggregated by the NYDOL regions. These data do not reflect missing data or individuals trained through on-the-job training programs.

4. State Education Department (SED) Licensure Data

Licensure data from 2013-2017 presented in this report reflects counts of licensed health professionals in New York. Data on licenses are available from SED on the number of individuals licensed in a health profession. SED licenses more than 40 health professions, and individuals must secure a New York license before practicing in one of these health professions. Each year in April, CHWS downloads these data.

Licensure data in a health profession represent the upper limit of the number of individuals in New York who can practice in a profession. It is important to recognize the limitations of these data. Some individuals who are licensed in a health profession may be working less than full-time, not at all in the profession, or may be working in the profession but in another state. Licensure data, however, can provide valuable information on major trends in the supply of health professionals in the state.

In reviewing licensure data, please be aware that:

- Social workers (SWs) are licensed in New York as either licensed clinical social workers (LCSWs) or licensed master social workers (LMSWs). Although some data sources provide statistics for LCSWs and LMSWs collectively as social workers, the licensing distinction is reflected for the purposes of understanding recruitment and retention difficulties.
- NPs are licensed as RNs but certified in 1 of 16 NP specialties. Information presented in the report at the regional level represents a duplicated count of NPs across all specialties. The statewide count, however, is unduplicated.
- Counts of health professionals by county are based on the mailing address in the licensure file, which could be either a home or a practice location. Additionally, certain individuals in the file may be licensed to practice in New York but live in another state.^c

5. US Census

The American Community Survey is conducted each year and is used to provide population estimates. The 2011-2015 American Community Survey was used to describe selected population characteristics by NYSDOL regions. The population characteristics included total population, age structure, poverty, race/ethnicity, and education level. The education levels and rates were based on individuals aged 25 years and older.

^c The total listed in the report includes all New York licensed individuals regardless of whether the address given in the licensure file was a New York address, whereas tables of licensees by region include only those individuals with an address in the region.

6. New York State Community Health Indicator Report

These data from 2012-2014 (2010-2012 for cancer), were used to describe the health of the population by NYSDOL regions. The health indicators were obtained from Community Health Indicator Reports (CHIRS) and includes information on deaths, births, and hospitalizations. Both counts and rates are reported for the average of 3 years. The rates for calculating these health indicators are as follows:

- Infant death rates are reported per 1,000 live births.
- Total birth rates are reported per 1,000 females aged 15 to 44 years.
- Teen birth rates are reported per 1,000 females aged 15 to 19 years.
- Low-birthweight rates and percentage of late/no prenatal care are reported per 100 live births. Percent of late/no prenatal care was based on those births where information was provided and not on total births.
- All deaths are reported per 100,000 total population.
- Rates per 10,000 for adult asthma hospital admissions are based on population aged 18 and older.
- Rates per 10,000 for pediatric asthma hospital admissions are based on population aged birth to 15 years.
- All other rates per 10,000 for hospitalizations and emergency department (ED) visits are based on the total population.

7. New York State Department of Health SPARCS Data

The Statewide Planning and Research Cooperative System (SPARCS) collects patient-level information for all hospital inpatient stays, outpatient visits (including visits to hospital extension settings), and ED visits. Data from SPARCS were used to report the number of preventable hospitalizations. The numbers represent the average of 3 years, from 2012 to 2014, and the rates are based on per 10,000 average total population.

8. Center for Disease Control and Prevention BRFSS Data

The Behavioral Risk Factor Surveillance System (BRFSS) is a phone survey conducted by the CDC to collect state data about the U.S. residents regarding their health-related risk behaviors. Data from BRFSS was used to examine home ownership, if the person has someone they consider as their personal doctor, and the date of the person's last routine checkup.

D. Terminology

The settings used in this report are based on the North American Industry Classification System (NAICS) for the health care sector. The breakdown of settings within the health care sector is as follows:

- Hospitals (public and private);
- Nursing and personal care facilities (excluding residential, mental retardation, mental health and substance abuse facilities, and other residential care facilities);
- Home health care; and
- Ambulatory care settings (excluding home health care), including:

- Medical and diagnostic laboratories;
- Offices and clinics of doctors of medicine;
- Offices and clinics of dentists;
- Offices and clinics of other health practitioners;
- Outpatient care centers; and
- Other ambulatory health services.

This classification scheme provides standardization among the data sets presented, but it has some limitations. By limiting the analyses to the NAICS health services industries, health care workers in hospital-sponsored ambulatory care sites may be included in hospital employment counts. In addition, health care professionals in industries outside of the settings listed, such as those working in schools, insurance firms, or who are self-employed, are excluded from the health sector counts. CHWS estimates that, nationally, 3% of the health care workforce is employed outside of the health care sector as defined by BLS (Table 1, page 14).

Historically, OES groups occupations by category. These occupational categories also have limitations. For example, prior to 2010, registered nursing made no distinction between NPs, nurse midwives, and RNs. Additionally, nursing aides, orderlies, and attendants occupational category includes multiple job titles, levels of training, and certifications.

There are some job titles in a health setting that may not necessarily reflect similar OES occupational classifications and this may cause some problems in reporting. For example, confusion may result from the differences in defining a home health aide as any individual providing services in the home, or as one who completes home health aide certification requirements.

Additionally, throughout this report some abbreviations are used. The following is a list of the most common.

CNA	certified nursing aide
FPL	federal poverty level
FQHC	federally qualified health center
HIT	health information technology
LCSW	licensed clinical social worker
LMSW	licensed master social worker
LPN	licensed practical nurse
MDS (coordinators)	minimum data set (coordinators)
NP	nurse practitioner
OB/GYN	obstetrician/gynecologist
PA	physician assistant
PCP	primary care physician
PPS	preferred provider system
RN	registered nurse

E. Geographic Areas

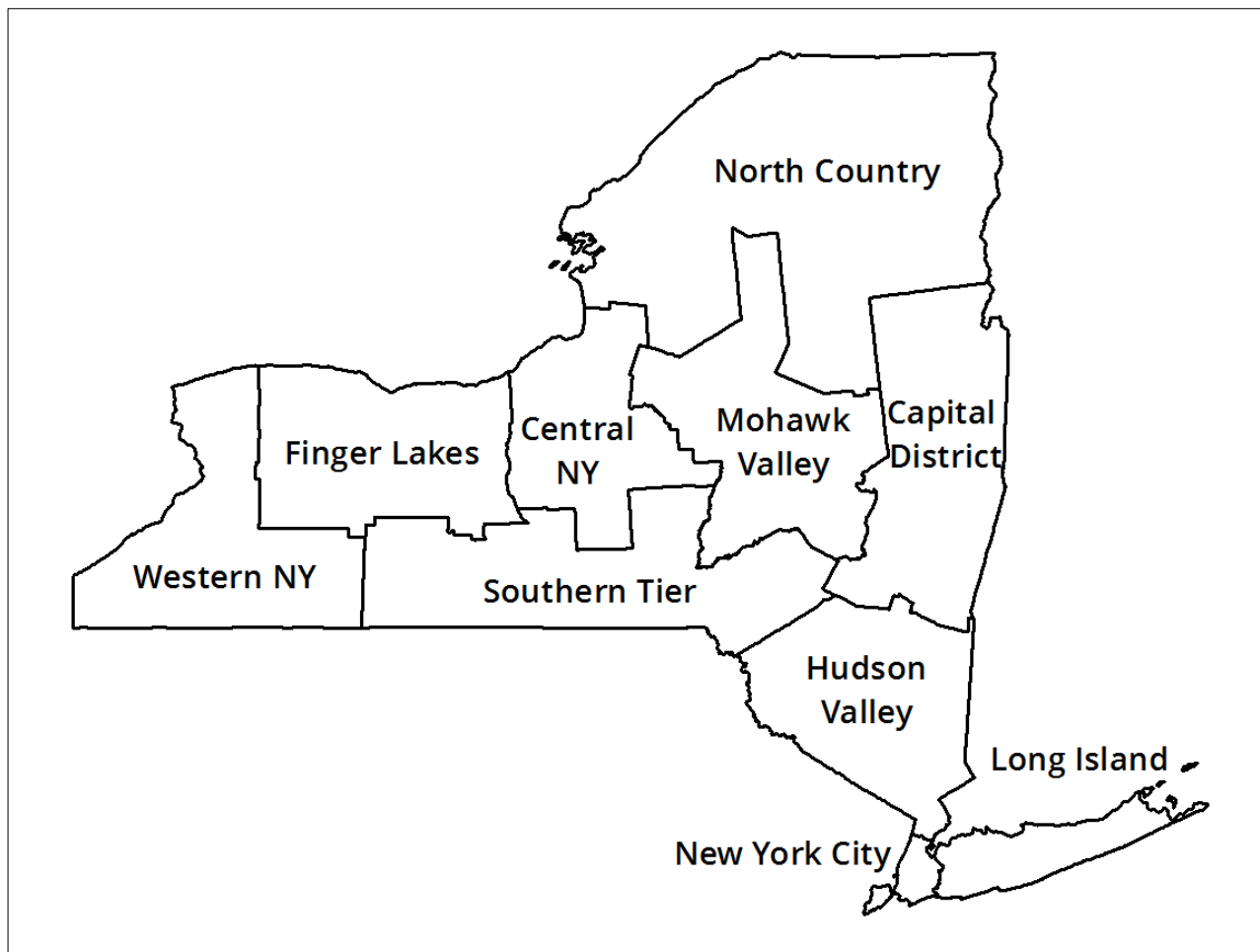
For purposes of this report, New York State Department of Labor regions are used as described below and as depicted in Figure 1.

The NYSDOL regions (Figure 1) used in this report are:

- Capital District: The counties of Albany, Columbia, Greene, Rensselaer, Saratoga, Schenectady, Warren, and Washington.
- Central New York: The counties of Cayuga, Cortland, Madison, Onondaga, and Oswego.
- Finger Lakes: The counties of Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne, Wyoming, and Yates.
- Hudson Valley: The counties of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester.
- Long Island: The counties of Nassau and Suffolk.
- Mohawk Valley: The counties of Fulton, Herkimer, Montgomery, Oneida, Otsego, and Schoharie.
- New York City: The counties of Bronx, Kings (Brooklyn), New York (Manhattan), Queens, and Richmond (Staten Island).
- North Country: The counties of Clinton, Essex, Franklin, Hamilton, Jefferson, Lewis, and St. Lawrence.
- Southern Tier: The counties of Broome, Chemung, Chenango, Delaware, Schuyler, Steuben, Tioga, and Tompkins.
- Western New York: The counties of Allegany, Cattaraugus, Chautauqua, Erie, and Niagara.

For the purpose of this report, the term “upstate New York” is used to define all New York state regions outside of New York City, except for the PPS Recruitment and Retention where “upstate New York” is defined as all regions outside New York City and Long Island.

Figure 1. New York State Department of Labor Regions

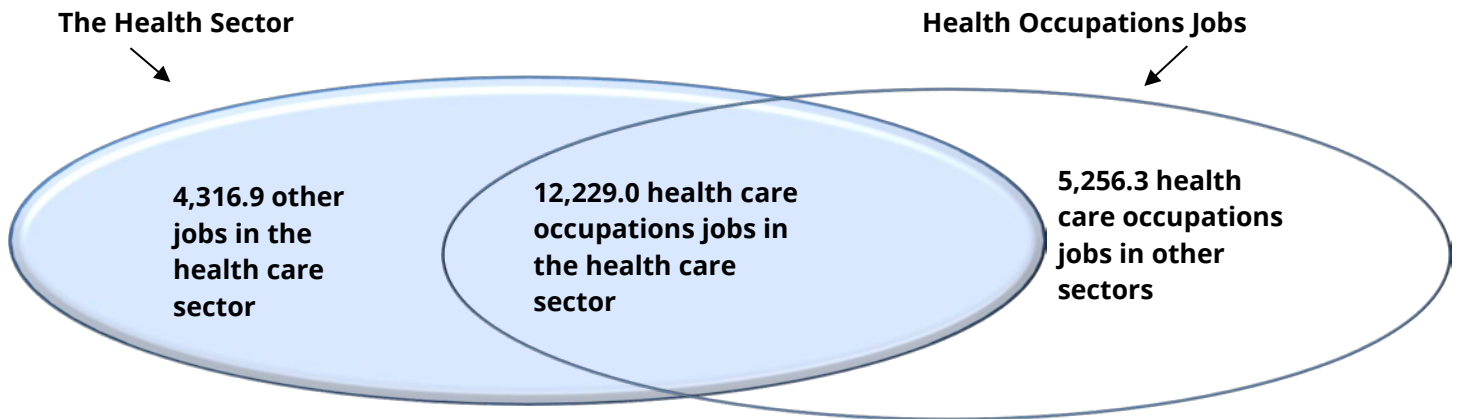


III. THE HEALTH CARE WORKFORCE IN THE UNITED STATES

A. Total Employment

In 2016, there were nearly 22 million jobs either in the health sector or in health occupations employed outside the health sector, accounting for over 14% of the total US workforce. In 2016, almost 16.5 million of these jobs (11% of US employment) were in the health sector, including both health and non-health-related occupations. The remaining 5.3 million jobs (3% of US employment) were in health occupations in other sectors (Figure 2 and Table 1).

Figure 2. The US Health Workforce, 2016 (in Thousands)



Source: US Department of Labor, Bureau of Labor Statistics. Employment Projections program: Table 1.9, 2016-2026 Industry-Occupation Matrix Data, by Industry; and Table 2.7, Employment and Output by Industry.

Table 1. The US Health Workforce, 2016 (in Thousands)

Setting	Health Care Occupation Jobs	Other Jobs	Total
Health Care Settings	12,229.0	4,316.9	16,545.9
Other Work Settings	5,256.3	134,261.6	139,517.9
Total	17,485.3	138,578.5	156,063.8

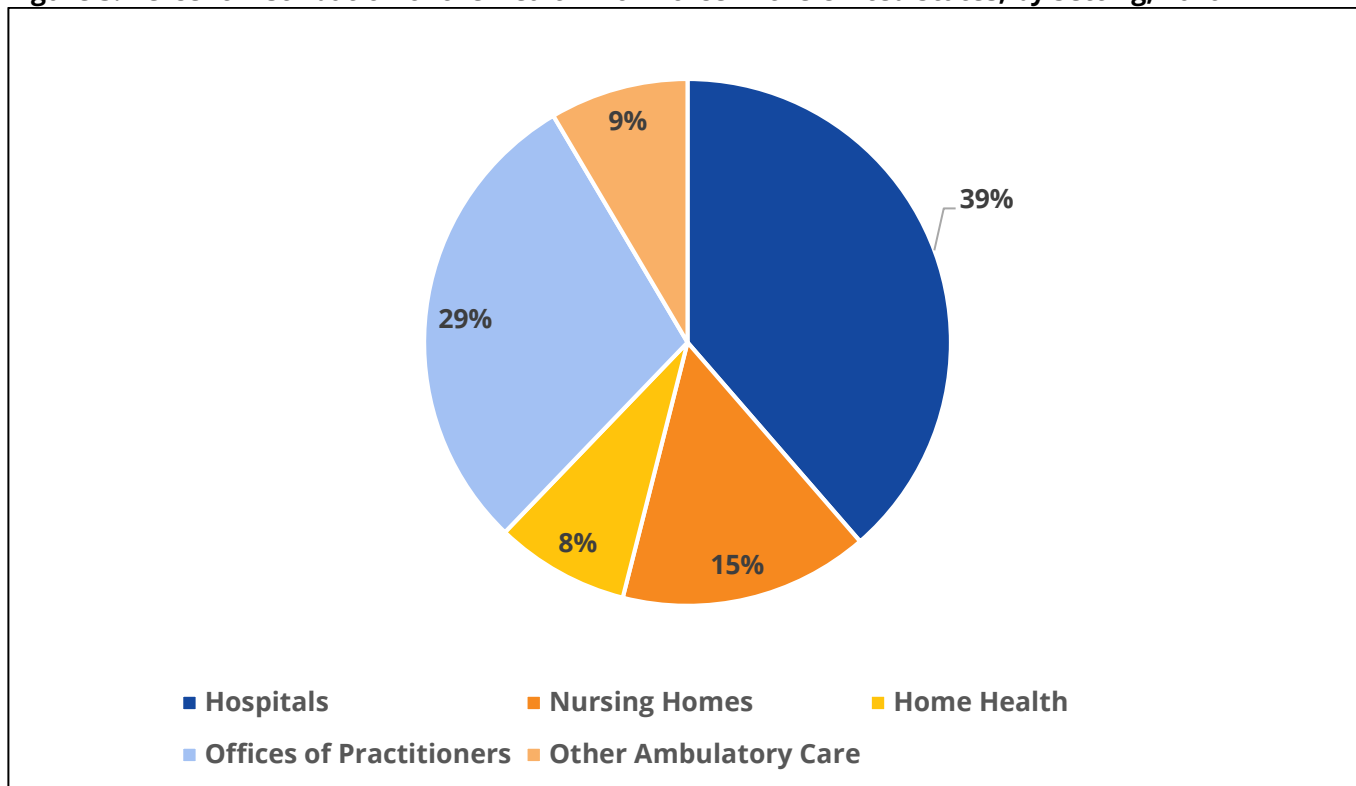
Setting	Number	Percent
Health Care Occupations Jobs in Health Care Settings	12,229.0	7.8%
Other Jobs in Health Care Settings	4,316.9	2.8%
Health Care Occupations Jobs in Other Settings	5,256.3	3.4%
Total	21,802.2	14.0%

Source: US Department of Labor, Bureau of Labor Statistics. Employment Projections program: Table 1.9, 2016-2026 Industry-Occupation Matrix Data, by Industry; and Table 2.7, Employment and Output by Industry.

B. By Setting

Hospitals continued to employ the most health workers in the United States (39%), followed by offices of health practitioners (29%), nursing homes (15%), other ambulatory settings (9%), and home health care (8%) (Figure 3).

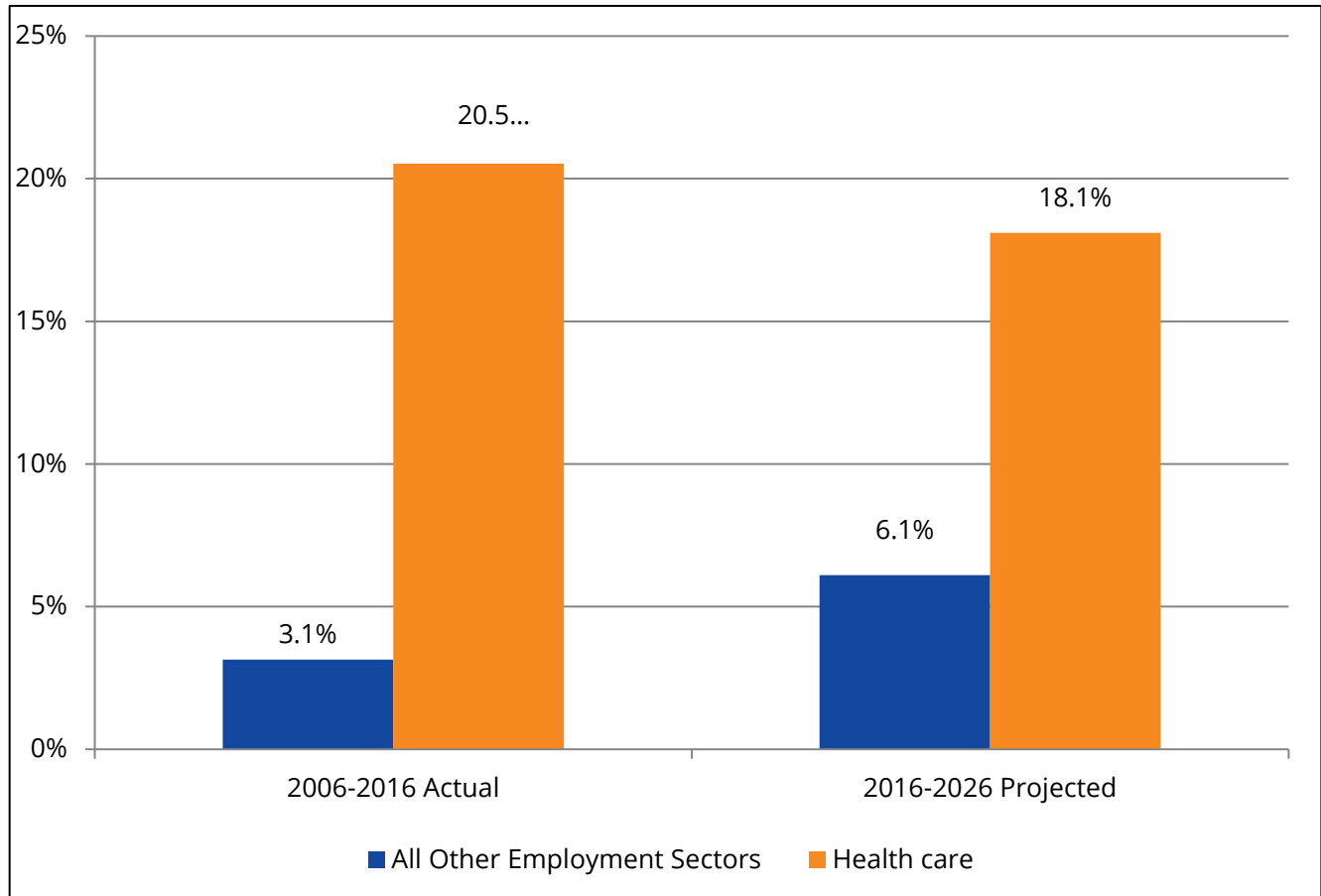
Figure 3. Percent Distribution of the Health Workforce in the United States, by Setting, 2016



Source: US Department of Labor, Bureau of Labor Statistics. Employment Projections program: Table 1.9, 2016-26 Industry-Occupation Matrix Data, by Industry; Table 2.7, Employment and Output by Industry.

Job growth in the health care sector continues to outpace job growth in all other employment sectors. Employment in the health care sector grew by about 20% between 2006 and 2016, adding 2.8 million jobs, while job growth in all other sectors grew by 3% during the same time period (Figure 4). Employment in the health care sector is expected to grow faster than employment in all other sectors between 2016 and 2026, with projected increases of 18% and 6%, respectively.

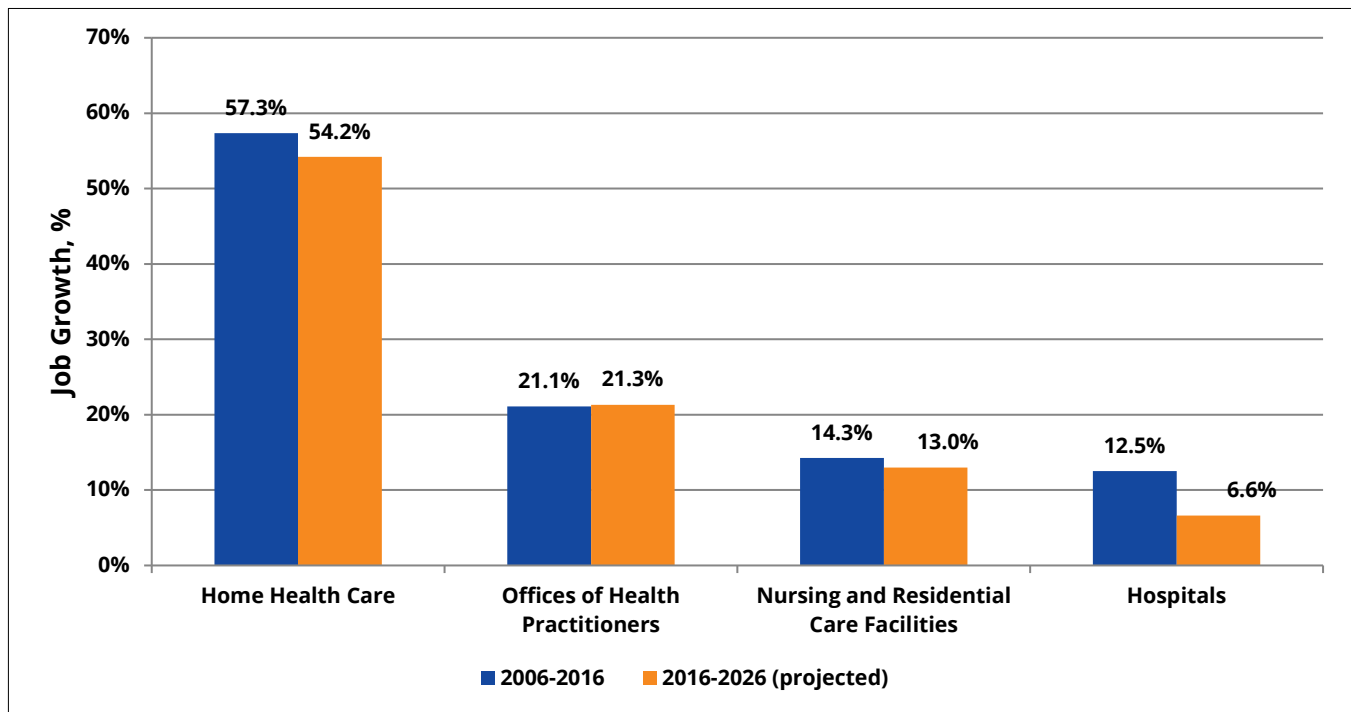
Figure 4. Job Growth in the Health Care Sector Compared with All Other Employment Sectors in the United States, 2006-2016 and Projected 2016-2026



Sources: US Bureau of Labor Statistics, employment projections, 2016-2026: Table 1.9: 2016-26 Industry-occupation matrix data, by industry; Table 2.7: Employment and output by industry, 2006, 2016, and projected 2026; Current Employment Statistics national estimates for employment, hours, and earnings.

Home health care is projected to see the most job growth (54%) across all health care settings, adding nearly 500,000 new jobs between 2016 and 2026. Additionally, jobs in offices of health practitioners (physicians, dentists, and other health practitioners) are expected to grow by 21%, adding more than 844,000 jobs during the same time period. Private and public hospital employment is projected to see the slowest growth between 2016 and 2026, increasing by about 7% and adding nearly 700,000 jobs (Figure 5).

Figure 5. Job Growth in Selected Settings Within the Health Care Sector, 2006-2016 and Projected 2016-2026

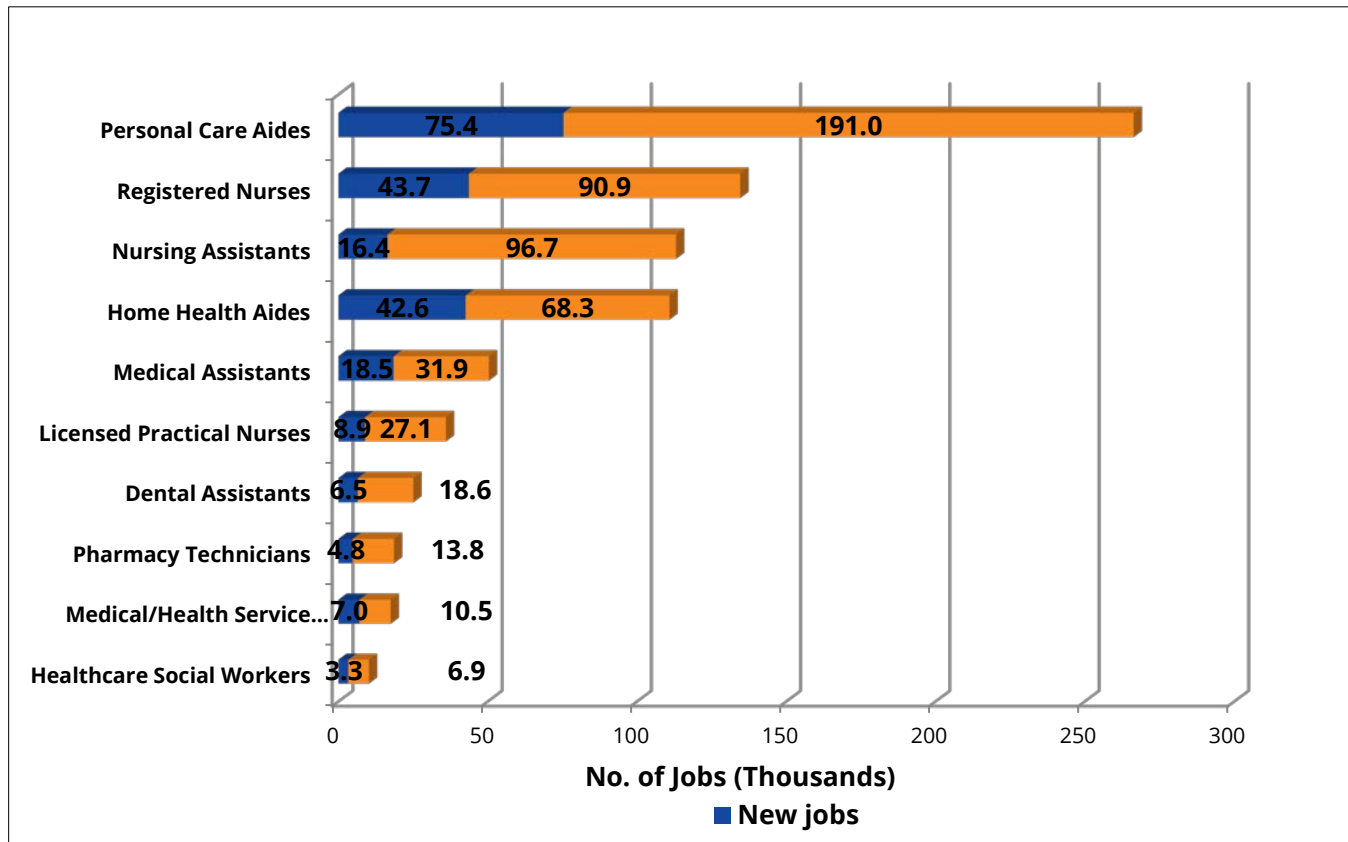


Sources: US Bureau of Labor Statistics, employment projections, 2016-2026: Table 1.9: 2016-2026 Industry-occupation matrix data by industry; Table 2.7: Employment and output by industry, 2006, 2016, and projected 2026; Current Employment Statistics national estimates for employment, hours, and earnings.

C. By Occupation

It is estimated that 11.6 million additional health care workers will be needed between 2016 and 2026 in the US to fill new jobs and to replace workers who leave the occupation or retire. The total number of new health care worker jobs across all employment sectors is projected to increase by more than 3.5 million between 2016 and 2026, or about 350,000 annually. In addition, approximately 810,000 (8.1 million over the ten-year period) health care workers will be needed annually to replace individuals expected to leave the occupation or retire over the same period (Figure 6).

Figure 6. Projected Annual Need for New Workers Among Health Care Occupations With Greatest Growth, 2016-2026



Source: US Department of Labor, Bureau of Labor Statistics. Employment Projections program: Table 1.10 Occupational separations and openings, projected 2016-2026 (Numbers in thousands)

Between 2016 and 2026, 15 of the 30 fastest-growing occupations nationally are projected to be in health care, including 4 of the top 6. Home health aides (47%), personal care aides (37%), physician assistants (37%), and nurse practitioners (36%) are projected to be the 4 fastest-growing health care occupations between 2016 and 2026. The 15 fastest-growing health care occupations projected nationally are:

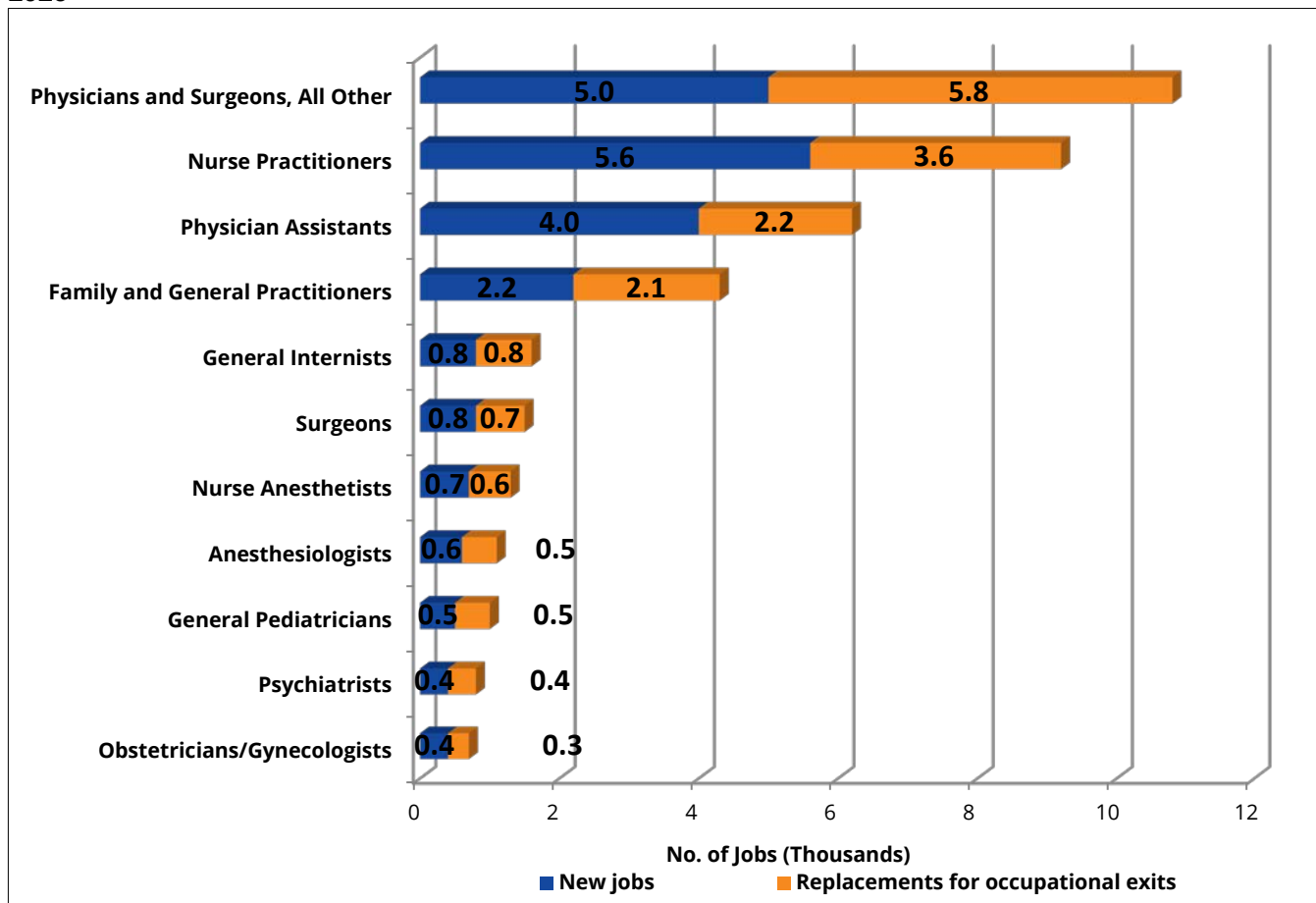
- Home health aides (46.7%)
- Personal care aides (37.4%)
- Physician assistants (37.4%)
- Nurse practitioners (36.0%)
- Physical therapist assistants (30.8%)
- Medical assistants (29.1%)
- Physical therapist aides (29.1%)

- Occupational therapy assistants (28.9%)
- Genetic counselors (28.3%)
- Physical therapists (25.0%)
- Occupational therapy aides (24.7%)
- Phlebotomists (24.4%)
- Massage therapists (23.5%)
- Respiratory therapists (23.4%)
- Diagnostic medical sonographers (23.2%)

Source: US Bureau of Labor Statistics, employment projections, 2016-2026: Table 1.3, Fastest growing occupations, 2016 and projected 2026.

More than 37,000 physicians, nurse practitioners, and physician assistants are projected to be needed nationally on an annual basis between 2016 and 2026 to replace those who leave the occupation or retire. Approximately 15,400 nurse practitioners and physician assistants will be needed annually between 2016 and 2026 to fill new positions or fill positions permanently vacated. Additionally, 7,600 primary care physicians and 14,200 other physician specialties are projected to be needed annually to fill new positions or positions vacated by individuals expected to leave the occupation or retire (Figure 7).

Figure 7. Projected Annual Need for Physicians, Nurse Practitioners, and Physician Assistants, 2016-2026



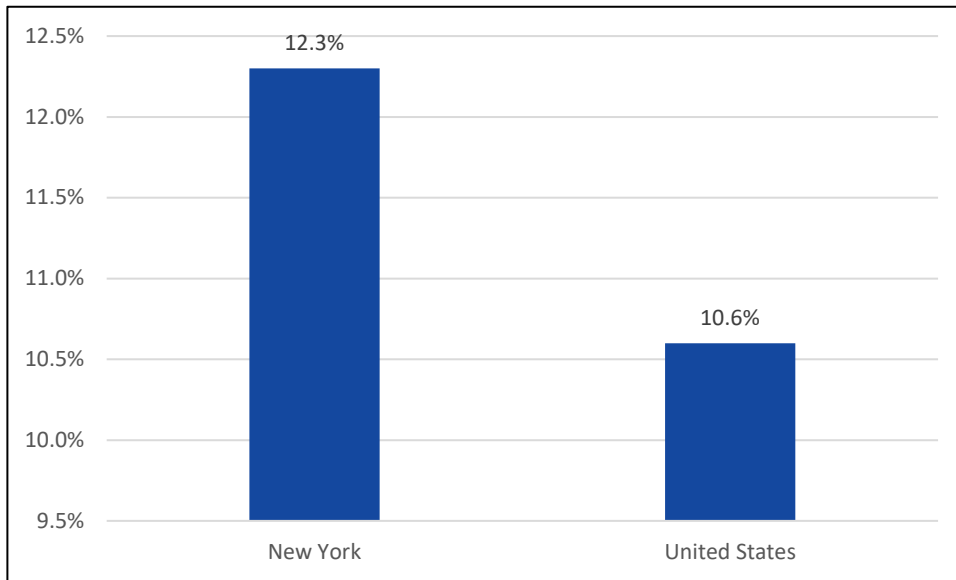
Source: US Bureau of Labor Statistics, employment projections, 2016-2026: Table 1.10: Occupational separations and openings, projected 2016-26.

IV. NEW YORK HEALTH SECTOR EMPLOYMENT

A. Total Employment

In 2016, health sector employment accounted for slightly more than 12% of total employment in New York, somewhat higher than the national level of nearly 11%. However, this rate did not include health professionals working outside the health sector, such as nurses working in educational settings or pharmacists working in settings such as retail pharmacies or supermarkets (Figure 8).

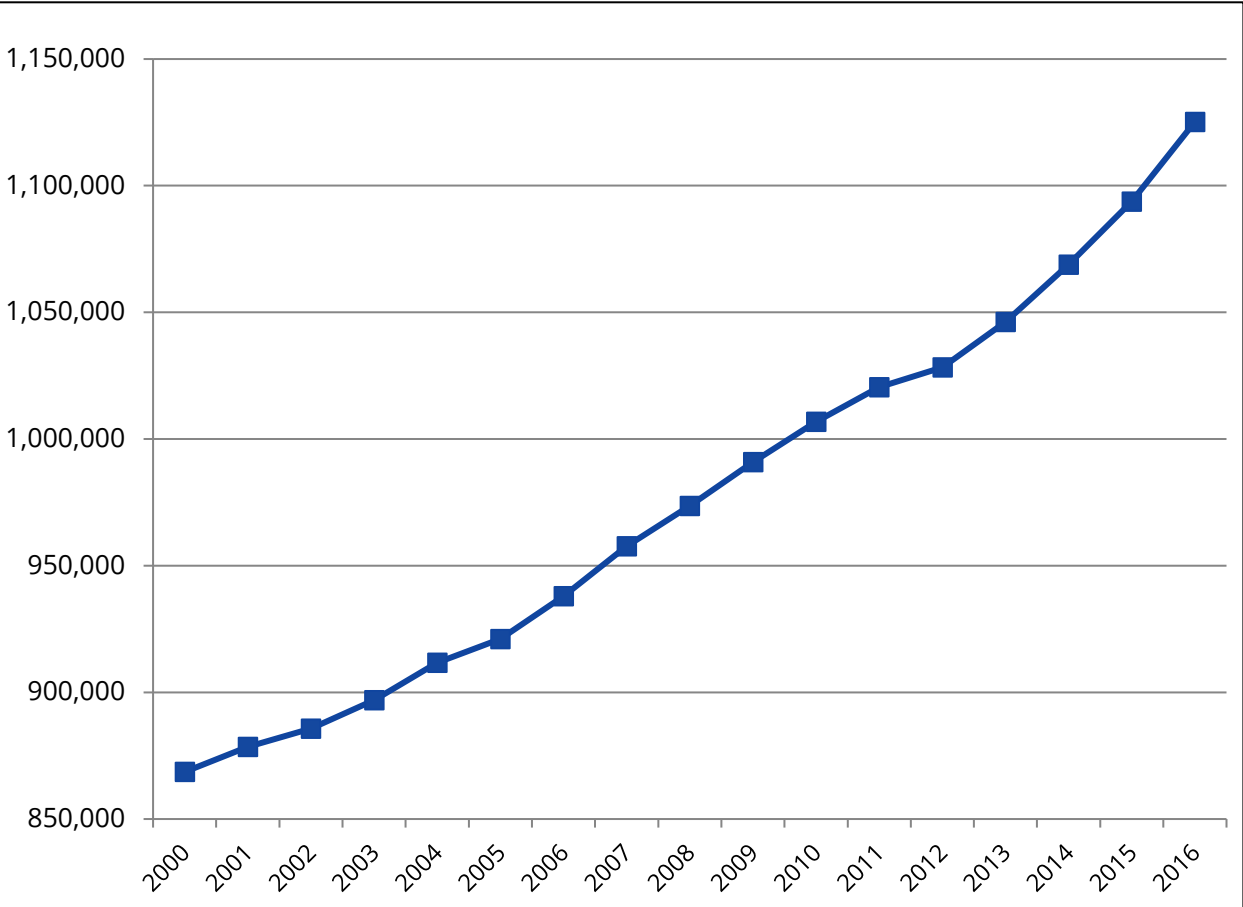
Figure 8. Health Sector Employment as a Percentage of Total Employment, 2016



Sources: US Department of Labor, Bureau of Labor Statistics. Employment Projections program: Table 1.9, 2016-2026 Industry-Occupation Matrix Data, by Industry; and Table 2.7, Employment and Output by Industry; New York State Department of Labor, ES-202.

Since 2000, health sector employment in New York State has grown rapidly, adding nearly 260,000 jobs between 2000 and 2016 (Figure 9).

Figure 9. Employment Growth in Total Health Sector Employment in New York, 2000-2016

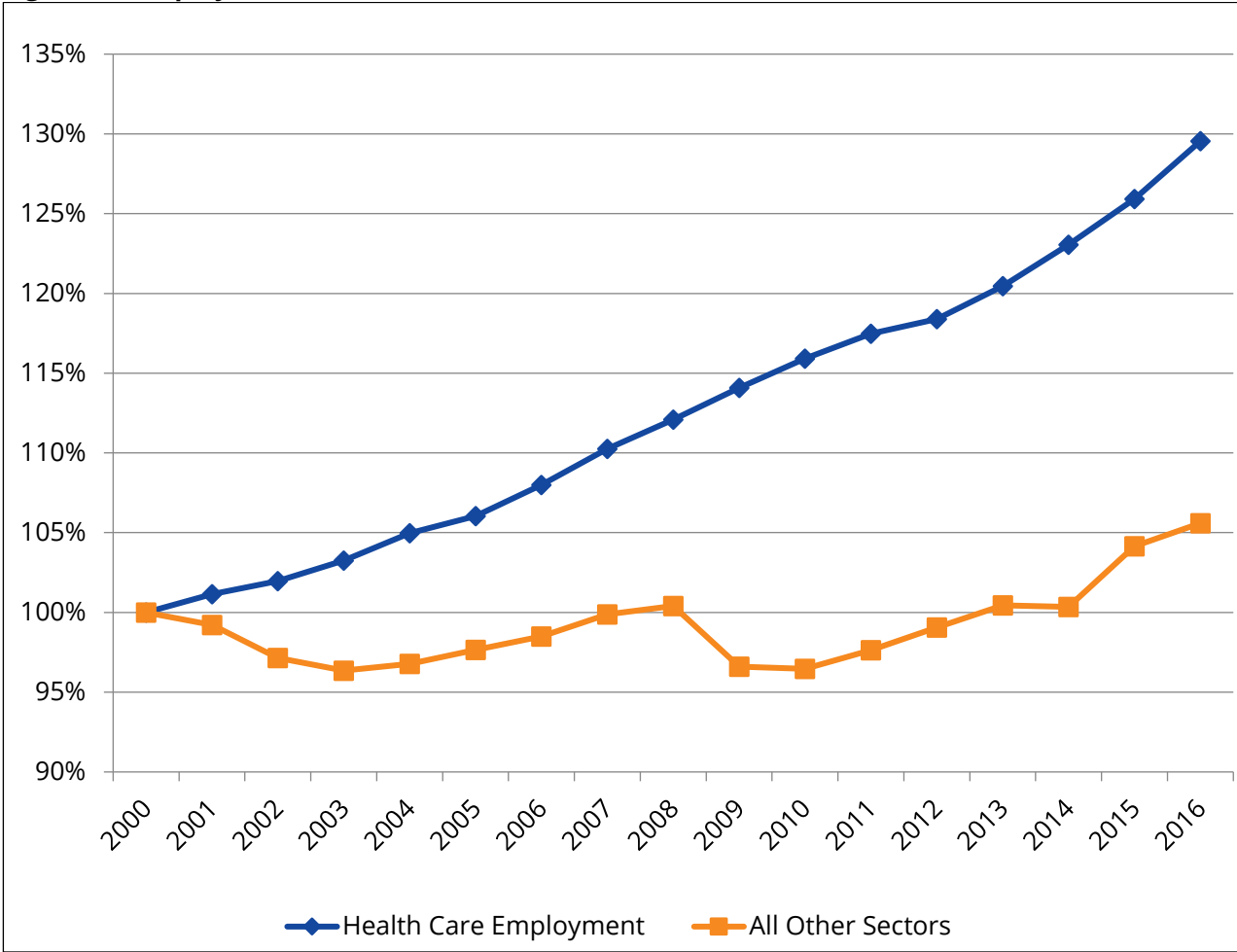


Source: New York State Department of Labor, ES-202.

Between 2000 and 2016, health care employment in New York State grew by nearly 30%. Between 2008 and 2009 employment in the health sector increased by over 17,000 jobs, or nearly 2%, while employment in all other sectors declined by nearly 300,000 jobs.

Additionally, between 2003 and 2016, employment in health care in New York State increased by nearly 16%, while employment in all other sectors only grew by 9% (Figure 10).

Figure 10. Employment Growth in New York State, 2000-2016 (Standardized to 2000)



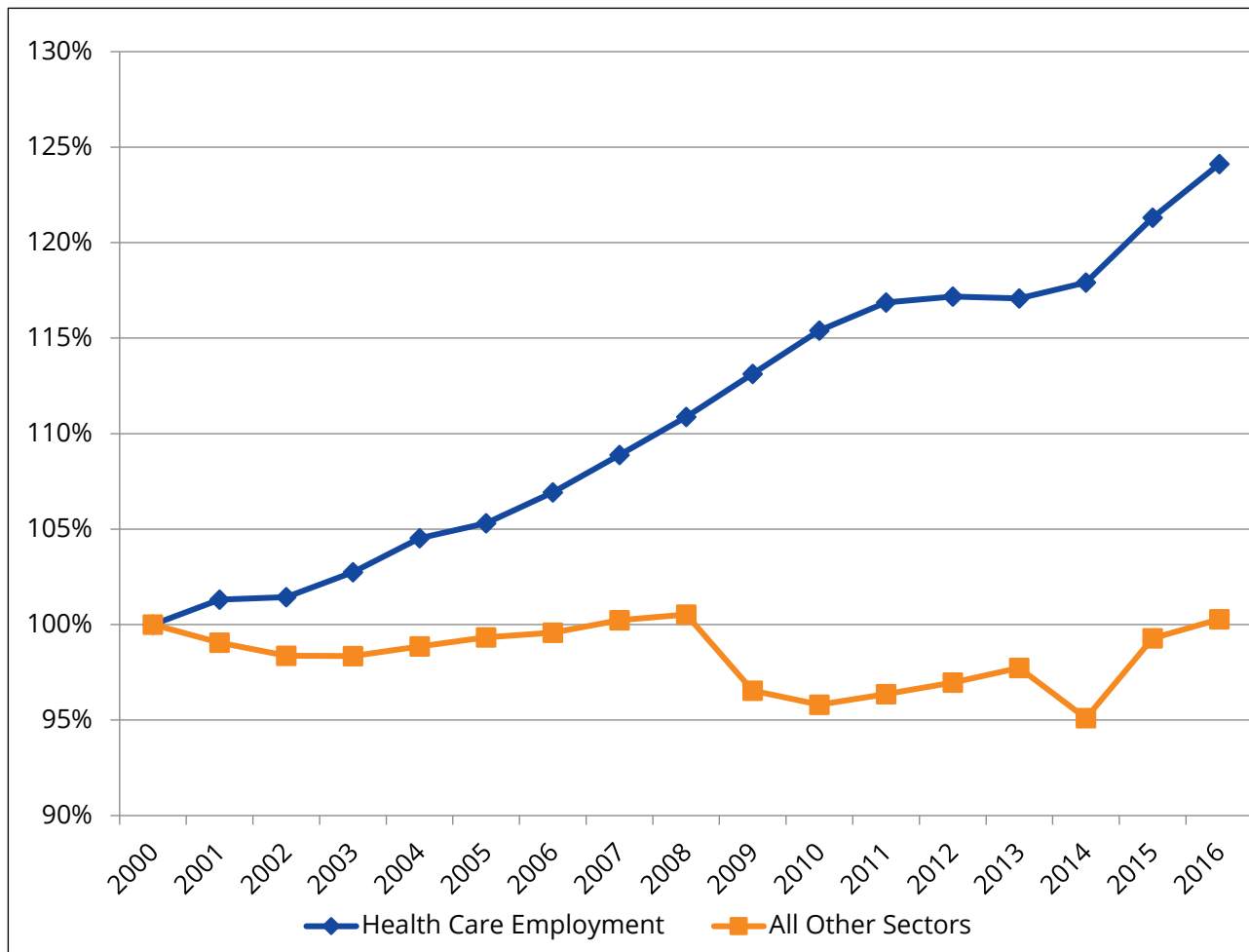
Source: New York State Department of Labor, ES-202.

Employment Growth in Regions Outside of New York City^d

The difference in growth between health care sector and non-health care sector jobs was most pronounced in regions outside of New York City. Employment in upstate New York between 2000 and 2016 in the health care sector increased by slightly over 24%. Employment outside of the health care sector increased by less than 1% during that same period.

Between 2000 and 2008, employment in non-health care sectors in upstate New York remained relatively steady, but in 2009 and again in 2014 employment dropped significantly. Since 2015, employment in health care has increased significantly (Figure 11).

Figure 11. Employment Growth in Regions Outside of New York City, 2000-2016 (Standardized to 2000)



Source: New York State Department of Labor, ES-202.

^d For New York City employment growth, please see page 53, Figure 20.

B. Population Characteristics

Health Status

From 2012 to 2014, the rate of deaths per year statewide was 750 per 100,000 total population. New York State had rates of 218 deaths due to heart disease, 181 deaths due to all cancers, and 20 deaths due to diabetes per 100,000 total population. Additionally, the rate of total hospitalizations statewide was 1,188 per 10,000 total population, while the rate of total emergency department visits was 4,076 and of preventable hospitalizations was 128 per 10,000 population. Also in 2016, 87% of people in New York State reported having a doctor(s) they considered their personal doctor and 83% reported getting a routine checkup within the past two years (Table 2).

Table 2. Selected Health Indicators in New York State

Health Indicator	Statewide	
	Number	Rate/%
Total deaths, per 100,000	442,323	750.1
Deaths due to heart disease, per 100,000	128,806	218.4
Deaths due to all cancers, per 100,000	105,645	181
Deaths due to diabetes, per 100,000	12,003	20.4
Total births, per 1,000 females aged 15 to 44	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	33,588	17.8
Low-birthweight births, as a percent of total births	56,238	7.9
Late/no prenatal care, as a percent of total births	39,555	5.6
Infant deaths, per 1,000 live births	3,403	4.8
Total hospitalizations, per 10,000	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	198,511	127.9
Adult asthma hospitalizations, per 10,000	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	34,386	27.0
Diabetes hospitalizations, per 10,000	1,401,239	237.6
CLRD hospitalizations, per 10,000	204,932	34.8
Heart disease hospitalizations, per 10,000	609,961	103.4
Total ED visits, per 10,000	24,036,192	4,076.2
One or more personal doctor(s), as percent	13,578,631	86.7
Had a checkup within the past two years, as percent	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

C. Health Sector Employment

Between 2000 and 2016, employment in New York State health sector increased by 30%. Home health care (183%) had the largest increase in employment, nearly tripling between 2000 and 2016. Ambulatory care settings also experienced substantial growth, employing about 37% more people in 2016 than were employed in 2000. In contrast, nursing homes and hospitals added significantly fewer jobs, with employment growth for these settings at 12% and 9%, respectively (Table 3).

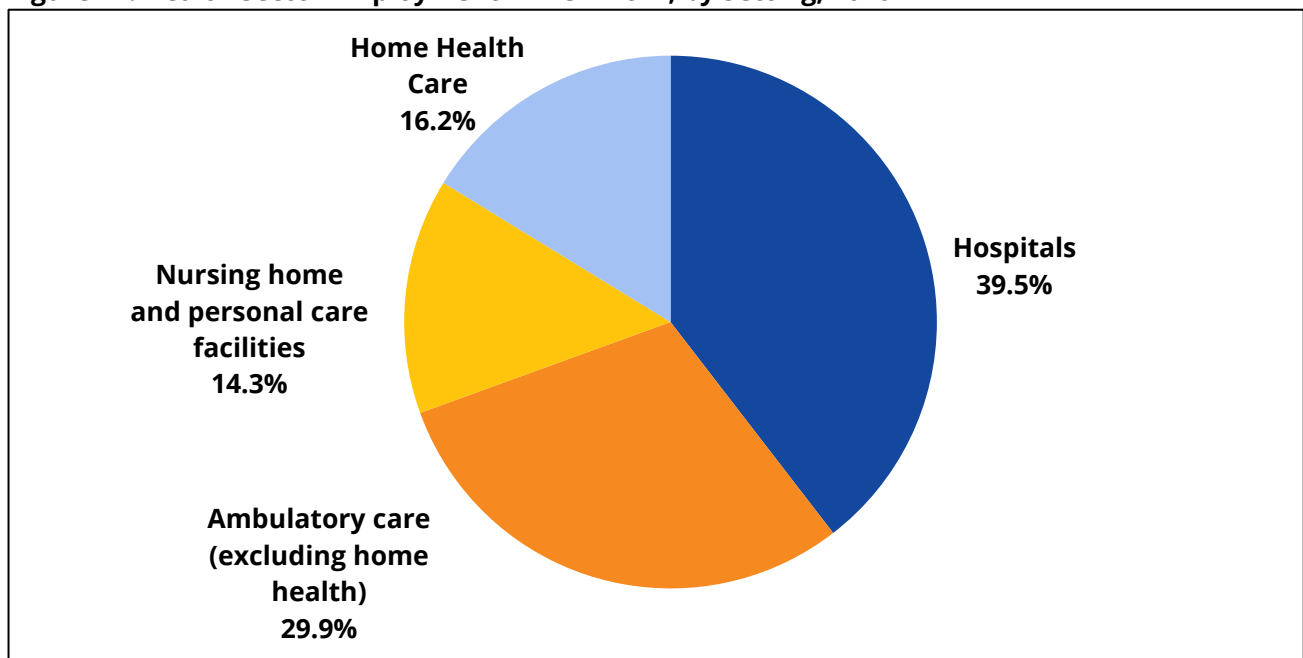
Table 3. Number of Health Care Jobs in New York State, by Setting, 2000, 2016

Setting	2000	2016	Number Change	Percent Change
Hospitals	410,300	444,974	34,674	8.5%
Ambulatory care (excluding home health)	245,600	336,586	90,986	37.0%
Nursing home and personal care facilities	143,200	160,834	17,634	12.3%
Home health care	64,600	182,845	118,245	183.0%
Total	863,700	1,125,239	261,539	30.3%

Source: New York State Department of Labor, ES-202.

Although hospitals had much smaller growth rates, they remained the most prominent employer for New York State’s health sector in 2016, employing nearly 40% of those working in the health sector. Ambulatory care comprised 30% of health sector jobs in New York, while home health care provided 16% and nursing home and personal care facilities contributed over 14% of health care jobs (Figure 12).

Figure 12. Health Sector Employment in New York, by Setting, 2016



Source: New York State Department of Labor, ES-202.

D. By Region

Health sector employment in New York State grew by 9% between 2012 and 2016. In 2016, the New York City region had nearly 511,000 health sector jobs and the Long Island region had more than 176,000 health sector jobs, increasing by 14% and 8%, respectively, during the same time period (Table 4).

Table 4. Total Health Sector Employment in New York State, by Department of Labor Region, 2012-2016

Region	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Capital District	56,097	56,459	57,226	57,919	58,613	2,516	4.5%
Central New York	38,500	38,941	39,123	39,334	40,075	1,575	4.1%
Finger Lakes	62,521	63,357	64,791	65,592	67,125	4,604	7.4%
Hudson Valley	111,528	111,702	113,251	116,098	118,275	6,747	6.0%
Long Island	163,830	164,474	165,458	170,890	176,542	12,712	7.8%
Mohawk Valley	26,861	26,905	26,247	26,659	26,816	-45	-0.2%
New York City	447,956	466,456	484,870	492,963	510,565	62,609	14.0%
North Country	17,899	17,897	18,215	18,601	18,898	999	5.6%
Southern Tier	29,081	29,089	28,650	28,816	29,062	-19	-0.1%
Western New York	70,649	70,964	71,039	71,446	72,658	2,009	2.8%
Total	1,028,317	1,046,244	1,068,870	1,093,759	1,125,239	96,922	9.4%

Source: New York State Department of Labor, ES-202.

Between 2010 and 2016, the number of health care jobs per 100,000 across the state increased by nearly 9%. The Long Island region had the highest number of health care jobs per capita in 2016 with 6,186 jobs per 100,000 total population, followed by New York City with 5,980 jobs per capita (Table 5).

The North Country had the lowest number of health care jobs per 100,000 total population (4,446), followed by the Southern Tier (4,510) (Table 5).

Table 5. Total Employment and Health Sector Employment in New York State, by Department of Labor Region, 2010 and 2016

Region	2010		2016	
	Jobs per 100,000 Population	% of Jobs in Health Care	Jobs per 100,000 Population	% of Jobs in Health Care
Capital District	5,052.0	11.1%	5,400.2	11.2%
Central New York	4,683.8	11.0%	5,121.8	11.7%
Finger Lakes	5,011.6	11.4%	5,534.1	12.1%
Hudson Valley	4,825.5	12.9%	5,080.7	13.0%
Long Island	5,697.2	13.6%	6,185.6	13.9%
Mohawk Valley	5,437.3	14.2%	5,491.5	14.2%
New York City	5,324.2	12.1%	5,980.1	12.3%
North Country	4,054.5	11.6%	4,446.2	12.5%
Southern Tier	4,354.4	10.9%	4,509.7	11.2%
Western New York	5,105.2	11.7%	5,238.3	11.5%
Total	5,195.5	12.3%	5,698.8	12.3%

Source: New York State Department of Labor, ES-202; US Census Bureau.

Hospital Employment

Between 2012 and 2016, hospital employment in New York State increased by more than 12,000 jobs, or nearly 3%.^e The Finger Lakes region experienced the largest percentage increase in hospital employment (9%) during the same time period, followed by the Long Island region (8%) and Hudson Valley regions (6%) (Table 6). The Long Island region experienced the largest growth in the number of new hospital jobs, with slightly more than 5,000 new jobs, followed by the Finger Lakes region with an increase of nearly 2,600 hospital jobs. The Central New York, Mohawk Valley, Southern Tier, and Western New York regions all experienced small declines in the number of hospital jobs between 2012 and 2016.

Table 6. Hospital Employment in New York State, by Department of Labor Region, 2012-2016

Region	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Capital District	23,796	23,902	23,552	23,887	24,365	569	2.4%
Central New York	13,781	13,869	13,715	13,708	13,755	-26	-0.2%
Finger Lakes	29,436	29,546	30,406	30,977	32,027	2,591	8.8%
Hudson Valley	38,351	37,400	38,157	39,297	40,633	2,282	6.0%
Long Island	62,754	62,687	61,907	64,447	67,833	5,079	8.1%
Mohawk Valley	12,153	12,069	11,435	11,585	11,667	-486	-4.0%
New York City	202,774	205,813	209,677	203,259	205,350	2,576	1.3%
North Country	9,251	8,982	8,957	9,216	9,438	187	2.0%
Southern Tier	13,659	13,694	13,396	13,408	13,505	-154	-1.1%
Western New York	26,800	26,717	26,153	26,322	26,376	-424	-1.6%
Total	432,758	434,685	437,346	436,129	444,974	12,216	2.8%

Source: New York State Department of Labor, ES-202.

^e Recent layoffs, closures, or mergers are not reflected in these numbers, either at the state or regional levels.

Ambulatory Care

Employment in ambulatory care settings (excluding home health care) increased by nearly 7% between 2012 and 2016, adding more than 28,000 jobs (Table 7). The number of ambulatory care jobs in New York City increased by nearly 15,000 between 2012 and 2016, followed by the Long Island and Hudson Valley regions.

Table 7. Ambulatory Care Services Employment (Excluding Home Health Care) in New York State, by Department of Labor Region, 2012-2016

Region	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Capital District	17,735	18,264	19,118	19,476	19,866	2,131	11.0%
Central New York	14,125	14,337	14,677	14,690	15,313	1,188	9.4%
Finger Lakes	16,536	17,225	17,497	17,067	16,863	327	6.3%
Hudson Valley	42,068	42,774	42,939	44,305	44,693	2,625	5.6%
Long Island	62,528	63,485	63,968	65,305	65,861	3,333	4.2%
Mohawk Valley	6,757	6,753	6,755	6,823	6,845	88	1.6%
New York City	109,951	112,658	117,446	121,245	124,832	14,881	11.4%
North Country	5,180	5,286	5,358	5,559	5,637	457	5.0%
Southern Tier	7,586	7,591	7,572	7,697	7,728	142	-1.7%
Western New York	22,958	23,478	24,140	24,448	25,421	2,463	3.3%
Total	308,334	311,851	319,470	329,875	336,586	28,252	6.8%

Source: New York State Department of Labor, ES-202.

Nursing and Personal Care Facility Employment

Employment in nursing and personal care facilities^f in New York State remained relatively stable between 2012 and 2016 (Table 8). Five regions had small decreases in nursing and personal care facility employment (Capital District, Long Island, New York City, Southern Tier, and Western NY), while five regions had increases in employment (Central New York, Finger Lakes, Hudson Valley, Mohawk Valley, and North Country). The Finger Lakes region had the largest increase in nursing and personal care facility employment (940), while the New York City region experienced the largest decrease in employment (1,260).

Table 8. Nursing and Personal Care Facility Employment in New York State, by Department of Labor Region, 2012-2016

Region	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Capital District	11,413	11,132	11,167	11,278	11,203	-210	-1.8%
Central New York	8,765	8,623	8,589	8,833	8,909	144	1.6%
Finger Lakes	12,817	13,059	13,299	13,624	13,757	940	7.3%
Hudson Valley	20,767	20,746	21,118	21,325	21,102	335	1.6%
Long Island	23,918	22,722	22,934	23,111	23,681	-237	-1.0%
Mohawk Valley	6,555	6,693	6,692	6,881	6,834	279	4.3%
New York City	51,182	51,102	50,742	50,184	49,922	-1,260	-2.5%
North Country	2,937	3,040	3,063	3,023	3,019	82	2.8%
Southern Tier	6,706	6,665	6,621	6,631	6,692	-14	-0.2%
Western New York	15,618	15,436	15,594	15,543	15,506	-112	-0.7%
Total	160,811	159,218	159,819	160,636	160,834	23	0.0%

Source: New York State Department of Labor, ES-202.

^f Includes nursing care facilities and community care facilities for the elderly but excludes residential mental retardation, mental health and substance abuse facilities, and other residential care facilities.

Home Health Care

Between 2012 and 2016, employment in home health care in New York State grew by more than 56,000 jobs, with the New York City region accounting for the vast majority of the increase (Table 9). Jobs in home health care in New York City grew more than 55%, adding over 46,000 jobs. Outside of New York City, the Long Island region experienced the next largest increase in home health care employment, growing by more than 4,500 jobs between 2012 and 2016, or 31%. Employment in home health care agencies remained relatively stable in the Capital District, Mohawk Valley, Southern Tier, and Western New York regions.

Table 9. Home Health Care Employment in New York State, by Department of Labor Region, 2012-2016

Region	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Capital District	3,154	3,161	3,419	3,278	3,179	25	0.8%
Central New York	1,829	2,112	2,142	2,103	2,098	269	14.7%
Finger Lakes	3,732	3,527	3,589	3,924	4,478	746	20.0%
Hudson Valley	10,343	10,782	11,037	11,171	11,847	1,504	14.5%
Long Island	14,630	15,580	16,649	18,027	19,167	4,537	31.0%
Mohawk Valley	1,396	1,390	1,365	1,370	1,470	74	5.3%
New York City	84,049	96,883	107,005	118,275	130,461	46,412	55.2%
North Country	531	589	837	803	804	273	51.4%
Southern Tier	1,131	1,139	1,061	1,080	1,137	6	0.5%
Western New York	5,272	5,333	5,152	5,133	5,355	83	1.6%
Total	126,413	140,496	152,256	167,119	182,845	56,432	44.6%

Source: New York State Department of Labor, ES-202.

E. By Occupation

1. Current Employment Data

Changes in the number of health care jobs in New York State varied by occupation. Although this represents position and not individuals or full-time equivalents (FTEs), it is useful in identifying trends in occupations and job titles. Notable changes between 2013 and the first quarter of 2017 included:

- The number of home health aide jobs increased by 45,350, or 26%.
- The number of personal care aide jobs grew by 20,680, or by 13%
- The number of RN jobs grew slightly increasing by 10,910, or 6%.
- The number of nurse practitioner jobs increased by 3,450, or 26%.
- The number of licensed practical nurse jobs decreased by 2,060, or 4% (Table 10).

Average wages per hour in selected health occupations for New York State are represented in Table 11. These wages are based on 2013-2016 Occupational Wages survey data, which was adjusted to include the first quarter of 2017. Certified registered nurse anesthetists earned the highest average hourly wage in 2017 (\$82.40), followed by medical and health service managers (\$66.57), pharmacists (\$57.79), and nurse practitioners (\$55.75). Personal care aides and home health aides were the lowest wage earners (\$12.60 and \$11.93, respectively). The largest range between entry-level wage versus experienced level wage was for medical and health services managers (\$41.46), followed by speech-language pathologists (\$24.63) and pharmacists (\$21.27).

Table 10. Number of Jobs in Selected Health Occupations in New York State, 2013-2017

Occupation	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Registered Nurses	169,820	169,560	171,880	171,880	180,730	10,910	6.0%
Personal Care Aides	136,140	142,220	162,240	162,240	156,820	20,680	13.2%
Home Health Aides	128,480	146,550	162,240	162,240	173,830	45,350	26.1%
Nursing Assistants	99,820	101,030	98,500	98,500	98,040	-1,780	-1.8%
Social Workers	52,520	54,500	53,900	53,900	54,360	1,840	3.4%
Licensed Practical Nurses	49,050	47,550	47,380	47,380	46,990	-2,060	-4.4%
Medical and Health Services Managers	27,530	27,840	26,810	26,810	26,010	-1,520	-5.8%
Medical Assistants	23,170	23,780	23,970	23,970	23,860	690	2.9%
Pharmacists	19,060	18,870	18,770	18,770	20,430	1,370	6.7%
Dental Assistants	17,970	18,700	19,580	19,580	20,040	2,070	10.3%
Pharmacy Technicians	16,770	16,580	17,720	17,720	17,660	890	5.0%
Physical Therapists	14,170	15,310	15,970	15,970	16,390	2,220	13.5%
Radiologic Technologists and Technicians	12,660	13,190	13,310	13,310	12,990	330	2.5%
Medical Secretaries	10,790	11,480	12,020	12,020	11,720	930	7.9%
Speech-Language Pathologists	10,280	9,950	10,170	10,170	11,360	1,080	9.5%
Medical and Clinical Laboratory Technicians	9,850	7,580	7,440	7,440	7,740	-2,110	-27.3%
Dental Hygienists	9,850	9,960	10,760	10,760	10,750	900	8.4%
Medical & Clinical Laboratory Technologists	9,830	9,600	9,640	9,640	10,380	550	5.3%
Physician Assistant	9,780	10,410	11,760	11,760	12,070	2,290	19.0%
Nurse Practitioners	9,610	10,310	11,260	11,260	13,060	3,450	26.4%
Medical Records and Health Info Techs	8,850	8,580	8,680	8,680	8,800	-50	-0.6%
Occupational Therapists	8,710	9,160	8,680	8,680	8,140	-570	-7.0%
Physical Therapist Assistants/Aides	7,050	7,470	7,860	7,860	6,680	-370	-5.5%
Respiratory Therapists	5,980	6,000	5,830	5,830	5,840	-140	-2.4%
Surgical Technologists	4,980	5,080	5,180	5,180	5,560	580	10.4%
Dietitians and Nutritionists	4,330	4,520	4,700	4,700	4,960	630	12.7%
Orderlies	3,850	4,980	4,390	4,390	4,800	950	19.8%
Cardiovascular Technologists & Technicians	2,710	2,690	2,950	2,950	3,110	400	12.9%
Occupational Therapy Assistants/Aides	2,400	2,470	2,770	2,770	2,700	300	11.1%
Certified Registered Nurse Anesthetists	1,580	1,430	1,700	1,700	1,230	-350	-28.5%
Nuclear Medicine Technologists	1,190	1,330	1,230	1,230	1,260	70	5.6%
Dietetic Technicians	790	840	840	840	930	140	15.1%
Nurse Midwives	490	450	420	420	480	-10	-2.1%

Source: US Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics.

Table 11. Average Hourly Wage in Selected Health Occupations in New York State, 2017

Occupation	Average Wage per Hour	Entry Wage	Experienced Wage	Range of Experienced Versus Entry Wage
Certified Registered Nurse Anesthetists	\$82.40	\$68.37	\$89.42	\$21.05
Medical and Health Services Managers	\$66.57	\$38.93	\$80.39	\$41.46
Pharmacists	\$57.79	\$43.05	\$65.17	\$22.12
Nurse Practitioners	\$55.75	\$40.80	\$63.23	\$22.43
Physician Assistants	\$52.13	\$41.11	\$57.64	\$16.53
Nurse Midwives	\$49.28	\$39.99	\$53.93	\$13.95
Radiation Therapists	\$44.13	\$28.93	\$51.74	\$22.81
Speech-Language Pathologists	\$43.09	\$26.67	\$51.30	\$24.63
Occupational Therapists	\$42.32	\$28.66	\$49.14	\$20.49
Physical Therapists	\$41.73	\$30.47	\$47.36	\$16.88
Nuclear Medicine Technologists	\$40.18	\$32.13	\$44.21	\$12.09
Registered Nurses	\$39.36	\$27.98	\$45.05	\$17.08
Dental Hygienists	\$36.90	\$27.39	\$41.66	\$14.27
Respiratory Therapists	\$34.62	\$27.37	\$38.24	\$10.87
Medical and Clinical Laboratory Technologists	\$33.06	\$25.66	\$36.76	\$11.11
Radiologic Technologists and Technicians	\$32.80	\$24.07	\$37.17	\$13.11
Dietitians and Nutritionists	\$31.60	\$23.35	\$35.72	\$12.38
Cardiovascular Technologists and Technicians	\$29.17	\$18.97	\$34.26	\$15.30
Social Workers	\$28.98	\$20.02	\$33.46	\$13.44
Occupational Therapy Assistants	\$28.63	\$20.83	\$32.54	\$11.71
Physical Therapist Assistants	\$26.40	\$19.59	\$29.81	\$10.22
Surgical Technologists	\$25.50	\$18.37	\$29.06	\$10.69
Medical and Clinical Laboratory Technicians	\$23.59	\$15.34	\$27.71	\$12.37
Licensed Practical Nurses	\$22.96	\$17.36	\$25.75	\$8.40
Medical Records and Health Information Technicians	\$21.94	\$15.04	\$25.38	\$10.35
Mental Health Counselors	\$20.50	\$13.33	\$24.08	\$10.75
Dietetic Technicians	\$20.03	\$14.72	\$22.70	\$7.98
Medical Secretaries	\$19.32	\$13.91	\$22.02	\$8.12
Dental Assistants	\$17.99	\$12.20	\$20.88	\$8.69
Orderlies	\$17.60	\$12.75	\$20.03	\$7.28
Medical Assistants	\$17.54	\$13.13	\$19.75	\$6.62
Occupational Therapy Aides	\$17.14	\$11.46	\$19.98	\$8.51
Nursing Assistants	\$16.94	\$12.71	\$19.05	\$6.34
Pharmacy Technicians	\$15.69	\$10.88	\$18.10	\$7.22
Pharmacy Aides	\$14.78	\$10.39	\$16.97	\$6.58
Physical Therapist Aides	\$13.93	\$10.74	\$15.53	\$4.79
Personal Care Aides	\$12.60	\$10.69	\$13.55	\$2.86
Home Health Aides	\$11.93	\$10.62	\$12.58	\$1.97

Source: New York State Department of Labor, Labor Statistics, Occupational Wages.

2. Licensure Data for Selected Health Professions in New York State

Between 2013 and 2017, the number of licensed RNs in New York State increased by nearly 9,800, or by 4%. Nurse practitioners had the largest percentage increase, growing by 22% during the same period. The number of physician assistants grew by 21% between 2013 and 2017. In contrast, the number of clinical laboratory technicians and clinical laboratory technologists saw decreases of 7% and 2%, respectively, during the same period (Table 12).

Table 12. Number of Licensed Individuals in Selected Health Occupations in New York State, 2013-2017ⁱ

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Nurse Practitioners	16,210	16,687	17,690	18,698	19,825	3,615	22.3%
Physician Assistants	10,240	10,580	11,298	11,772	12,420	2,180	21.3%
Occupational Therapists	10,015	10,347	10,787	11,071	11,493	1,478	14.8%
Dental Assistants	1,213	1,239	1,324	1,363	1,391	178	14.7%
Speech-Language Pathologists	15,112	15,400	15,975	16,274	16,837	1,725	11.4%
Physical Therapy Assistants	4,750	4,863	5,061	5,125	5,219	469	9.9%
Respiratory Therapists	5,273	5,419	5,571	5,501	5,684	411	7.8%
Physical Therapists	16,781	16,892	17,430	17,749	18,075	1,294	7.7%
Dental Hygienists	9,603	9,666	9,926	10,025	10,141	538	5.6%
Social Workers	48,856	49,691	51,897	51,340	51,481	2,625	5.4%
Pharmacists	19,178	191,265	19,697	20,180	20,191	1,013	5.3%
Dietitian/Nutritionists	4,902	4,929	5,111	5,162	5,139	237	4.8%
Registered Nurses	225,148	224,559	230,555	232,737	234,940	9,792	4.3%
Occupational Therapy Assistants	3,696	3,643	3,706	3,638	3,759	63	1.7%
Licensed Practical Nurses	65,654	66,325	67,686	64,428	64,801	-853	-1.3%
Clinical Laboratory Technologists	12,453	12,610	12,738	12,064	12,160	-293	-2.4%
Clinical Laboratory Technicians	1,792	1,802	1,804	1,647	1,670	-122	-6.8%
TOTAL	470,876	473,777	488,256	488,774	495,226	24,350	5.2%

Source: New York State Education Department, Office of the Professions.

ⁱThis total includes all New York licensed individuals regardless of whether the address given in the licensure file was a New York address, whereas tables of licensees by region include only those individuals with an address in the region.

F. Primary Care Physicians

There were nearly 24,000 primary care physicians practicing in New York State (Table 13). Forty-six percent (46%) of primary care physicians were in general internal medicine, 21% were in family and general practice, and 22% were in general pediatrics. There were 66.7 obstetricians/gynecologists (Ob/Gyns) per 100,000 women ages 15 to 44. In addition, there were 120.1 general pediatricians per 100,000 for children, birth to 17 years of age. There were over 6,100 psychiatrists, including child and adolescent psychiatrists, practicing in New York State, or approximately 31 per 100,000 population.

Table 13. Primary Care Physicians and Psychiatrists in New York, by Specialty, 2017

Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	4,967	25.2
Internal Medicine (General)	10,938	55.6
Subtotal	15,905	80.8
Obstetrics/Gynecology	2,697	66.7
Pediatrics (General)	5,106	120.1
Primary Care Total	23,708	N/A
Psychiatrist	6,124	31.1

^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies.

While the statewide supply of primary care physicians and psychiatrists appears to be sufficient, it is widely recognized that these providers are unevenly distributed across regions, within regions at the county level, and at sub-county levels. The maldistribution of providers limits access to care for underserved populations. As of December 2017, New York State had over 5.8 million individuals living in primary care health professional shortage areas (HPSAs), 2.7 million individuals in dental care HPSAs, and over 4.4 million in mental health (HPSAs).ⁱ

The New York City region had the highest rate of primary care physicians (family/general practice, internal medicine, Ob/Gyn, and pediatrics) with 122.5 per 100,000 population, while the North Country had the lowest (78.0 per 100,000). The region with the highest share of obstetrics/gynecology physicians was the Long Island region with 94.1 per 100,000, and the Southern Tier region had the least (41.4 per 100,000). The Long Island region also had the highest share of general pediatric physicians with 151.0 per 100,000 and the North Country had the least (39.0 per 100,000). Additionally, the New York City region had the most psychiatrists (41.9 per 100,000), while the North Country region and the Mohawk Valley had the least (11.3 per 100,000 and 10.9 per 100,000, respectively) (Figure 13, and Table 14.)

ⁱ <https://datawarehouse.hrsa.gov/tools/quickreports.aspx>

Figure 13. Number of Selected Primary Care Physicians per 100,000 Population in New York State, by Region, 2017

Legend

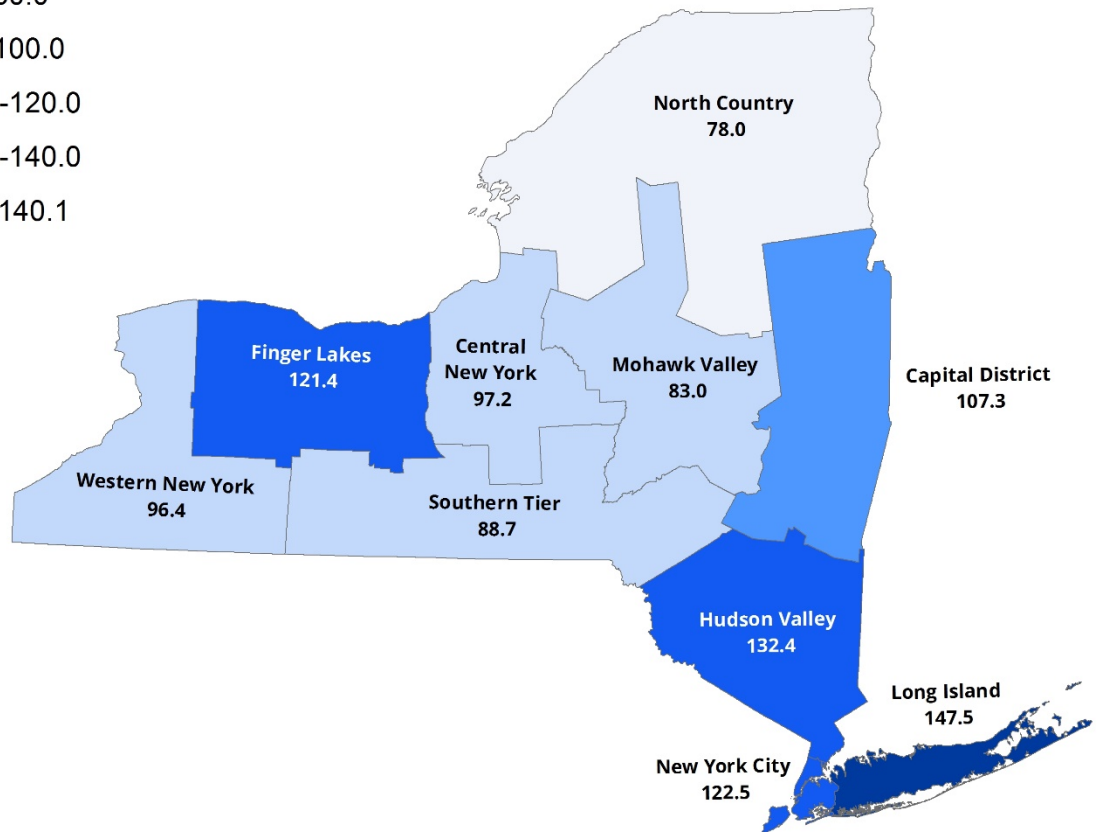
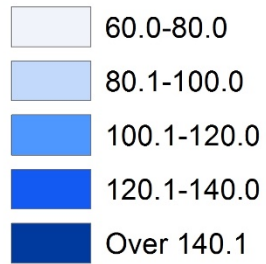


Table 14. Primary Care Physicians and Psychiatrists per 100,000 Population in New York State, by Region, 2017

Region	Family/General Practice and Internal Medicine (General)		Obstetrics/ Gynecology		Pediatrics (General)		Psychiatry	
	Counts	Per 100,000 Population	Counts	Per 100,000 Population ^a	Counts	Per 100,000 Population ^a	Counts	Per 100,000 Population
Capital District	841	77.6	118	57.0	204	92.9	203	18.7
Central New York	545	69.0	84	54.1	139	81.1	131	16.6
Finger Lakes	1063	87.2	144	61.6	273	104.5	202	16.6
Hudson Valley	1968	84.9	353	82.0	747	136.9	877	37.8
Long Island	2747	96.2	495	94.1	971	151.0	826	28.9
Mohawk Valley	316	63.8	40	44.7	55	53.3	54	10.9
New York City	6767	80.3	1218	63.0	2337	130.4	3528	41.9
North Country	265	61.0	38	47.5	36	39.0	49	11.3
Southern Tier	457	69.9	52	41.4	71	54.2	92	14.1
Western New York	943	67.6	155	59.0	247	84.4	165	11.8

^a The obstetrics/gynecology rate is per 100,000 women aged 15 to 44. The pediatrics rate is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

G. Graduations by Occupation

Graduations for selected health occupations from school years 2012 through 2016 for New York State education programs are reported in Table 15. The number of RN graduations increased by over 1,200 between 2012 and 2016, followed by nurse practitioners and clinical nurse specialists and medical and health service managers.

Table 15. Number of Graduations in Selected Health Occupations in New York State, 2012-2016

Occupation	School Year					Change 2012-2016	
	2012	2013	2014	2015	2016	Number	Percent
Registered Nurses	11,249	11,318	11,424	12,229	12,504	1,255	11.2%
Nurse Practitioners/Clinical Nurse Specialists	518	741	1,092	1,253	1,193	675	130.3%
Medical and Health Service Managers	317	377	438	522	643	326	102.8%
Social Workers	3,423	3,624	3,450	3,594	3,709	286	8.4%
Physical Therapists	880	962	1,097	1,147	1,121	241	27.4%
Pharmacists	820	913	948	996	996	176	21.5%
Physician Assistants	868	883	900	980	1,043	175	20.2%
Medical Secretaries	537	610	629	709	699	162	30.2%
Speech-Language Pathologists	266	319	376	453	425	159	59.8%
Dietitians and Nutritionists	135	157	175	222	291	156	115.6%
Surgical Technologists	171	190	270	294	279	108	63.2%
Occupational Therapists	565	578	581	574	670	105	18.6%
Dental Assistants	360	412	413	428	461	101	28.1%
Medical and Clinical Laboratory Technologists	178	224	266	278	271	93	52.2%
Nursing Assistants	888	1,174	1,049	1,371	969	81	9.1%
Dental Hygienists	391	429	378	420	459	68	17.4%
Occupational Therapy Assistants/Aides	209	247	231	208	262	53	25.4%
Dietetic Technicians	18	30	34	47	57	39	216.7%
Medical Records and Health Info Techs	371	446	466	417	392	21	5.7%
Physical Therapy Assistants/Aides	236	219	219	263	251	15	6.4%
Nuclear Medicine Technologists	20	16	17	22	24	4	20.0%
Medical and Clinical Laboratory Technicians	105	110	126	122	104	-1	-1.0%
Certified Registered Nurse Anesthetists	31	41	48	46	30	-1	-3.2%
Respiratory Therapists	210	226	220	219	176	-34	-16.2%
Cardiovascular Technologists & Technicians	135	120	138	106	52	-83	-61.5%
Radiologic Technologists	243	265	157	145	130	-113	-46.5%
Pharmacy Technicians	706	746	465	554	486	-220	-31.2%
Licensed Practical Nurses	3,232	3,444	3,199	3,300	2,798	-434	-13.4%
Medical Assistants	6,999	7,133	6,308	5,482	5,474	-1,525	-21.8%
Nurse Midwives	N/A	N/A	32	27	18	N/A	N/A

Source: Integrated Postsecondary Education Data System

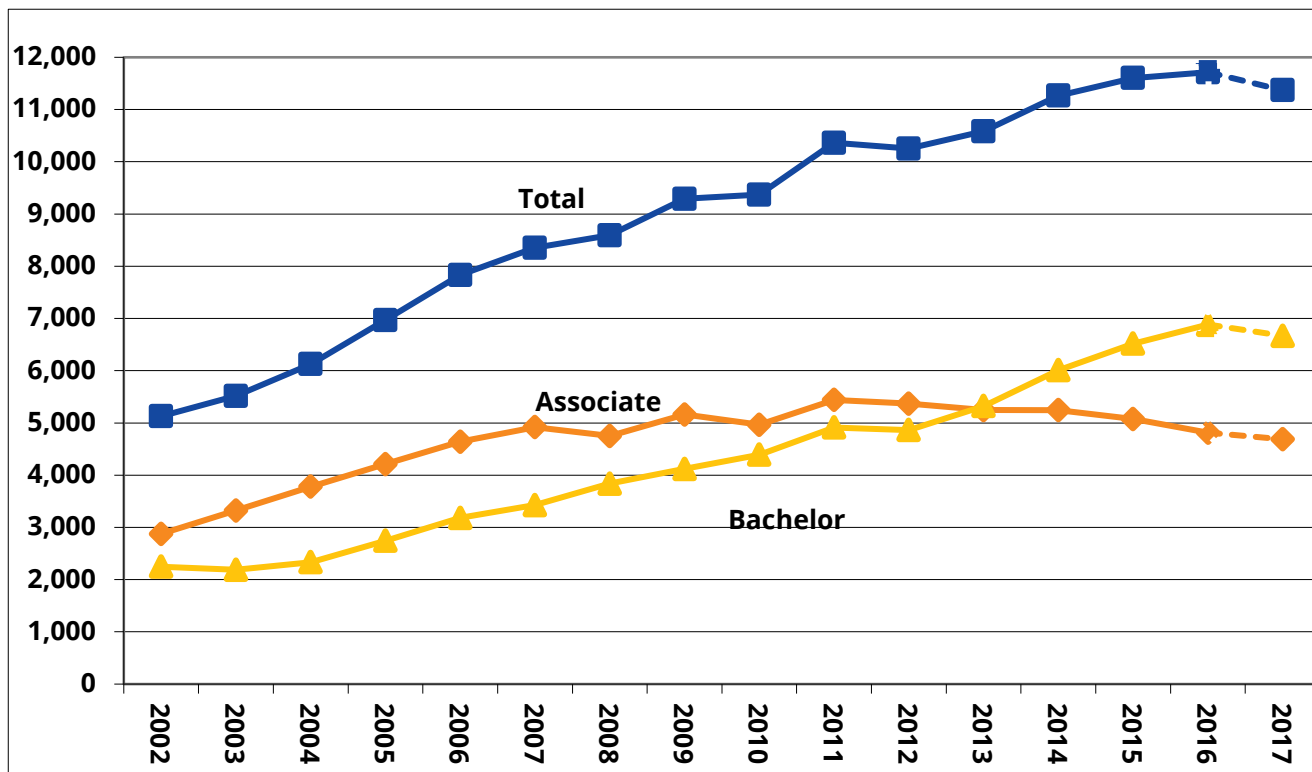
H. Trends in New York RN Education, 2002-2017

Every year, CHWS surveys the state’s RN education program deans and directors to monitor the production of RNs in the state. The most recent survey was conducted in the spring and fall of 2017 and included questions about applications and acceptances to the nursing program, the number of graduations between 2014 and 2017, and perspectives on the local job market for new graduates. Of the 122 programs eligible to participate in the survey, 112 responded for a 92% response rate.

Key findings of this report include:

- **Between 2002 and 2016, RN graduations in New York State grew steadily (except for a small decline in 2012) (Figure 14).**
- **After four years of growth, the number of RN graduations in New York State declined between 2016 and 2017, with graduations from both ADN and BSN programs declining by 3% each. (Figure 14).**

Figure 14. RN Graduations in New York, by Degree Type, 2002-2017



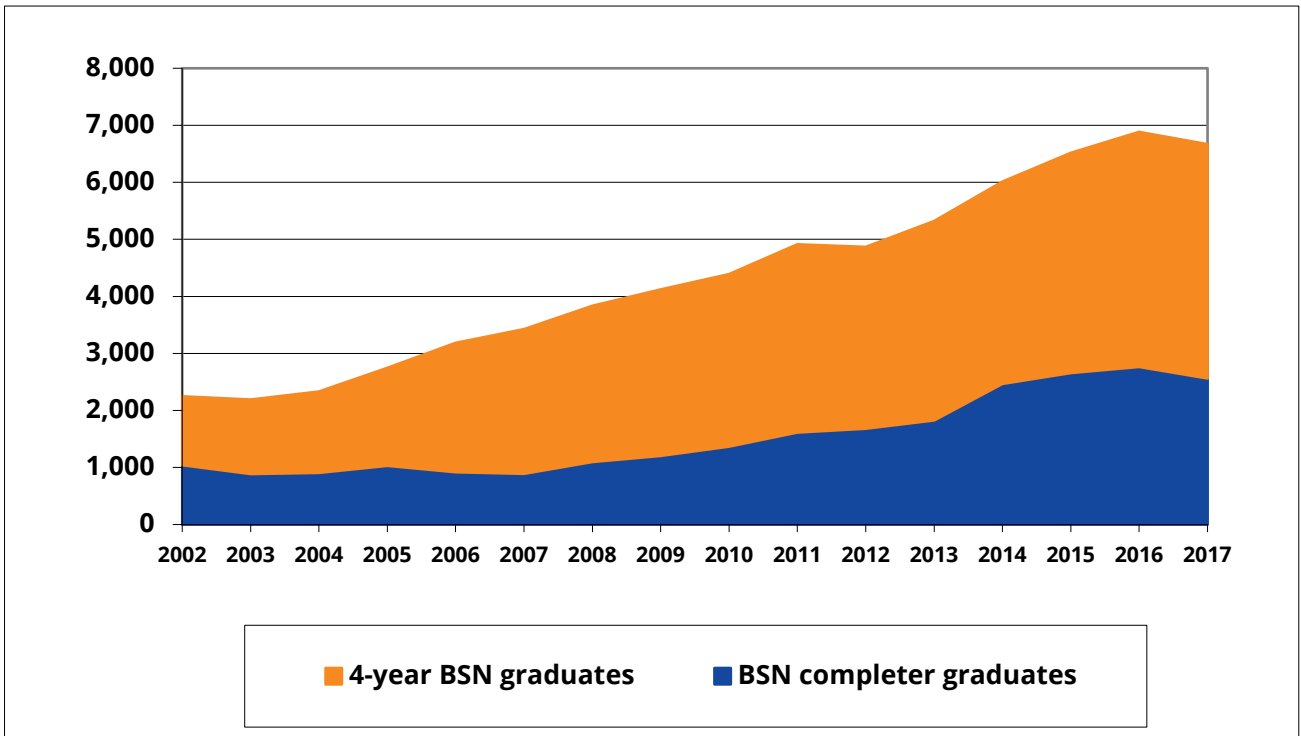
Source: Center for Health Workforce Studies.

Other key findings include:

- **RN graduations in Long Island and New York City region declined the most between 2016 and 2017.**

- **BSN completers as a percentage of total graduations and of BSN graduations declined between 2016 and 2017, with about 200 fewer BSN completer graduations in 2017 compared to 2016. BSN completers represent 23% of total graduations and 38% of BSN Graduations in 2017 (Figure 15).**

Figure 15. Graduations from BSN 4-year and BSN Completer Programs, 2002-2017



Source: Center for Health Workforce Studies.

- **Nearly three-quarters of nursing program deans and directors reported no change in the number of acceptances to their programs in 2017 compared to 2016.**
- **The job market for newly trained RNs appears to be improving, with 75% of deans and directors reporting “many jobs” for newly trained RNs in 2017, a substantial increase over the previous for years.**

For more information on RN graduations in New York State, please refer to *the Trends in New York Registered Nurse Graduations in 2002-2017* at <http://chwsny.org>.

I. Demand for Workers

CHWS, in conjunction with statewide and regional provider organizations, conducts annual surveys of human resources directors of FQHCs, PPSs, home health agencies, hospitals, and nursing homes throughout New York. In addition, the surveys ask about the professions and occupations that pose the greatest recruitment and retention challenges. Respondents rated difficulty of recruitment and retention using a Likert scale, where 1 represented “not at all difficult” or “no turnover” and 5 indicated “extremely difficult” or “extreme turnover.” To conduct these surveys, CHWS collaborated with the following provider organizations:

- Community Health Center Association of New York State
- Healthcare Association of New York State
- Home Care Association of New York State, Inc.
- LeadingAge New York
- New York State Association of Healthcare Providers, Inc.

Findings from these surveys are reported statewide and by NYSDOL regions. In instances where total responses for a region by setting were less than 5, no information was provided or contiguous regions were combined.

1. Hospitals

In 2017, approximately 36 hospitals statewide or approximately 15% responded to the survey. Hospitals reported the most difficulty recruiting clinical laboratory technologists, followed by psychiatric NPs, physicians assistants, RNs with 2 + years of experience, NPs (excluding psychiatric), and surgical Technicians (Table 16). Psychiatric NPs, followed by clinical laboratory technologists, RNs (<2 years of experience) and clinical laboratory technicians were the most difficult to retain.

Table 16. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in New York State, 2017

Occupation	Recruitment			Retention		
	Reasons for Difficulty			Reasons for Difficulty		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of exp.)	3.7	74%	31%	3.3	29%	26%
RNs (<2 years of exp.)	2.5	32%	21%	3.5	26%	32%
Nurse Managers	3.3	61%	21%	2.6	41%	19%
Nurse Practitioners (excluding psychiatric)	3.6	63%	44%	3.1	47%	40%
Physician Assistants	3.8	63%	38%	3.1	40%	37%
Pharmacists	2.7	21%	10%	2.1	7%	4%
Psychiatric NPs	4.3	75%	40%	3.8	33%	19%
Psychologists	3.0	19%	13%	2.4	13%	7%
LCSWs	2.7	19%	11%	2.5	11%	15%
LMSWs	2.6	23%	10%	2.5	14%	10%
Physical Therapists	3.1	32%	26%	2.3	15%	24%
Occupational Therapists	3.0	28%	24%	2.2	7%	11%
Speech-Language Path.	3.1	39%	18%	2.3	19%	22%
Clinical Lab Technicians	3.4	52%	26%	3.4	50%	27%
Clinical Lab Technologists	4.5	79%	48%	3.7	55%	29%
Medical Coders	3.1	27%	20%	2.9	41%	16%
Surgical Technicians	3.5	68%	35%	3.0	38%	34%
Care Coordinators	2.3	21%	4%	2.0	13%	4%
Case Managers	2.5	29%	6%	2.2	14%	7%
Care Managers	3.0	46%	31%	2.2	16%	4%
Patient Navigators	2.4	12%	8%	2.0	9%	9%
Community Health Workers	2.5	23%	31%	2.0	14%	21%

- Forty-two percent (42%) of responding hospitals indicated they had difficulty hiring part-time workers, including RNs, physical therapists, nurse practitioners, and clinical laboratory techs.
- Forty-five percent (45%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including RNs, LPNs, and CNAs.
- Fifty percent (50%) of respondents reported that they were anticipating increasing jobs in clinical titles, while only 21% indicated they were expanding in non-clinical titles.

2. Performing Provider Systems

New York State

In 2017, 13 of 25 Performing Provider Systems (PPSs) statewide, or 52%, responded to the survey. The responding PPSs reported the most difficulty recruiting psychiatrists statewide, followed by psychiatric NPs, primary care physicians, and primary care NPs (Table 17). PPSs had the most difficulty retaining primary care physicians, psychiatrists, psychiatric NPs, and primary care NPs. Of the health occupations that are both difficult to recruit and retain, it is mostly due to a shortage of workers.

Table 17. Recruitment and Retention Difficulties for PPSs in selected Occupations in New York State, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Primary Care Physicians	4.3	3.8	82%	55%
Primary Care Nursing Practitioners	4.0	3.5	62%	46%
Psychiatrists	4.6	3.8	92%	50%
Psychiatric Nurse Practitioners	4.5	3.8	85%	31%
Registered Nurses	3.8	3.5	46%	54%
Licensed Practical Nurses	3.2	3.4	18%	18%
Medical Assistants	2.5	3.0	9%	9%
Licensed Clinical Social Workers	3.8	3.6	58%	58%
Licensed Master's Social Workers	3.8	3.7	50%	50%
RN Care Coordinators	3.8	3.3	67%	33%
Social Worker Care Coordinators	3.5	3.4	33%	42%
Other Care Coordinators	3.2	3.5	25%	33%
Community Health Workers	2.9	3.1	17%	33%
Peer Support Workers	3.1	3.1	17%	25%

- Most PPSs have or are considering using telehealth applications for chronic disease management, medication management, and counseling.

Downstate New Yorkⁱ

In 2017, 6 PPSs in downstate New York, or 50%, responded to the survey. The downstate New York PPSs reported the most difficulty recruiting psychiatrists (Table 18), followed by psychiatric NPs, primary care physicians, primary care NPs, and RN care coordinators. PPSs had the most difficulty retaining psychiatric NPs, primary care NPs, and other care coordinators.

Table 18. Recruitment and Retention Difficulties for PPSs in Selected Occupations in Downstate New York, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Primary Care Physicians	4.3	3.0	75%	25%
Primary Care Nursing Practitioners	4.0	3.2	50%	17%
Psychiatrists	4.6	3.0	100%	40%
Psychiatric Nurse Practitioners	4.5	3.3	83%	0%
Registered Nurses	3.0	2.7	0%	17%
Licensed Practical Nurses	2.8	2.5	0%	0%
Medical Assistants	2.2	3.0	0%	0%
Licensed Clinical Social Workers	3.0	2.6	40%	20%
Licensed Master's Social Workers	3.2	2.8	40%	0%
RN Care Coordinators	4.0	2.8	40%	0%
Social Worker Care Coordinators	3.2	2.8	20%	20%
Other Care Coordinators	2.5	3.2	0%	0%
Community Health Workers	2.8	2.6	0%	20%
Peer Support Workers	3.0	2.8	17%	17%

- Most PPSs in downstate New York are not using telehealth applications and are not considering their use. The only exception is that most are considering chronic disease management telehealth services.

ⁱ Includes New York City and Long Island.

Upstate New York^k

In 2017, 7 PPSs in upstate New York, or 54%, responded to the survey. The upstate New York PPSs reported the most difficulty recruiting psychiatrists, psychiatric NPs, and RNs, followed by licensed clinical social workers, primary care physicians, and primary care NPs (Table 19). PPSs had the most difficulty retaining psychiatric NPs, psychiatrists, licensed clinical social workers, and licensed master’s social workers. Of the health occupations that are both difficult to recruit and retain, it is mostly due to both a shortage of workers and the inability to offer competitive wages and benefits.

Table 19. Recruitment and Retention Difficulties for PPSs in selected Occupations in Upstate New York, 2107

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Primary Care Physicians	4.3	4.1	86%	71%
Primary Care Nursing Practitioners	4.0	3.7	71%	71%
Psychiatrists	4.6	4.3	86%	57%
Psychiatric Nurse Practitioners	4.6	4.3	86%	57%
Registered Nurses	4.6	4.1	86%	86%
Licensed Practical Nurses	3.4	4.0	29%	29%
Medical Assistants	2.7	3.0	17%	17%
Licensed Clinical Social Workers	4.4	4.3	71%	86%
Licensed Master's Social Workers	4.1	4.3	57%	86%
RN Care Coordinators	3.7	3.7	86%	57%
Social Worker Care Coordinators	3.7	3.9	43%	57%
Other Care Coordinators	3.7	3.7	43%	57%
Community Health Workers	3.0	3.5	29%	43%
Peer Support Workers	3.2	3.7	20%	40%

- Most PPSs in upstate New York use or are considering using telehealth applications for a number of services, including chronic disease manager, medication management, and counseling.

^k Upstate includes Hudson Valley, Capital district, North Country, Southern Tier, Mohawk Valley, Central New York, Finger Lakes, and Western New York.

3. Nursing Homes

In 2017, 178 nursing homes in New York State responded to the survey for a response rate of 29%. Nursing homes across the state reported the most difficulty recruiting experienced RNs, nurse directors and managers, and MDS coordinators (Table 20). Nursing homes also noted that CNAs were the most difficult to retain, followed by both experienced and newly licensed RNs, LPNs, and nurse directors and managers.

Table 20. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in New York State, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	3.3	3.7	57.9%	25.1%
Dietitians/Nutritionists	2.9	2.4	22.2%	14.3%
Licensed Practical Nurses	3.7	3.4	55.9%	28.2%
Occupational Therapists	3.1	2.6	28.1%	10.5%
Occupational Therapy Assistants	3.0	2.7	25.7%	10.1%
Physical Therapists	3.1	2.6	29.2%	13.3%
Physical Therapist Assistants	2.9	2.5	22.5%	8.1%
Registered Nurses (RNs)				
Newly Licensed RNs	3.4	3.6	47.1%	29.7%
Experienced RNs	4.1	3.6	58.5%	33.9%
MDS Coordinators	3.8	3.1	49.3%	25.7%
Nurse Directors/Managers	3.9	3.3	49.1%	25.2%
Social Workers (SWs)				
Licensed Clinical Social Workers	2.9	2.8	22.7%	12.5%
Licensed Master Social Workers	3.1	2.8	22.7%	12.1%
Speech-Language Pathologists	3.1	2.8	25.9%	8.3%

- Fifty-one percent (51%) of nursing homes reported difficulty hiring part-time workers.
- Fourteen percent (14%) of nursing homes reported difficulty hiring bilingual workers.
- Sixty-nine percent (69%) of nursing homes indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- About 32% of nursing homes projected expansion of clinical services and 9% plan to expand non-clinical services within the next year.

4. Home Health Care Agencies

In 2017, 356 out of 1,560 home health care agencies¹ in New York responded to the survey for a response rate of about 23%. Home health care agencies reported the most difficulties recruiting RNs, physical therapists, and occupational therapists. Survey respondents reported difficulty retaining personal care aides, followed by home health aides, and RNs (Table 21). Respondents indicate that a shortage of workers was the primary reason for difficulty in recruitment and retention of occupational therapists, personal care aides, and home health aides.

Table 21. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in New York State, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Home Health Aides	3.8	3.6	61%	40%
Homemakers	3.4	3.3	45%	36%
Personal Care Aides	3.7	3.7	59%	41%
Licensed Practical Nurses	3.5	3.3	42%	37%
Occupational Therapists	3.9	3.1	51%	23%
Physical Therapists	3.9	3.1	49%	28%
Registered Nurses	3.9	3.5	46%	41%
Respiratory Therapists	3.8	3.4	43%	30%
Licensed Clinical Social Workers	3.4	3.1	31%	23%
Licensed Master's Social Workers	3.6	3.2	36%	27%

- Fifty-nine percent (59%) of home health care agencies reported difficulty hiring full-time workers.
- Sixty-five percent (65%) of home health care agencies reported difficulty hiring part-time workers.
- Seventy-eight percent (78%) of home health care agencies reported difficulty hiring off-shifts.
- Sixty-seven percent (67%) of home health care agencies reported difficulty hiring bilingual workers.
- Forty-six percent (46%) of respondents indicated that they would be expanding their professional workforce (eg. licensed PNs, RNs, social workers, others) within the next year.
- Seventy-four percent (74%) of respondents indicated that they would be expanding their paraprofessional workforce (eg. home health aides, personal care aides, others) within the next year.
- Twenty-eight percent (28%) of respondents indicated that they would be expanding their non-clinical workforce (eg. managers, medical billers, schedulers, information technology workers, others) within the next year.

¹ For purposes of this report, home health care agencies include certified home health agencies, long-term home health care programs, and hospice programs.

5. Federally Qualified Health Centers

Sixty-two percent (62%) of FQHCs statewide responded to the 2016 survey. Of these respondents, most had difficulty recruiting psychiatrists, psychiatric NPs, and family/general practice physicians, and reported the most difficulty retaining psychiatric NPs, followed by other behavioral health practitioners (Table 22).

Table 22. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in New York State, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	4.2	2.9
	Internal Medicine	4.1	3.0
	Ob/Gyn	3.9	2.7
	Pediatricians	3.5	2.6
	Physician Assistants (PAs)	2.5	2.7
Nurse Practitioners	Overall – All Specialties	3.0	2.9
	Pediatric	2.9	2.3
	Adult	2.6	2.4
	Family	3.1	3.0
	Psychiatric	4.3	3.7
Nurses	Registered Nurses	3.6	2.8
	Licensed Practical Nurses	3.1	2.7
Behavioral Health	Psychiatrists	4.4	3.1
	Psychologists	3.5	3.2
	Substance Abuse Counselors	3.9	3.1
	Social Workers	3.8	2.9
Oral Health	Dentists	3.7	3.1
	Dental Hygienists	2.8	2.5
Coordination/Patient Care	Care Coordinators	3.2	2.8
	Case Managers	2.8	2.6
	HIV Counselors	2.8	2.5
Patient/Community Education	Community Health Workers	2.3	2.2
	Patient Health Educators	2.6	2.1
	Nutritionists/Nutrition Educators	2.9	2.5
Enabling Services	Patient Health Navigators	2.7	2.3
	Outreach Workers	2.7	2.4
	Transportation Workers	2.7	2.1
	Interpreters	3.2	1.8
Administrative Support	IT Systems Admin/Maintenance	3.0	2.5
Others	Physical Therapists	3.0	2.3
	Occupational Therapists	3.5	3.0

J. Projected Job Growth

Between 2014 and 2024, the NYSDOL projects needing nearly 11,000 average annual job openings (both new jobs and replacement workers) for home health aides in the state, almost 6,500 annual job openings for personal care aides, and about 7,500 annual job openings for RNs (Table 23).

Table 23. Employment Projections for Selected Health Occupations in New York State, 2014-2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Openings ^a
			Number	Percent	
Home Health Aides	161,970	235,310	73,340	45.3%	10,992
Personal Care Aides	164,700	215,950	51,250	31.1%	6,457
Registered Nurses	183,210	214,460	31,250	17.1%	7,447
Nursing Assistants	110,730	128,430	17,700	16.0%	4,271
Social Workers	60,530	70,330	9,800	16.2%	2,438
Licensed Practical and Licensed Vocational Nurses	51,550	60,870	9,320	18.1%	2,399
Medical Assistants	25,490	31,540	6,050	23.7%	1,136
Physical Therapists	16,740	21,650	4,910	29.3%	939
Emergency Medical Technicians and Paramedics	16,480	21,270	4,790	29.1%	749
Medical and Health Services Managers	31,580	35,520	3,940	12.5%	1,191
Dental Assistants	19,860	23,640	3,780	19.0%	869
Nurse Practitioners	11,420	15,080	3,660	32.0%	635
Physician Assistants	11,480	14,590	3,110	27.1%	569
Clinical, Counseling, and School Psychologists	15,450	18,130	2,680	17.3%	599
Speech-Language Pathologists	10,960	13,320	2,360	21.5%	512
Dental Hygienists	10,640	12,830	2,190	20.6%	395
Occupational Therapists	9,760	11,940	2,180	22.3%	407
Pharmacy Technicians	16,950	19,100	2,150	12.7%	383
Medical Records and Health Information Technicians	9,220	10,720	1,500	16.3%	356
Medical and Clinical Laboratory Technicians	8,830	10,280	1,450	16.4%	356
Diagnostic Medical Sonographers	5,270	6,660	1,390	26.4%	240
Radiologic Technologists	14,260	15,550	1,290	9.0%	398
Pharmacists	19,640	20,690	1,050	5.3%	563
Dietitians and Nutritionists	5,220	6,260	1,040	19.9%	143
Medical and Clinical Laboratory Technologists	10,420	11,410	990	9.5%	348
Orderlies	5,400	6,270	870	16.1%	209
Respiratory Therapists	6,410	7,100	690	10.8%	221
Surgical Technologists	5,510	6,180	670	12.2%	122
Cardiovascular Technologists and Technicians	3,050	3,680	630	20.7%	121
Psychiatric Aides	7,100	7,500	400	5.6%	200
Certified Registered Nurse Anesthetists	1,630	1,950	320	19.6%	70
Nurse Midwives	490	560	70	14.3%	19

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the occupation.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024

V. REGIONAL PROFILES

A. New York City

The NYSDOL New York City region includes the 5 counties in New York City: Bronx, New York (Manhattan), Kings (Brooklyn), Queens, and Richmond (Staten Island).

Population

New York City's population had a higher percentage of people under 100% and under 200% of the federal poverty level (FPL) than New York State as a whole (Table 24). New York City's population was also much more racially and ethnically diverse than statewide. New York City also had a higher percentage of its population with less than a high school education or equivalent than the state as a whole.

Table 24. Selected Population Characteristics in the New York City Region, 2011-2015 (5-Year Average)

Population Characteristics ^a	Region		Statewide Percent
	Number	Percent	
Total population	8,426,743	N/A	N/A
Population under 100% FPL	1,710,872	20.3%	15.3%
Population under 200% FPL	3,334,393	39.6%	31.6%
Population aged birth to 17 years	1,791,636	21.3%	21.6%
Population aged 65 and older	1,071,705	12.7%	14.3%
Population female aged 15 to 44	1,933,873	22.9%	20.6%
Women aged 15 to 19 who had a birth in past 12 mos.	3,586	<0.1%	<0.1%
Women aged 20 to 34 who had a birth in past 12 mos.	73,987	0.9%	0.8%
Women aged 35 to 50 who had a birth in past 12 mos.	32,939	0.4%	0.3%
Black/African American, non-Hispanic	1,885,085	22.4%	14.4%
Hispanic/Latino	2,437,297	28.9%	18.4%
Asian/Pacific Islander, non-Hispanic	1,133,195	13.4%	7.9%
American Indian/Native Alaskan, non-Hispanic	15,518	0.2%	0.2%
Two or more/other races	144,476	1.7%	1.7%
Less than high school education	1,140,129	19.7%	14.4%
High school or equivalent	2,226,928	38.4%	42.9%
Associate degree	366,071	6.3%	8.5%
Bachelor's degree	1,219,071	21.0%	19.4%
Master's degree or higher	849,125	14.6%	14.8%
Home Ownership	2,528,617	39.5%	56.2%

^a Education levels and rates are based on individuals aged 25 years and older.

Source: US Census, American Community Survey, 2011-2015 (5-Year Average); Behavioral Risk Factor Surveillance System, 2016

Health Status

New York City had a lower rate of total deaths, deaths due to heart disease, and deaths due to cancer per 100,000 total population between 2012 and 2014 than the state as a whole. However, New York City had higher rates of asthma (both adult and pediatric), diabetes, preventable, and chronic lower respiratory disease hospitalizations per 10,000 total population than the state as a whole. Additionally, New York City had a higher percentage of births with no or late prenatal care and a higher rate of both total hospitalizations and ED visits than the statewide rate. Also in 2016, the region had a slightly larger percentage of people who had one or more doctor(s) they consider their personal doctor than the state as a whole but had a slightly smaller percentage of people who had checkups within the past two years than the state as a whole (Table 25).

Table 25. Selected Health Indicators in the New York City Region

Health Indicator	Region		Statewide	
	Number	Rate	Number	Rate/%
Total deaths, per 100,000	154,467	612.1	442,323	750.1
Deaths due to heart disease, per 100,000	49,406	195.8	128,806	218.4
Deaths due to all cancers, per 100,000	37,475	151.1	105,645	180.7
Deaths due to diabetes, per 100,000	5,369	21.3	12,003	20.4
Total births, per 1,000 females aged 15 to 44	351,904	60.8	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	15,026	20.9	33,588	17.8
Low-birthweight births, as a percent of total births	28,947	8.2	56,238	7.9
Late/no prenatal care, as a percent of total births	25,032	7.2	39,555	5.6
Infant deaths, per 1,000 live births	1,479	4.2	3,403	4.8
Total hospitalizations, per 10,000	3,181,060	1,260.6	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	89,665	134.0	198,511	127.9
Adult asthma hospitalizations, per 10,000	67,824	26.9	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	8,009	10.1	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	19,170	30.9	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	23,839	44.4	34,386	27.0
Diabetes hospitalizations, per 10,000	660,008	261.6	1,401,239	237.6
CLRD hospitalizations, per 10,000	100,356	39.8	204,932	34.8
Heart disease hospitalizations, per 10,000	248,314	98.4	609,961	103.4
Total ED visits, per 10,000	11,421,138	4,526.2	24,036,192	4,076.2
One or more personal doctor(s), as percent	5,589,458	87.4	13,578,631	86.7
Had a checkup within the past two years, as percent	5,150,084	80.5	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

Primary Care Physicians

There were about 10,000 primary care physicians practicing in the New York City region in 2017. Slightly more than half of them (52%) practiced general internal medicine and nearly 23% practiced general pediatrics. Additionally, there were 130.4 general pediatricians per 100,000 children ages 0 – 17. There were over 3,500 psychiatrists, including child and adolescent psychiatrists, practicing in the New York City region, or approximately 42 per 100,000. The county of New York had the most primary care physicians per 100,000 total population (253.7), and Bronx county had the least (70.8) (Table 26 and Figure 19).

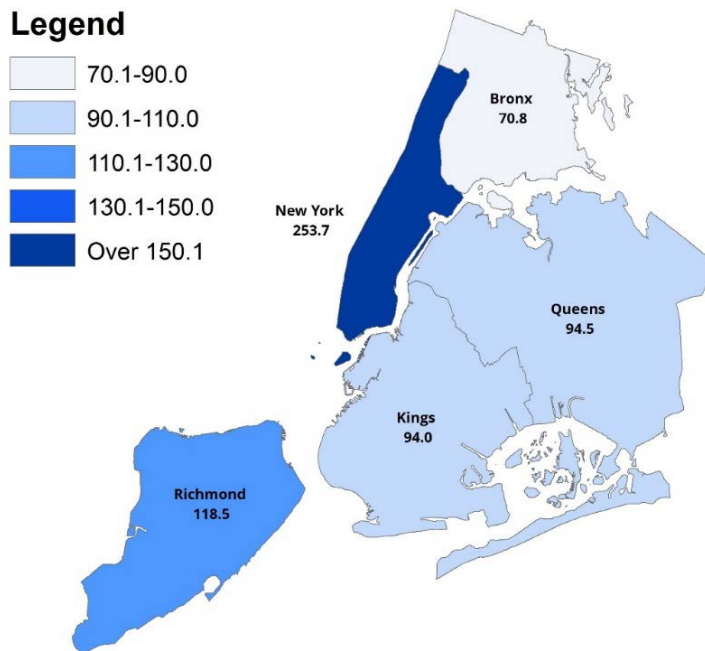
Table 26. Primary Care Physicians and Psychiatrists in the New York City Region, by Specialty, 2017

Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	1,448	17.2
Internal Medicine (General)	5,319	63.1
Subtotal	6,767	80.3
Obstetrics/Gynecology	1,218	63.0
Pediatrics (General)	2,337	130.4
Primary Care Total	10,322	N/A
Psychiatrist	3,528	41.9

^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

Figure 19. Number of Selected Primary Care Physicians per 100,000 Population in the New York City Region, by County, 2017

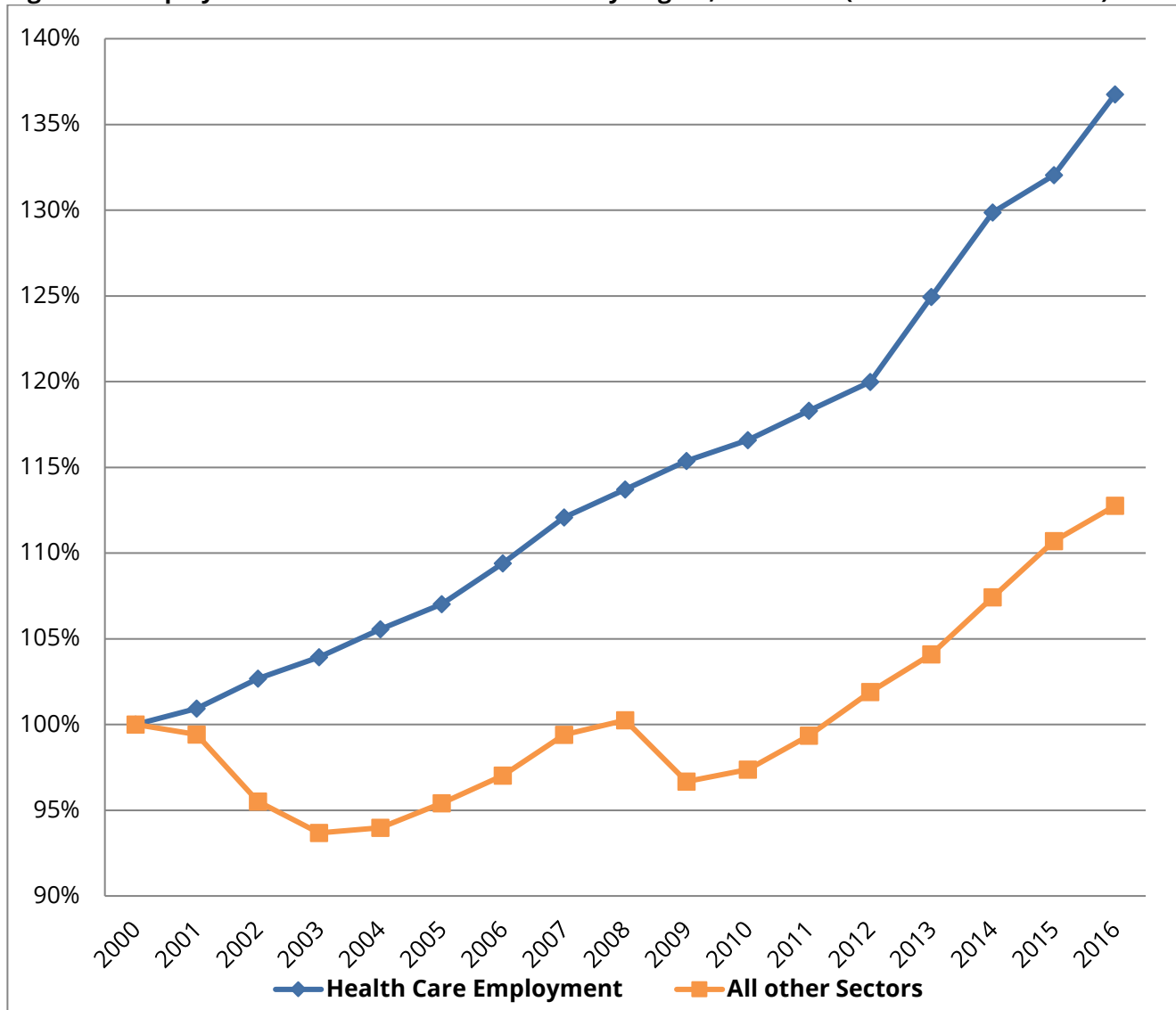


Employment

Total Health Sector Employment

Between 2000 and 2016, employment in the health sector in New York City grew steadily, with the largest increases occurring after 2012. Employment trends in all other sectors had slight fluctuations, including declines in employment between 2001 and 2003 and between 2008 and 2009. Between 2000 and 2016 employment in the health sector in New York City rose by nearly 37%, while employment in all other sectors grew by nearly 13% during the same period (Figure 20).

Figure 20. Employment Growth in the New York City Region, 2000-2016 (Standardized to 2000)

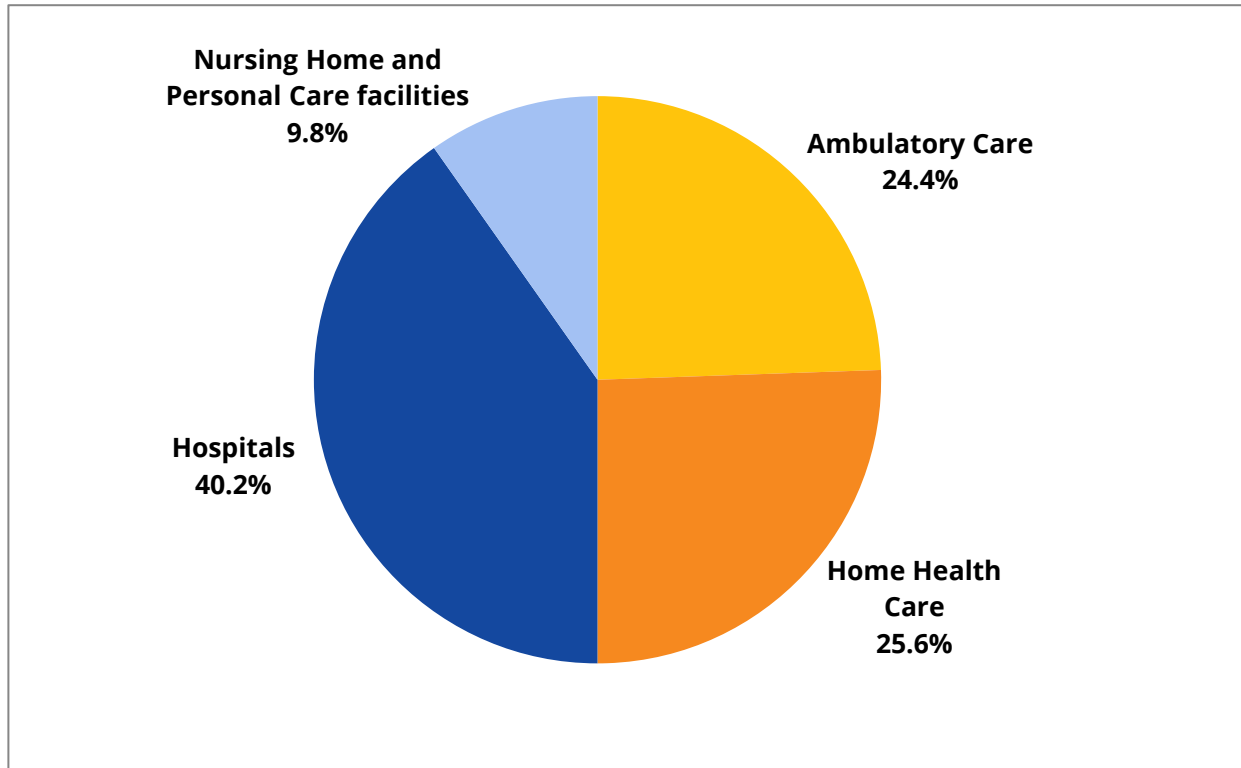


Source: New York State Department of Labor, ES-202

Employment by Setting

Hospitals continued to be the largest employer of New York City health workers in 2016, accounting for 40% of all health care jobs, followed by home health care agencies and ambulatory care, 26% and 24%, respectively (Figure 21).

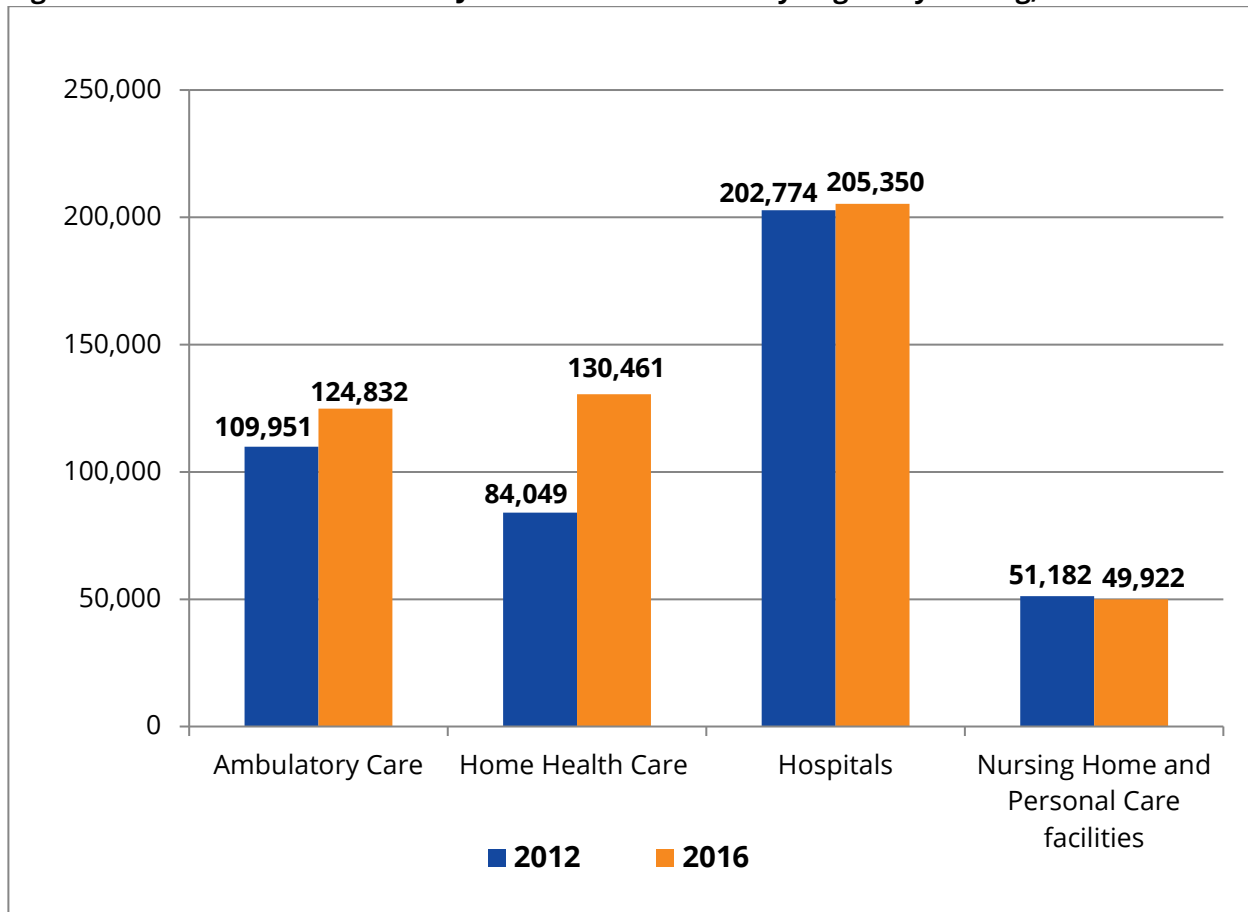
Figure 21. Health Sector Employment in the New York City Region, by Setting, 2016



Source: New York State Department of Labor, ES-202

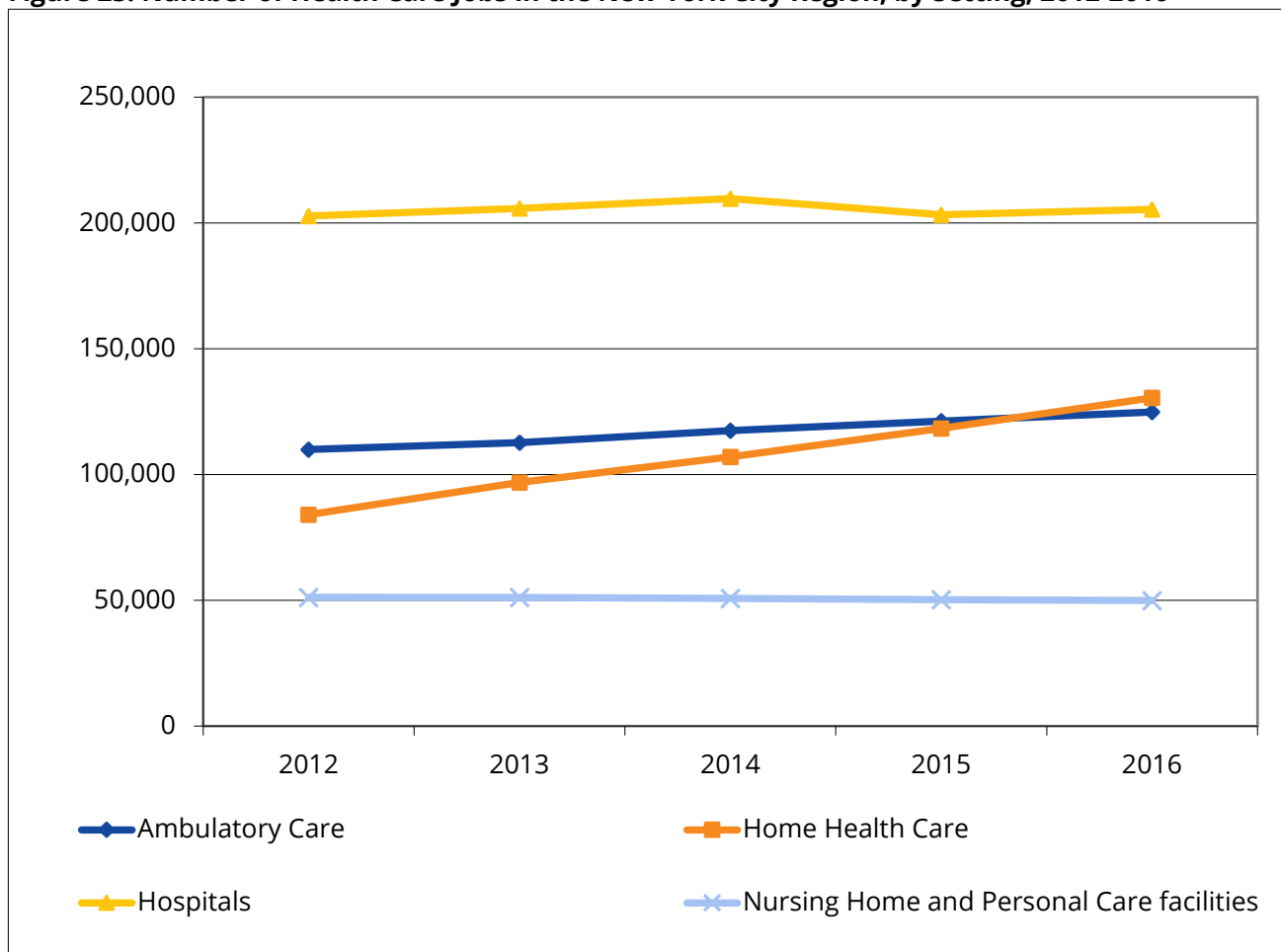
Between 2012 and 2016, employment increased substantially in New York City in ambulatory care and home health care, while nursing homes lost jobs during the same period. Home health care jobs grew by more than 35% between 2012 and 2016. Ambulatory care settings and hospitals experienced job growth of 11% and 1% respectively, whereas the number of jobs in nursing homes declined by nearly 3% during the same time period (Figures 22 and 23).

Figure 22. Number of Health Care Jobs in the New York City Region by Setting, 2012-2016



Source: New York State Department of Labor, ES-202

Figure 23. Number of Health Care Jobs in the New York City Region, by Setting, 2012-2016



Source: New York State Department of Labor, ES-202

Employment and Wage by Occupation

Employment for selected health care occupations for the New York City region is presented in Table 27. As of the first quarter of 2017, home health aides had the largest share of jobs (128,970), followed by personal care aides (74,130) and RNs (73,790). Dietetic technicians (260) and nurse midwives (250) had the fewest number of jobs within the New York City region.

Average wages per hour in selected health care occupations for the New York City are reported in Table 28. These wages were based on 2013-2016 NYSDOL Occupational Wages survey data, which was adjusted to include the first quarter of 2017. Certified registered nurse anesthetists earned the highest hourly wage in 2017 (\$81.24), followed by medical and health service managers (\$71.43), nurse practitioners (\$60.97), and pharmacists (\$55.52). Personal care aides and home health aides were the lowest wage earners (\$11.98 and \$11.66, respectively).

Table 27. Number of Jobs in Selected Health Occupations in the New York City Region, 2017

Occupation	Employment
Home Health Aides	128,970
Personal Care Aides	74,130
Registered Nurses	73,790
Nursing Assistants	40,710
Social Workers	26,490
Licensed Practical and Licensed Vocational Nurses	14,070
Medical and Health Services Managers	12,750
Medical Assistants	11,490
Pharmacists	9,600
Dental Assistants	8,800
Pharmacy Technicians	7,050
Physical Therapists	6,000
Nurse Practitioners	5,950
Physician Assistants	5,000
Radiologic Technologists and Technicians	4,890
Medical and Clinical Laboratory Technologists	4,660
Medical Secretaries	4,520
Speech-Language Pathologists	4,000
Medical and Clinical Laboratory Technicians	3,270
Medical Records and Health Information Technicians	3,270
Dental Hygienists	2,820
Surgical Technologists	2,740
Occupational Therapists	2,650
Mental Health Counselors	2,480
Orderlies	2,470
Respiratory Therapists	2,320
Dietitians and Nutritionists	1,990
Cardiovascular Technologists and Technicians	1,220
Physical Therapist Assistants	1,110
Pharmacy Aides	1,050
Physical Therapist Aides	940
Occupational Therapy Assistants	790
Radiation Therapists	720
Nuclear Medicine Technologists	520

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Table 28. Average Hourly Wage in Selected Health Occupations in the New York City Region, 2017

Occupation	Average Wage per Hour	Entry Wage per Hour	Experienced Wage per Hour	Range of Experienced Versus Range
Certified Registered Nurse Anesthetists	\$81.24	\$64.07	\$89.82	\$25.75
Medical and Health Services Managers	\$71.43	\$41.45	\$86.42	\$44.97
Nurse Practitioners	\$60.97	\$45.20	\$68.85	\$23.65
Pharmacists	\$55.52	\$38.33	\$64.12	\$25.78
Physician Assistants	\$52.30	\$41.89	\$57.51	\$15.62
Nurse Midwives	\$50.59	\$41.71	\$55.03	\$13.33
Occupational Therapists	\$50.06	\$33.82	\$58.18	\$24.37
Physical Therapists	\$45.00	\$31.99	\$51.51	\$19.52
Speech-Language Pathologists	\$44.57	\$30.00	\$51.86	\$21.85
Registered Nurses	\$44.52	\$33.82	\$49.88	\$16.06
Dental Hygienists	\$43.67	\$36.40	\$47.30	\$10.90
Nuclear Medicine Technologists	\$42.69	\$34.21	\$46.93	\$12.72
Respiratory Therapists	\$37.68	\$34.17	\$39.44	\$5.26
Radiologic Technologists	\$35.47	\$26.32	\$40.05	\$13.73
Medical and Clinical Laboratory Technologists	\$34.25	\$27.12	\$37.82	\$10.70
Dietitians and Nutritionists	\$32.40	\$24.78	\$36.22	\$11.43
Occupational Therapy Assistants	\$31.45	\$25.47	\$34.44	\$8.97
Social Workers	\$29.91	\$21.05	\$34.34	\$13.28
Cardiovascular Technologists and Technicians	\$29.23	\$20.01	\$33.84	\$13.82
Physical Therapist Assistants	\$28.39	\$21.16	\$32.00	\$10.84
Surgical Technologists	\$27.55	\$19.89	\$31.38	\$11.49
Medical and Clinical Laboratory Technicians	\$26.30	\$19.44	\$29.74	\$10.30
Licensed Practical and Licensed Vocational Nurses	\$26.20	\$21.10	\$28.75	\$7.65
Medical Records and Health Information Technicians	\$23.33	\$15.93	\$27.03	\$11.10
Mental Health Counselors	\$22.66	\$14.27	\$26.85	\$12.58
Dietetic Technicians	\$21.83	\$18.93	\$23.28	\$4.35
Medical Secretaries	\$21.62	\$15.62	\$24.61	\$8.99
Orderlies	\$19.56	\$15.85	\$21.42	\$5.57
Nursing Assistants	\$18.67	\$16.10	\$19.95	\$3.86
Medical Assistants	\$17.86	\$13.05	\$20.26	\$7.21
Pharmacy Technicians	\$16.92	\$11.11	\$19.83	\$8.72
Dental Assistants	\$16.07	\$10.52	\$18.84	\$8.32
Physical Therapist Aides	\$12.92	\$10.75	\$14.01	\$3.27
Personal Care Aides	\$11.98	\$10.75	\$12.60	\$1.85
Home Health Aides	\$11.66	\$10.59	\$12.20	\$1.61

*Information on social Workers reflect combined salary data for child, family, school, healthcare, mental health, substance abuse, and all other social workers.

Source: New York State Department of Labor, Labor Statistics, Occupational Wages

Graduations by Occupation

Graduations for selected health occupations in the New York City region between 2012 and 2016 school years are reported in Table 29. Between 2012 and 2017, the New York City Region had the largest increase in the number of RNs (502), nurse practitioners and clinical nurse specialists (358), and social workers (270), followed by increased graduations of LPNs (183) and medical secretaries (116). The number of graduations for medical assistants and pharmacy technicians declined by 612 and 190 respectively.

Table 29. Number of Graduations in Selected Health Occupations in the New York City Region, 2012-2016

Occupation	2012	2013	2014	2015	2016	Change 2012-2016	
						Number	Percent
Registered Nurses	3,142	3,283	3,687	3,854	3,644	502	16.0%
Nurse Practitioners/Clinical Nurse Specialists	196	264	530	548	554	358	182.7%
Social Workers	2,280	2,417	2,383	2,458	2,550	270	11.8%
Licensed Practical Nurses	267	489	626	580	450	183	68.5%
Medical Secretaries	49	66	50	130	165	116	236.7%
Dietitians and Nutritionists	42	41	49	96	145	103	245.2%
Surgical Technologist	49	84	140	157	147	98	200.0%
Pharmacists	421	310	481	484	495	74	17.6%
Speech-Language Pathologists	174	209	219	254	233	59	33.9%
Medical and Health Service Managers	75	116	147	131	130	55	73.3%
Physician Assistant	515	475	463	499	567	52	10.1%
Medical and Clinical Laboratory Technologist	76	120	116	134	121	45	59.2%
Physical Therapists	194	214	219	257	221	27	13.9%
Occupational Therapists	218	231	213	216	235	17	7.8%
Physical Therapy Assistants/Aides	42	43	40	50	55	13	31.0%
Occupational Therapy Assistants/Aides	56	82	73	56	66	10	17.9%
Medical and Clinical Laboratory Technicians	15	17	16	13	24	9	60.0%
Dental Hygienist	166	174	154	164	167	1	0.6%
Respiratory Therapists	25	24	20	20	23	-2	-8.0%
Nuclear Medicine Technologists	7	5	6	6	4	-3	-42.9%
Dental Assistant	212	248	257	252	198	-14	-6.6%
Radiologic Technologist	122	136	71	69	78	-44	-36.1%
Cardiovascular Technologists & Technicians	54	55	68	37	10	-44	-81.5%
Nursing Assistants	888	1,174	859	921	842	-46	-5.2%
Medical Records and Health Info Techs	230	248	261	218	165	-65	-28.3%
Pharmacy Technician	544	631	356	379	354	-190	-34.9%
Medical Assistants	3,909	3,842	3,622	3,070	3,297	-612	-15.7%
Certified Registered Nurse Anesthetists	N/A	7	11	10	11	N/A	N/A
Dietetic Technician	12	23	19	N/A	N/A	N/A	N/A
Nurse Midwives	N/A	N/A	28	20	13	N/A	N/A

Source: Integrated Postsecondary Education Data System

Licensed Health Professionals

NPs had the largest percentage increase of licensed health professionals, growing by nearly 36% between 2013 and 2017. During the same period, the number of licensed social workers increased by 1,400, or by 7%, and the number of licensed RNs in New York City grew by over 4,000 or by 6%. Many other health professions grew, including dental assistants (33%), physician assistants (20%), and occupational therapists (17%). Conversely, clinical laboratory technicians experienced a decrease of 15% (Table 30).

Table 30. Number of Licensed Individuals in Selected Health Occupations in the New York City Region, 2013-2017

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Registered Nurse	64,333	64,646	66,275	67,396	68,456	4,123	6.4%
Nurse Practitioner	4,484	4,737	5,126	5,637	6,090	1,606	35.8%
Social Worker	21,038	21,460	22,426	22,337	22,438	1,400	6.7%
Pharmacist	6,362	6,429	6,621	6,952	7,113	751	11.8%
Speech-Language Pathologist	4,579	4,702	4,894	5,096	5,311	732	16.0%
Physician Assistant	3,481	3,560	3,762	3,982	4,171	690	19.8%
Occupational Therapist	3,221	3,366	3,502	3,627	3,766	545	16.9%
Physical Therapist	5,207	5,266	5,323	5,429	5,564	357	6.9%
Dental Hygienist	1,969	2,028	2,105	2,173	2,247	278	14.1%
Physical Therapy Assistant	1,295	1,365	1,414	1,432	1,465	170	13.1%
Respiratory Therapist	1,531	1,585	1,612	1,605	1,664	133	8.7%
Dietitian/Nutritionist	1,642	1,654	1,723	1,740	1,715	73	4.4%
Occupational Therapy Assistant	996	996	1,013	1,025	1,064	68	6.8%
Dental Assistant	55	59	67	69	73	18	32.7%
Clinical Laboratory Technologist	4,452	4,530	4,574	4,340	4,372	-80	-1.8%
Clinical Laboratory Technician	543	536	520	464	460	-83	-15.3%
Licensed Practical Nurse	15,248	15,533	15,924	15,192	15,130	-118	-0.8%
TOTAL	140,436	142,452	146,878	148,496	151,099	10,663	7.6%

Source: New York State Education Department, Office of Professions

Demand for Health Workers

Hospitals

New York City and Long Island hospitals reported the most difficulty recruiting psychiatric NPs, and clinical laboratory technologists, followed by physician assistants and care managers. Psychiatric NPs, and clinical laboratory technicians, followed by RNs (<2 years of experience) and surgical technicians were the most difficult to retain (Table 31). Difficulty in retention and recruitment was due to both a shortage of workers and non-competitive salaries.

Table 31. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in the New York City and Long Island Region, 2017

Occupation	Recruitment			Retention		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of experience)	3.1	50%	29%	2.8	8%	15%
RNs (<2 years of experience)	1.3	0%	8%	3.7	0%	33%
Nurse Managers	3.1	62%	15%	2.5	54%	15%
Nurse Practitioners (excluding psychiatric)	3.1	57%	71%	3.1	67%	75%
Physician Assistants	3.7	54%	69%	3.2	50%	75%
Pharmacists	2.6	15%	15%	2.2	0%	8%
Psychiatric NPs	4.6	73%	36%	3.9	20%	20%
Psychologists	3.2	0%	11%	2.5	0%	13%
Licensed Clinical Social Workers	2.3	0%	8%	2.4	0%	17%
Licensed Masters Social Workers	2.2	0%	8%	2.4	0%	8%
Physical Therapists	2.5	15%	8%	1.7	0%	8%
Occupational Therapists	2.6	8%	17%	1.6	0%	9%
Speech-Language Pathologists	2.6	8%	8%	1.6	0%	9%
Clinical Laboratory Technicians	2.8	20%	20%	3.8	78%	22%
Clinical Laboratory Technologists	4.6	77%	62%	3.5	58%	17%
Medical Coders	3.1	18%	18%	3.3	58%	8%
Surgical Technicians	3.3	67%	67%	3.7	58%	67%
Care Coordinators	2.7	20%	10%	2.2	11%	11%
Case Managers	2.6	23%	8%	2.3	8%	8%
Care Managers	3.4	64%	64%	2.3	10%	10%
Patient Navigators	3.1	18%	9%	2.4	10%	10%
Community Health Workers	2.3	50%	25%	3.0	33%	33%

- Only 7% of responding hospitals indicated they had difficulty hiring part-time workers.
- Only 21% of respondents reported that they had difficulty hiring bilingual workers.
- Thirty-five percent (35%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including nurse aides and patient care techs.
- Twenty-nine percent (29%) of respondents reported that they were anticipating expanding in clinical titles, while only 14% indicated they were expanding in non-clinical titles.

Nursing Homes

Nursing homes in New York City reported in 2017 that experienced RNs were the most difficult to recruit, followed by MDS coordinators, nurse directors and managers, and LPNs. Newly licensed and experienced RNs and LPNs were the hardest occupations to retain, followed by CNAs, nurse directors and managers, and licensed clinical social workers. The primary reasons for these difficulties were related to shortages of workers (Table 32).

Table 32. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in the New York City Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	2.7	3.2	38.5%	26.9%
Dietitians/Nutritionists	3.3	2.7	23.8%	19.0%
Licensed Practical Nurses	3.4	3.3	52.0%	24.0%
Occupational Therapists	2.5	2.5	11.8%	0.0%
Occupational Therapy Assistants	2.3	2.4	6.3%	0.0%
Physical Therapists	2.6	2.4	23.5%	5.9%
Physical Therapist Assistants	2.5	2.4	17.6%	5.9%
Registered Nurses (RNs)				
Newly Licensed RNs	2.7	3.3	26.1%	17.4%
Experienced RNs	4.0	3.3	44.0%	28.0%
MDS Coordinators	3.6	2.8	27.3%	13.6%
Nurse Directors/Managers	3.5	3.1	28.6%	19.0%
Social Workers (SWs)				
Licensed Clinical Social Workers	3.3	3.1	19.0%	14.3%
Licensed Master Social Workers	3.0	2.9	15.0%	10.0%
Speech-Language Pathologists	3.1	2.7	12.5%	0.0%

- Thirty-one percent (31%) of nursing homes reported difficulty hiring part-time workers.
- Twenty-four percent (24%) of nursing homes reported difficulty hiring bilingual workers.
- Forty-six percent (46%) of nursing homes indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).

Thirty-eight percent (38%) of nursing homes plan on expanding clinical services and 15% plan to expand non-clinical services next year.

Home Health Care Agencies

Home health care agencies in New York City reported the most difficulty recruiting occupational therapists, followed by physical therapists, respiratory therapists, and RNs. Physical therapists were the most difficult to retain, followed by occupational therapists, respiratory therapists, and RNs (Table 33).

Table 33. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in the New York City Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Homemakers	3.0	3.0	36%	25%
Personal Care Aides	3.3	3.3	42%	53%
Licensed Practical Nurses	3.4	3.4	41%	25%
Occupational Therapists	4.0	3.6	49%	26%
Physical Therapists	3.9	3.7	40%	29%
Registered Nurses	3.7	3.6	37%	36%
Respiratory Therapists	3.8	3.6	42%	29%
Licensed Clinical Social Workers	3.5	3.4	29%	18%
Licensed Master's Social Workers	3.5	3.4	28%	19%

- Forty-four percent (44%) of home health agencies reported difficulty hiring full-time workers.
- Fifty-five percent (55%) of home health care agencies reported difficulty hiring part-time workers.
- Sixty-seven percent (67%) of home health care agencies indicated difficulty hiring workers for off-shifts (evenings, nights, and weekends).
- Seventy-three percent (73%) of home health care agencies indicated difficulty hiring bilingual workers.
- Fifty-three percent (53%) of respondents indicated that they would be expanding their professional workforce (eg. licensed PNs, RNs, social workers, others) within the next year.
- Seventy-six percent (76%) of respondents indicated that they would be expanding their paraprofessional workforce (eg. home health aides, personal care aides, others) within the next year.
- Thirty-seven percent (37%) of respondents indicated that they would be expanding non-clinical workforce (eg. managers, medical billers, schedulers, information technology workers, others) within the next year.

FQHCs

New York City and Long Island regions were combined due to low response rates. FQHCs in this region had the most difficulty recruiting and retaining physical therapists and occupational therapists. Physicians, psychiatrists, and psychiatric NPs were also difficult to recruit (Table 34).

Table 34. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in the New York City and Long Island Region, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	4.2	2.7
	Internal Medicine	4.1	2.8
	Ob/Gyn	4.0	2.8
	Pediatricians	3.3	3.0
	Physician Assistants (PAs)	2.7	3.0
Nurse Practitioners	Overall – All Specialties	3.3	2.5
	Pediatric	3.5	2.7
	Adult	3.1	2.5
	Family	3.7	3.0
	Psychiatric	4.4	3.0
Nurses	Registered Nurses	3.9	3.3
	Licensed Practical Nurses	3.5	2.8
Behavioral Health	Psychiatrists	4.6	3.3
	Psychologists	4.2	4.0
	Substance Abuse Counselors	1.0	0.0
	Social Workers	3.7	3.0
Oral Health	Dentists	3.4	2.3
	Dental Hygienists	2.8	2.6
Coordination/Patient Care	Care Coordinators	3.3	3.2
	Case Managers	3.3	3.2
	HIV Counselors	2.2	2.0
Patient/Community Education	Community Health Workers	2.4	2.7
	Patient Health Educators	2.8	2.0
	Nutritionists/Nutrition Educators	3.3	2.7
Enabling Services	Patient Health Navigators	2.6	2.0
	Outreach Workers	2.4	2.0
	Transportation Workers	2.0	1.5
	Interpreters	1.0	1.0
Administrative Support	IT Systems Admin/Maintenance	3.2	3.0
Others	Physical Therapists	5.0	5.0
	Occupational Therapists	5.0	5.0

- Fifty-five percent (55%) of FQHCs in these regions identified difficulty hiring bilingual staff; Spanish is the language most needed.
- Sixty-four percent (64%) of FQHCs in these regions anticipate expanding one or more service.

Employment Projections by Health Occupation

According to the NYSDOL, the largest number of average annual job openings projected in New York City between 2014 and 2024 will be for home health aides (8,040), personal care aides (3,370), and RNs (3,210) (Table 35).

Table 35. Employment Projections for Selected Health Occupations in the New York City Region, 2014-2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Openings ^a
			Number	Percent	
Home Health Aides	112,060	167,120	55,060	49.1%	8,040
Personal Care Aides	83,620	110,560	26,940	32.2%	3,370
Registered Nurses	76,910	90,840	13,930	18.1%	3,210
Nursing Assistants	46,910	54,220	7,310	15.6%	1,790
Social Workers	29,570	34,700	5,130	17.4%	1,220
Licensed Practical and Licensed Vocational Nurses	15,230	18,160	2,930	19.2%	720
Medical Assistants	12,320	15,770	3,450	28.0%	600
Physical Therapists	6,450	8,320	1,870	29.0%	360
Emergency Medical Technicians and Paramedics	6,360	7,430	1,070	16.8%	210
Medical and Health Services Managers	15,680	17,670	1,990	12.7%	600
Dental Assistants	7,380	8,940	1,560	21.1%	340
Nurse Practitioners	4,610	6,060	1,450	31.5%	260
Physician Assistants	4,700	5,870	1,170	24.9%	230
Clinical, Counseling, and School Psychologists	6,470	7,670	1,200	18.6%	260
Speech-Language Pathologists	2,810	3,520	710	25.3%	140
Dental Hygienists	2,350	2,840	490	20.9%	90
Occupational Therapists	4,410	5,480	1,070	24.3%	200
Pharmacy Technicians	6,300	7,090	790	12.5%	140
Medical Records and Health Information	3,580	4,140	560	15.6%	140
Medical and Clinical Laboratory Technicians	3,720	4,410	690	18.6%	160
Diagnostic Medical Sonographers	1,700	2,190	490	28.8%	80
Radiologic Technologists	5,720	6,350	630	11.0%	170
Pharmacists	8,860	9,350	490	5.5%	260
Dietitians and Nutritionists	2,050	2,500	450	22.0%	70
Medical and Clinical Laboratory Technologists	4,560	4,990	430	9.4%	150
Respiratory Therapists	2,530	2,800	270	10.7%	90
Surgical Technologists	2,850	3,220	370	13.0%	70
Psychiatric Aides	2,370	2,410	40	1.7%	50
Orderlies	2,720	3,190	470	17.3%	110
Cardiovascular Technologists and Technicians	1,150	1,380	230	20.0%	40
Certified Registered Nurse Anesthetists	400	450	50	12.5%	20
Nurse Midwives	240	260	20	8.3%	10

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the profession.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024

B. Capital District

The Capital District region includes the counties of Albany, Columbia, Greene, Rensselaer, Saratoga, Schenectady, Warren, and Washington.

Population

The population of the Capital District region was less racially and ethnically diverse than New York State as a whole and had a lower percentage of people below 100% and 200% of the FPL. A higher percentage of individuals in the Capital District held high school diplomas or equivalents and associate degrees than statewide, while a lower percentage held bachelor's degrees and the percentage of individuals with a master's degree or higher was comparable to the statewide percentage (Table 36).

Table 36. Selected Population Characteristics in the Capital District Region, 2011-2015 (5-Year Average)

Population Characteristics ^a	Region		Statewide Percent
	Number	Percent	
Total population	1,084,320	N/A	N/A
Population under 100% FPL	120,715	11.1%	15.3%
Population under 200% FPL	268,733	24.8%	31.6%
Population aged birth to 17 years	219,679	20.3%	21.6%
Population aged 65 and older	171,627	15.8%	14.3%
Population female aged 15 to 44	206,907	19.1%	20.6%
Women aged 15 to 19 who had a birth in past 12 mos.	340	<0.1%	<0.1%
Women aged 20 to 34 who had a birth in past 12 mos.	7,892	0.7%	0.8%
Women aged 35 to 50 who had a birth in past 12 mos.	2,615	0.2%	0.3%
Black/African American, non-Hispanic	70,954	6.5%	14.4%
Hispanic/Latino	48,229	4.4%	18.4%
Asian/Pacific Islander, non-Hispanic	35,547	3.3%	7.9%
American Indian/Native Alaskan, non-Hispanic	1,399	0.1%	0.2%
Two or more/other races	23,484	2.2%	1.7%
Less than high school education	63,534	8.5%	14.4%
High school or equivalent	350,957	46.9%	42.9%
Associate degree	88,245	11.8%	8.5%
Bachelor's degree	135,299	18.1%	19.4%
Master's degree or higher	110,671	14.8%	14.8%
Home Ownership	521,312	71.2%	56.2%

^a Education levels and rates are based on individuals aged 25 years and older.

Source: US Census, American Community Survey, 2011-2015 (5-Year Average); Behavioral Risk Factor Surveillance System, 2016

Health Status

The Capital District region had higher rates of total deaths and deaths due to all types of cancer per 100,000 total population than the state as a whole. The Capital District region had lower rates of asthma (both adult and pediatric) and diabetes hospitalizations compared to the state as a whole. The rate for preventable hospitalizations was also lower in the Capital District region than statewide (Table 37).

Table 37. Selected Health Indicators in the Capital District Region

Health Indicator	Region		Statewide	
	Number	Rate	Number	Rate/%
Total deaths, per 100,000	29,013	891.8	442,323	750.1
Deaths due to heart disease, per 100,000	7,549	77.3	128,806	218.4
Deaths due to all cancers, per 100,000	7,157	220.7	105,645	180.7
Deaths due to diabetes, per 100,000	692	21.3	12,003	20.4
Total births, per 1,000 females aged 15 to 44	32,895	53.1	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	1,805	16.7	33,588	17.8
Low-birthweight births, as a percent of total births	2,454	7.5	56,238	7.9
Late/no prenatal care, as a percent of total births	1,415	4.4	39,555	5.6
Infant deaths, per 1,000 live births	191	5.8	3,403	4.8
Total hospitalizations, per 10,000	349,387	1,073.9	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	9,606	110.6	198,511	127.9
Adult asthma hospitalizations, per 10,000	2,820	8.7	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	478	6.1	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	934	9.9	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	676	10.3	34,386	27.0
Diabetes hospitalizations, per 10,000	68,354	210.1	1,401,239	237.6
CLRD hospitalizations, per 10,000	10,325	31.7	204,932	34.8
Heart disease hospitalizations, per 10,000	29,874	91.8	609,961	103.4
Total ED visits, per 10,000	1,228,360	3,775.6	24,036,192	4,076.2
One or more personal doctor(s), as percent	627,300	85.7	13,578,631	86.7
Had a checkup within the past two years, as percent	631,572	86.3	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

Primary Care Physicians

There were nearly 1,200 primary care physicians practicing in the Capital District region in 2017. Over one-third (38%) of them were in family or general practice and 33% were in general internal medicine. There were over 200 psychiatrists, including child and adolescent psychiatrists, practicing in the Capital District region, or approximately 18.7 per 100,000 total population. Albany County had the highest rate of primary care physicians in the region, with 168.0 per 100,000 total population, whereas Greene County had the lowest rate with 44.5 per 100,000 total population (Table 38 and Figure 24).

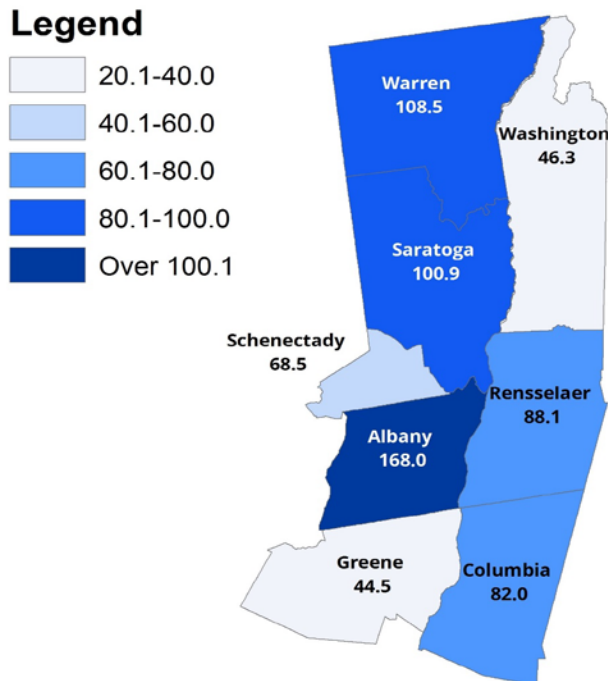
Table 38. Primary Care Physicians and Psychiatrists in the Capital District Region, by Specialty, 2017

Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	418	38.5
Internal Medicine (General)	423	39.0
Subtotal	841	77.6
Obstetrics/Gynecology	118	57.0
Pediatrics (General)	204	92.9
Primary Care Total	1,163	N/A
Psychiatrist	203	18.7

^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

Figure 24. Number of Selected Primary Care Physicians per 100,000 Population in the Capital District Region, by County, 2017



Employment

Total Health Sector Employment

Between 2012 and 2016, employment in the health care sector in the Capital District region grew by more than 2,500 jobs, or by nearly 5%. Ambulatory care (12%), hospitals (2%), and home health (1%) contributed to this overall trend, while jobs in nursing home and personal care facilities declined by nearly 2% (Table 39).

Table 39. Number of Health Care Jobs in the Capital District Region, by Setting, 2012-2016

Setting	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Hospitals	23,796	23,902	23,552	23,887	24,365	569	2.4%
Ambulatory care (excluding home health)	17,735	18,264	19,118	19,476	19,866	2,131	12.0%
Nursing home and personal care facilities	11,413	11,132	11,167	11,278	11,203	-210	-1.8%
Home health care	3,154	3,161	3,419	3,278	3,179	25	0.8%
Total	56,098	56,459	57,226	57,919	58,613	2,515	4.5%

Source: New York State Department of Labor, ES-202

Employment and Wage by Occupation

Employment for selected health care occupations in the Capital District Region is presented in Table 40. As reported in the first quarter of 2017, registered nurses had the largest number of jobs (11,610), followed by nursing assistants (6,560), personal care aides (6,130), and home health aides (4,590). Pharmacy aides (60) and nuclear medicine technologists (60) had the fewest number of reported jobs with in the Capital District region.

Average wages per hour in selected health care occupations for the Capital District Region are reported in Table 41. These wages were based on 2013-2016 NYSDOL Occupational Wages survey data, which were adjusted to include the first quarter of 2017. Certified registered nurse anesthetists earned the highest hourly wage in 2017 (\$73.39), followed by pharmacists and nurse practitioners (\$57.97 and \$53.60, respectively). Nursing assistants (\$13.85), personal care aides (\$13.37), and home health aides (\$12.67) were the lowest wage earners.

Table 40. Number of Jobs in Selected Health Occupations in the Capital District Region, 2017

Occupation	Employment
Registered Nurses	11,610
Nursing Assistants	6,560
Personal Care Aides	6,130
Home Health Aides	4,590
Licensed Practical and Licensed Vocational Nurses	3,700
Social Workers	3,270
Medical and Health Services Managers	1,670
Pharmacists	1,320
Pharmacy Technicians	1,270
Medical Assistants	1,090
Dental Assistants	1,030
Physical Therapists	1,020
Physician Assistants	800
Radiologic Technologists and Technicians	790
Speech-Language Pathologists	770
Medical Secretaries	770
Nurse Practitioners	710
Medical and Clinical Laboratory Technologists	690
Dental Hygienists	690
Medical Records and Health Information Technicians	650
Medical and Clinical Laboratory Technicians	510
Occupational Therapists	500
Mental Health Counselors	400
Respiratory Therapists	360
Dietitians and Nutritionists	310
Surgical Technologists	310
Physical Therapist Assistants	290
Orderlies	280
Cardiovascular Technologists and Technicians	260
Radiation Therapists	160
Certified Registered Nurse Anesthetists	150
Occupational Therapy Assistants	100
Physical Therapist Aides	70
Nuclear Medicine Technologists	60
Pharmacy Aides	60

Source: New York State Department of Labor, Labor Statistics, Occupational Wages

Table 41. Average Hourly Wage in Selected Health Occupations in the Capital District Region, 2017

Occupation	Average Wage per Hour	Entry Wage per Hour	Experienced Wage per Hour	Range of Experienced Versus Range
Certified Registered Nurse Anesthetists	\$73.39	\$71.14	\$74.51	\$3.37
Pharmacists	\$57.97	\$46.20	\$63.85	\$17.65
Nurse Practitioners	\$53.60	\$42.63	\$59.08	\$16.45
Medical and Health Services Managers	\$51.56	\$33.27	\$60.70	\$27.43
Physician Assistants	\$49.33	\$39.38	\$54.30	\$14.92
Nuclear Medicine Technologists	\$40.03	\$34.02	\$43.04	\$9.02
Physical Therapists	\$36.17	\$28.98	\$39.76	\$10.79
Occupational Therapists	\$33.94	\$26.34	\$37.75	\$11.40
Speech-Language Pathologists	\$33.71	\$23.52	\$38.80	\$15.28
Dental Hygienists	\$31.14	\$25.10	\$34.16	\$9.06
Registered Nurses	\$31.12	\$24.25	\$34.55	\$10.30
Medical and Clinical Laboratory Technologists	\$30.08	\$24.05	\$33.10	\$9.04
Dietitians and Nutritionists	\$29.40	\$21.03	\$33.58	\$12.55
Respiratory Therapists	\$29.16	\$24.33	\$31.57	\$7.25
Social Workers	\$28.18	\$20.61	\$31.97	\$11.36
Radiologic Technologists	\$27.73	\$21.40	\$30.89	\$9.50
Cardiovascular Technologists and Technicians	\$26.21	\$14.99	\$31.82	\$16.83
Occupational Therapy Assistants	\$23.49	\$19.09	\$25.68	\$6.59
Occupational Therapy Assistants	\$23.49	\$19.09	\$25.68	\$6.59
Physical Therapist Assistants	\$22.37	\$19.12	\$24.00	\$4.88
Physical Therapist Assistants	\$22.37	\$19.12	\$24.00	\$4.88
Licensed Practical and Licensed Vocational Nurses	\$20.74	\$16.35	\$22.93	\$6.58
Medical and Clinical Laboratory Technicians	\$19.33	\$14.00	\$21.99	\$8.00
Mental Health Counselors	\$19.22	\$13.62	\$22.02	\$8.41
Surgical Technologists	\$19.11	\$14.53	\$21.39	\$6.86
Medical Records and Health Information Technicians	\$18.82	\$13.08	\$21.68	\$8.60
Medical Secretaries	\$18.09	\$13.84	\$20.22	\$6.38
Dental Assistants	\$18.03	\$13.88	\$20.11	\$6.24
Dietetic Technicians	\$17.77	\$16.22	\$18.55	\$2.33
Medical Assistants	\$16.15	\$13.44	\$17.51	\$4.07
Pharmacy Technicians	\$15.21	\$11.01	\$17.31	\$6.29
Nursing Assistants	\$13.85	\$11.00	\$15.28	\$4.28
Personal Care Aides	\$13.37	\$10.93	\$14.59	\$3.66
Home Health Aides	\$12.67	\$10.96	\$13.53	\$2.58
*Information on social Workers reflect combined salary data on child, family, school, healthcare, mental health, substance abuse, and all other social workers.				

Source: New York State Department of Labor, Labor Statistics, Occupational Wages

Graduations by Occupation

Graduations for selected health occupations between the 2012 and 2016 school years for the Capital District region are reported in Table 42. Between 2012 and 2016, the Capital District experienced the largest increase in the number of graduations among medical assistants (52) and medical secretaries (49), followed by occupational therapy assistants/aides (32) and social workers (27). RNs and LPNs experienced the largest decrease in graduations, by 359 and 242 respectively.

Table 42. Number of Graduations in Selected Health Occupations in the Capital District Region, 2012-2016

Occupation	2012	2013	2014	2015	2016	Change 2012-2016	
						Number	Percent
Medical Assistants	209	314	300	292	261	52	24.9%
Medical Secretaries	42	62	69	80	91	49	116.7%
Occupational Therapy Assistants/Aides	21	33	35	36	53	32	152.4%
Social Workers	139	149	124	155	166	27	19.4%
Physician Assistants	29	30	41	49	40	11	37.9%
Pharmacists	230	216	283	271	240	10	4.3%
Occupational Therapists	27	27	30	29	35	8	29.6%
Medical and Health Services Managers	37	28	41	38	45	8	21.6%
Dental Hygienists	34	38	30	30	37	3	8.8%
Respiratory Therapists	20	19	24	13	22	2	10.0%
Certified Registered Nurse Anesthetists	18	18	20	20	19	1	5.6%
Physical Therapists	39	51	46	36	38	-1	-2.6%
Dental Assistants	12	19	12	14	11	-1	-8.3%
Medical and Clinical Laboratory Technologists	13	19	14	12	9	-4	-30.8%
Nurse Practitioners/Clinical Nurse Specialists	31	43	60	62	25	-6	-19.4%
Cardiovascular Technologists and Technicians	21	N/A	6	9	6	-15	-71.4%
Licensed Practical Nurses	470	379	367	335	228	-242	-51.5%
Registered Nurses	2,489	1,961	1,867	2,014	2,130	-359	-14.4%
Dietetic Technicians	N/A	N/A	4	N/A	N/A	N/A	N/A
Medical Records and Health Info Techs	N/A	1	N/A	1	N/A	N/A	N/A
Pharmacy Technicians	14	N/A	N/A	N/A	N/A	N/A	N/A

Source: Integrated Postsecondary Education Data System

Licensed Health Professionals

Between 2013 and 2017, the Capital District experienced a large increase in the number of licensed RNs, increasing by nearly 730, or by 5%, followed by smaller increases for NPs (202), PAs (151), and occupational therapists (70). The licensed professions with the largest percentage increases in the Capital District during that period included NPs (24%), PAs (22%), and dental assistants (20%) (Table 43).

Table 43. Number of Licensed Individuals in Selected Health Occupations in the Capital District Region, 2013-2017

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Registered Nurses	16,218	16,118	16,669	16,823	16,946	728	4.5%
Nurse Practitioners	831	857	900	946	1,033	202	24.3%
Physician Assistants	681	695	741	775	832	151	22.2%
Occupational Therapists	589	602	626	640	659	70	11.9%
Social Workers	2,504	2,521	2,604	2,546	2,573	69	2.8%
Physical Therapists	1,085	1,070	1,115	1,118	1,142	57	5.3%
Dietitian/Nutritionists	315	329	344	349	356	41	13.0%
Occupational Therapy Assistants	306	303	327	323	344	38	12.4%
Respiratory Therapists	392	400	418	407	429	37	9.4%
Speech-Language Pathologists	932	942	951	944	957	25	2.7%
Dental Assistants	122	126	140	141	146	24	19.7%
Pharmacists	1,541	1,507	1,560	1,586	1,549	8	0.5%
Dental Hygienists	866	854	860	863	870	4	0.5%
Clinical Laboratory Technicians	98	99	94	86	82	-16	-16.3%
Licensed Practical Nurses	5,333	5,437	5,547	5,282	5,296	-37	-0.7%
Physical Therapy Assistants	333	317	318	311	296	-37	-11.1%
Clinical Laboratory Technologists	825	829	833	777	775	-50	-6.1%
TOTAL	32,971	33,006	34,047	33,917	34,285	1,314	4.0%

Source: New York State Education Department, Office of Professions

Demand for Health Workers

Hospitals

Regions within upstate New York were combined due to low survey response rates. Upstate hospitals reported the most difficulty recruiting clinical laboratory technologists, and RNs (2+ years of experience), followed by NPs, physician assistants, and clinical laboratory technicians. Clinical laboratory technologists were the difficult to retain, followed by, psychiatric NPs and RNs (Table 44).

Table 44. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in Upstate New York, 2017

Occupation	Recruitment			Retention		
	Reasons for Difficulty			Reasons for Difficulty		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of exp.)	4.1	90%	33%	3.6	43%	33%
RNs (<2 years of exp.)	3.2	52%	29%	3.5	42%	32%
Nurse Managers	3.5	60%	25%	2.7	32%	21%
Nurse Practitioners (excluding psychiatric)	3.9	67%	22%	3.2	33%	17%
Physician Assistants	3.8	68%	16%	3.1	33%	11%
Pharmacists	2.8	25%	6%	2.1	14%	0%
Psychiatric NPs	3.9	78%	44%	3.6	45%	18%
Psychologists	2.7	43%	14%	2.3	29%	0%
LCSWs	3.0	33%	13%	2.5	20%	13%
LMSWs	2.8	39%	11%	2.6	25%	13%
Physical Therapists	3.5	43%	38%	2.7	25%	35%
Occupational Therapists	3.3	41%	29%	2.5	12%	12%
Speech-Language Paths.	3.5	63%	25%	2.8	31%	31%
Clinical Lab. Technicians	3.8	71%	29%	3.2	35%	29%
Clinical Lab. Technologists	4.4	80%	40%	3.9	53%	37%
Medical Coders	3.1	32%	21%	2.8	30%	20%
Surgical Technicians	3.6	68%	16%	2.7	25%	15%
Care Coordinators	2.1	21%	0%	1.8	13%	0%
Case Managers	2.4	33%	6%	2.1	18%	6%
Care Managers	2.7	33%	7%	2.1	20%	0%
Patient Navigators	1.9	7%	7%	1.8	8%	8%
Community Health Workers	2.6	11%	33%	1.7	9%	18%

- Sixty-four percent (64%) of responding hospitals indicated they had difficulty hiring part-time workers, including RNs, physical therapists, occupational therapists, and nurse practitioners.
- Fifty-two percent (52%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including RNs, LPNs, clinical laboratory technologists, CNAs, and patient care techs.
- Sixty-five percent (65%) of respondents reported that they were anticipating expanding in clinical titles, while only 25% indicated they were expanding in non-clinical titles.

Nursing Homes

Nursing homes in the Capital District region reported that in 2017 experienced MDS coordinators were the most difficult to recruit followed by nurse directors and managers, CNAs, and experienced RNs. CNAs were the most difficult to retain, followed by MDS coordinators, LPNs, and newly licensed and experienced RNs (Table 45).

Table 45. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in the Capital District Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	4.2	4.1	78.6%	50.0%
Dietitians/Nutritionists	2.9	2.5	14.3%	28.6%
Licensed Practical Nurses	3.5	3.4	53.8%	38.5%
Occupational Therapists	2.4	2.5	28.6%	0.0%
Occupational Therapy Assistants	2.7	2.8	28.6%	0.0%
Physical Therapists	2.6	2.7	28.6%	0.0%
Physical Therapist Assistants	2.4	2.5	28.6%	0.0%
Registered Nurses (RNs)				
Newly Licensed RNs	3.5	3.1	60.0%	30.0%
Experienced RNs	4.0	3.1	42.9%	14.3%
MDS Coordinators	4.4	3.5	42.9%	28.6%
Nurse Directors/Managers	4.2	3.0	41.7%	16.7%
Social Workers (SWs)				
Licensed Clinical Social Workers	3.1	2.7	25.0%	25.0%
Licensed Master Social Workers	3.2	2.4	20.0%	10.0%
Speech-Language Pathologists	2.9	2.2	14.3%	0.0%

- Seventy-one percent (71%) indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Thirty-six percent (36%) of nursing homes plan to expand clinical services and fourteen percent (14%) plan to expand non-clinical services next year.

Home Health Care Agencies

Home health care agencies in the Capital District region reported the greatest difficulty recruiting respiratory therapists, followed by LCSWs and LMSWs. Home health care agencies reported the greatest difficulty retaining personal care aides, home health aides, followed by RNs. Difficulty in recruitment and retention was due to both a shortage of workers and non-competitive salaries and benefits (Table 46).

Table 46. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in the Capital District, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Home Health Aides	4.0	3.9	70%	45%
Homemakers	3.1	3.2	38%	38%
Personal Care Aides	3.9	3.9	68%	47%
Licensed Practical Nurses	3.3	3.0	56%	33%
Occupational Therapists	4.0	3.0	50%	50%
Physical Therapists	4.0	3.0	50%	50%
Registered Nurses	4.2	3.5	30%	70%
Respiratory Therapists	5.0	N/A	100%	100%
Licensed Clinical Social Workers	4.5	3.0	50%	100%
Licensed Master's Social Workers	4.5	3.0	50%	100%

- Eighty-eight percent (88%) of home health care agencies indicated difficulty hiring full-time workers.
- Eighty-four (84%) of home health care agencies indicated difficulty hiring part-time workers.
- Ninety-five percent (95%) of home health care agencies indicated difficulty hiring workers for off-shifts (evenings, nights, and weekends).
- Fifty percent (50%) of home health care agencies indicated difficulty hiring bilingual workers.
- Thirty-five percent (35%) of respondents indicated that they would be expanding their professional workforce (eg. licensed PNs, RNs, social workers, others) within the next year.
- Seventy-four percent (74%) of respondents indicated that they would be expanding their paraprofessional workforce (eg. home health aides, personal care aides, others) within the next year.
- Twenty-two (22%) of respondents indicated that they would be expanding their non-clinical workforce (eg. managers, medical billers, schedulers, information technology workers, others) within the next year.

FQHCs

Hudson Valley and Capital District regions were combined due to low survey response rates. FQHCs in this combined region had the most difficulty recruiting family/general practice physicians Ob/Gyns and LPNs. FQHCs reported the most difficulty retaining IT support staff and RNs (Table 47).

Table 47. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in the Capital District and Hudson Valley Regions, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	3.8	2.2
	Internal Medicine	3.6	2.2
	Ob/Gyn	3.8	2.6
	Pediatricians	2.5	2.2
	Physician Assistants (PAs)	2.2	2.6
Nurse Practitioners	Overall – All Specialties	2.6	2.6
	Pediatric	2.5	2.3
	Adult	2.3	2.3
	Family	2.6	2.6
	Psychiatric	2.8	2.7
Nurses	Registered	3.3	2.8
	Licensed Practical Nurses	3.8	2.7
Behavioral Health	Psychiatrists	3.3	2.3
	Psychologists	2.7	3.0
	Substance Abuse Counselors	2.5	2.7
	Social Workers	2.8	2.3
Oral Health	Dentists	2.8	2.3
	Dental Hygienists	2.5	2.3
Coordination/Patient Care	Care Coordinators	3.3	2.7
	Case Managers	2.0	2.3
	HIV Counselors	1.0	1.0
Patient/Community Education	Community Health Workers	1.0	1.0
	Patient Health Educators	1.0	1.0
	Nutritionists/Nutrition Educators	2.3	2.3
Enabling Services	Patient Health Navigators	1.0	1.0
	Outreach Workers	1.0	1.0
	Transportation Workers	1.0	1.0
	Interpreters	1.0	1.0
Administrative Support	IT Systems Admin/Maintenance	3.5	2.8
Others	Physical Therapists	3.0	1.0
	Occupational Therapists	2.0	1.0

- Sixty percent (60%) of FQHCs in these regions indicated difficulty hiring bilingual staff; Spanish was the language most needed.
- Eighty percent (80%) of FQHCs indicated anticipation for expanding one or more service.

Employment Projections by Health Occupation

According to the NYSDOL, the largest number of average annual job openings projected in the Capital District between 2014 and 2024 will be for RNs (510), home health aides (330), personal care aides (280), and nursing assistants (260) (Table 48).

Table 48. Employment Projections for Selected Health Occupations in the Capital District Region, 2014-2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Openings ^a
			Number	Percent	
Home Health Aides	5,180	7,250	2,070	40.0%	330
Personal Care Aides	7,370	9,610	2,240	30.4%	280
Registered Nurses	12,310	14,460	2,150	17.5%	510
Nursing Assistants	6,820	7,930	1,110	16.3%	260
Social Workers	4,460	5,190	730	16.4%	180
Licensed Practical and Licensed Vocational Nurses	4,130	4,800	670	16.2%	190
Medical Assistants	1,240	1,480	240	19.4%	50
Physical Therapists	820	1,050	230	28.1%	40
Emergency Medical Technicians and Paramedics	1,420	1,830	410	28.9%	60
Medical and Health Services Managers	2,000	2,250	250	12.5%	80
Dental Assistants	1,040	1,240	200	19.2%	50
Nurse Practitioners	780	1,020	240	30.8%	40
Physician Assistants	760	970	210	27.6%	40
Clinical, Counseling, and School Psychologists	990	1,190	200	20.2%	40
Speech-Language Pathologists	730	900	170	23.3%	40
Dental Hygienists	800	950	150	18.8%	30
Occupational Therapists	610	760	150	24.6%	30
Pharmacy Technicians	1,200	1,360	160	13.3%	30
Medical Records and Health Information Technicians	710	830	120	16.9%	30
Medical and Clinical Laboratory Technicians	720	810	90	12.5%	30
Diagnostic Medical Sonographers	270	340	70	25.9%	20
Radiologic Technologists	860	920	60	7.0%	30
Pharmacists	1,270	1,350	80	6.3%	40
Dietitians and Nutritionists	380	450	70	18.4%	10
Medical and Clinical Laboratory Technologists	710	780	70	9.9%	30
Respiratory Therapists	380	410	30	7.9%	10
Surgical Technologists	310	370	60	19.4%	10
Cardiovascular Technologists and Technicians	180	210	30	16.7%	0
Certified Registered Nurse Anesthetists	310	350	40	12.9%	10

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the profession.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024

C. Central New York

The Central New York region includes the counties of Cayuga, Cortland, Madison, Onondaga, and Oswego.

Population

The population in the Central New York region is slightly older than the state as a whole. Additionally, the Central New York region was substantially less racially and ethnically diverse than the state as a whole and had higher percentages of individuals with high school diplomas or equivalents and a higher percentage of individuals with associate degrees than the state as a whole (Table 49).

Table 49. Selected Population Characteristics in the Central New York Region, 2011-2015 (5-Year Average)

Population Characteristics ^a	Region		Statewide Percent
	Number	Percent	
Total population	790,130	N/A	N/A
Population under 100% FPL	114,967	14.6%	15.3%
Population under 200% FPL	240,518	30.4%	31.6%
Population aged birth to 17 years	171,397	21.7%	21.6%
Population aged 65 and older	118,074	14.9%	14.3%
Population female aged 15 to 44	155,354	19.7%	20.6%
Women aged 15 to 19 who had a birth in past 12 mos.	357	<0.1	<0.1%
Women aged 20 to 34 who had a birth in past 12 mos.	6,842	0.9%	0.8%
Women aged 35 to 50 who had a birth in past 12 mos.	1,661	0.2%	0.3%
Black/African American, non-Hispanic	55,937	7.1%	14.4%
Hispanic/Latino	28,731	3.6%	18.4%
Asian/Pacific Islander, non-Hispanic	18,836	2.4%	7.9%
American Indian/Native Alaskan, non-Hispanic	3,700	0.5%	0.2%
Two or more/other races	17,503	2.2%	1.7%
Less than high school education	56,102	10.6%	14.4%
High school or equivalent	255,549	48.5%	42.9%
Associate degree	63,247	12.0%	8.5%
Bachelor's degree	85,902	16.3%	19.4%
Master's degree or higher	66,587	12.6%	14.8%
Home Ownership	425,601	70.7%	56.2%

^a Education levels and rates are based on individuals aged 25 years and older.

Source: US Census, American Community Survey, 2011-2015 (5-Year Average); Behavioral Risk Factor Surveillance System, 2016

Health Status

The Central New York region had a higher rate of total deaths and deaths due to all cancers per 100,000 total population than the state as a whole. The overall birth rate was lower in Central New York than in New York State but the teen birth rate was higher. The Central New York region also had lower rates of asthma (both adult and pediatric), heart disease hospitalizations, ED visits, and total hospitalizations per 10,000 total population compared to the state as a whole but had a slightly higher rate of preventable hospitalizations compared to New York State (Table 50).

Table 50. Selected Health Indicators in the Central New York Region

Health Indicator	Region		Statewide	
	Number	Rate	Number	Rate
Total deaths, per 100,000	20,991	885.8	442,323	750.1
Deaths due to heart disease, per 100,000	4,738	199.9	128,806	218.4
Deaths due to all cancers, per 100,000	5,107	215.1	105,645	180.7
Deaths due to diabetes, per 100,000	509	21.5	12,003	20.4
Total births, per 1,000 females aged 15 to 44	25,504	54.8	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	1,916	20.8	33,588	17.8
Low-birthweight births, as a percent of total births	1,858	7.3	56,238	7.9
Late/no prenatal care, as a percent of total births	871	3.4	39,555	5.6
Infant deaths, per 1,000 live births	147	5.8	3,403	4.8
Total hospitalizations, per 10,000	263,642	1,112.6	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	8,163	131.6	198,511	127.9
Adult asthma hospitalizations, per 10,000	1,649	7.0	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	301	5.4	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	491	7.3	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	448	8.7	34,386	27.0
Diabetes hospitalizations, per 10,000	53,872	227.3	1,401,239	237.6
CLRD hospitalizations, per 10,000	6,990	29.5	204,932	34.8
Heart disease hospitalizations, per 10,000	23,760	100.3	609,961	103.4
Total ED visits, per 10,000	847,514	3,576.5	24,036,192	4,076.2
One or more personal doctor(s), as percent	514,082	85.4	13,578,631	86.7
Had a checkup within the past two years, as percent	523,882	87.1	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

Primary Care Physicians

There were nearly 770 primary care physicians practicing in the Central New York region. Thirty-eight percent (38%) were in family or general practice, 33% were in general internal medicine, and another 18% were in general pediatrics. There were over 130 psychiatrists, including child and adolescent psychiatrists, practicing in the Central New York region, or 16.6 per 100,000 total population. Onondaga County had the most primary care physicians in the region per capita, with 124.1 per 100,000 total population, whereas Oswego County had the fewest, with 37.8 per total 100,000 (Table 51 and Figure 25).

Table 51. Primary Care Physicians and Psychiatrists in the Central New York Region, by Specialty, 2017

Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	294	37.2
Internal Medicine (General)	251	31.8
Subtotal	545	69.0
Obstetrics/Gynecology	84	54.1
Pediatrics (General)	139	81.1
Primary Care Total	768	N/A
Psychiatrist	131	16.6

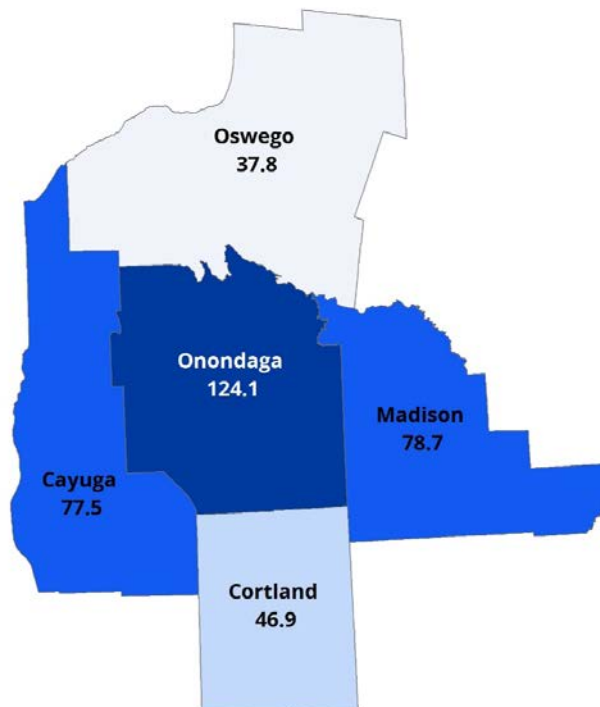
^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

Figure 25. Number of Selected Primary Care Physicians per 100,000 Population in the Central New York Region, by County, 2017

Legend

- 20.1-40.0
- 40.1-60.0
- 60.1-80.0
- 80.1-100.0
- Over 100.1



Employment

Total Health Sector Employment

Between 2012 and 2016, health sector employment in the Central New York region grew by nearly 1,600 jobs, or by slightly over 4%. Employment in ambulatory care increased by almost 1,200 jobs, or by 8%, while jobs in hospital jobs declined by 26, or by less than 1%, during the same period. Home health care facilities added more than 250 jobs between 2012 and 2016, growing by nearly 15%, while nursing home and personal care facilities increased by more than 140 positions, or by slightly less than 2% (Table 52).

Table 52. Number of Health Care Jobs in the Central New York Region, by Setting, 2012-2016

Setting	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Hospitals	13,781	13,869	13,715	13,708	13,755	-26	-0.2%
Ambulatory care (excluding home health)	14,125	14,337	14,677	14,690	15,313	1,188	8.4%
Nursing home and personal care facilities	8,765	8,623	8,589	8,833	8,909	144	1.6%
Home health care	1,829	2,112	2,142	2,103	2,098	269	14.7%
Total	38,500	38,941	39,123	39,334	40,075	1,575	4.1%

Source: New York State Department of Labor, ES-202

Employment and Wage by Occupation

Employment for selected health care occupations for the Central New York Region is presented in Table 53. As reported in the first quart of 2017, registered nurses in the Central New York region had the most jobs (6,900), followed by personal care aides (4,460) and nursing assistants (3,910). Orderlies, nurse midwives, and nuclear medicine technologists had the fewest jobs (80, 70, and 50, respectively).

Wages in selected health care occupations for Central New York are reported in Table 54. These wages are based on NYSDOL 2013-2016 Occupational Wages survey data, which were adjusted to include the first quarter of 2017. Pharmacists earned the highest hourly wage in 2017 (\$61.66), followed by medical and health service managers and physician assistants (\$52.51 and \$51.28, respectively). The lowest wage earners for the Central New York Region were nursing assistants (\$13.61), home health aides (\$13.50), and personal care aides (\$12.87).

Table 53. Number of Jobs in Selected Health Occupations in the Central New York Region, 2017

Occupation	Employment
Registered Nurses	6,900
Personal Care Aides	4,460
Nursing Assistants	3,910
Licensed Practical and Licensed Vocational Nurses	2,940
Home Health Aides	2,170
Social Workers	1,910
Medical Secretaries	850
Dental Assistants	800
Medical Assistants	710
Medical and Health Services Managers	700
Physical Therapists	690
Radiologic Technologists and Technicians	660
Pharmacists	650
Dental Hygienists	650
Nurse Practitioners	620
Pharmacy Technicians	620
Physician Assistants	580
Medical Records and Health Information Technicians	480
Medical and Clinical Laboratory Technologists	440
Mental Health Counselors	390
Occupational Therapists	370
Speech-Language Pathologists	360
Respiratory Therapists	240
Physical Therapist Assistants	210
Surgical Technologists	200
Dietitians and Nutritionists	170
Cardiovascular Technologists and Technicians	120
Pharmacy Aides	100
Physical Therapist Aides	90
Orderlies	80
Nurse Midwives	70
Nuclear Medicine Technologists	50

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Table 54. Average Hourly Wage in Selected Health Occupations in the Central New York Region, 2017

Occupation	Average Wage per Hour	Entry Wage per Hour	Experienced Wage per Hour	Range of Experienced Versus Range
Pharmacists	\$61.66	\$50.00	\$67.49	\$17.49
Medical and Health Services Managers	\$52.51	\$33.85	\$61.85	\$28.00
Physician Assistants	\$51.28	\$40.85	\$56.50	\$15.65
Nurse Practitioners	\$48.11	\$37.40	\$53.46	\$16.06
Nuclear Medicine Technologists	\$37.10	\$31.13	\$40.09	\$8.97
Physical Therapists	\$37.02	\$27.38	\$41.84	\$14.46
Speech-Language Pathologists	\$34.86	\$24.35	\$40.12	\$15.77
Occupational Therapists	\$34.23	\$22.04	\$40.32	\$18.27
Dental Hygienists	\$32.48	\$27.67	\$34.88	\$7.21
Registered Nurses	\$30.72	\$23.97	\$34.09	\$10.12
Dietitians and Nutritionists	\$30.46	\$23.92	\$33.73	\$9.80
Cardiovascular Technologists and Technicians	\$30.04	\$17.85	\$36.14	\$18.29
Radiologic Technologists	\$27.84	\$19.75	\$31.88	\$12.13
Respiratory Therapists	\$27.60	\$21.06	\$30.86	\$9.80
Medical and Clinical Laboratory Technologists	\$26.86	\$20.05	\$30.25	\$10.20
Social Workers	\$25.99	\$18.92	\$29.53	\$10.61
Medical and Clinical Laboratory Technicians	\$24.66	\$20.04	\$26.97	\$6.93
Surgical Technologists	\$22.92	\$17.67	\$25.55	\$7.88
Physical Therapist Assistants	\$21.75	\$17.28	\$23.98	\$6.70
Dietetic Technicians	\$21.15	\$17.28	\$23.09	\$5.80
Medical Records and Health Information Technicians	\$19.98	\$13.71	\$23.11	\$9.39
Licensed Practical and Licensed Vocational Nurses	\$19.25	\$16.50	\$20.63	\$4.12
Mental Health Counselors	\$18.77	\$14.18	\$21.07	\$6.89
Dental Assistants	\$17.19	\$13.34	\$19.12	\$5.78
Medical Assistants	\$16.38	\$13.02	\$18.07	\$5.05
Medical Secretaries	\$15.89	\$13.22	\$17.23	\$4.01
Physical Therapist Aides	\$14.69	\$12.15	\$15.97	\$3.82
Pharmacy Technicians	\$14.42	\$10.42	\$16.42	\$6.00
Nursing Assistants	\$13.61	\$10.92	\$14.95	\$4.03
Home Health Aides	\$13.50	\$10.93	\$14.79	\$3.86
Personal Care Aides	\$12.87	\$10.57	\$14.01	\$3.44
*Information on social workers reflect combined wage data for child, family, school, healthcare, mental health, substance abuse, and all other social workers.				

Source: New York State Department of Labor, Labor Statistics, Occupational Wages

Graduations by Occupation

Graduations for selected health occupations from school years 2012 through 2016 in the Central New York region are presented in Table 55. Between 2012 and 2016, the Central New York region experienced the largest increase in the number of RNs (93), nurse practitioners and clinical nurse specialists (79), and physician assistants (40) graduations. LPNs and medical assistants experienced the largest decrease in number of graduations by 68 and 48 respectively.

Table 55. Number of Graduations in Selected Health Occupations in the Central New York Region, 2012-2016

Occupation	2012	2013	2014	2015	2016	Change 2012-2016	
						Number	Percent
Registered Nurses	404	441	442	512	497	93	23.0%
Nurse Practitioners/Clinical Nurse Specialists	11	27	87	97	90	79	718.2%
Physician Assistants	35	48	58	72	75	40	114.3%
Dental Assistants	39	42	52	49	51	12	30.8%
Medical Records and Health Info Techs	14	29	28	29	22	8	57.1%
Medical and Clinical Laboratory Technologists	14	11	18	19	13	-1	-7.1%
Physical Therapy Assistants/Aides	12	17	17	19	11	-1	-8.3%
Physical Therapists	48	46	52	37	46	-2	-4.2%
Medical Secretaries	45	58	58	58	41	-4	-8.9%
Surgical Technologists	17	11	13	11	13	-4	-23.5%
Pharmacy Technicians	52	33	36	37	42	-10	-19.2%
Social Workers	86	79	88	88	75	-11	-12.8%
Respiratory Therapists	22	34	42	34	9	-13	-59.1%
Medical Assistants	160	162	178	167	112	-48	-30.0%
Licensed Practical Nurses	272	221	257	205	204	-68	-25.0%
Dietetic Technician	6	N/A	N/A	N/A	N/A	N/A	N/A
Nursing Assistants	N/A	N/A	28	25	21	N/A	N/A

Source: Integrated Postsecondary Education Data System

Licensed Health Professionals

Between 2013 and 2017 in the Central New York region, the number of licensed registered nurses increased by nearly 590, followed by social workers (103) and physical therapists (90). Both occupational therapists and dental assistants saw an increase in number of licenses of 20%, while the number of licensed clinical laboratory technicians declined by over 14% (Table 56).

Table 56. Number of Licensed Individuals in Selected Health Occupations in the Central New York Region, 2013-2017

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Registered Nurses	11,571	11,549	11,891	12,017	12,160	589	5.1%
Social Workers	1,400	1,428	1,494	1,490	1,503	103	7.4%
Physical Therapists	778	786	819	852	868	90	11.6%
Physician Assistants	461	482	506	518	540	79	17.1%
Nurse Practitioners	1,121	1,103	1,150	1,174	1,199	78	7.0%
Occupational Therapists	342	356	383	389	411	69	20.2%
Speech-Language Pathologists	520	531	551	549	566	46	8.8%
Dental Assistants	205	215	222	241	246	41	20.0%
Respiratory Therapists	371	385	404	397	395	24	6.5%
Physical Therapy Assistants	264	269	278	276	285	21	8.0%
Pharmacists	793	773	801	805	807	14	1.8%
Dietitian/Nutritionists	204	201	210	217	213	9	4.4%
Dental Hygienists	557	559	568	567	561	4	0.7%
Occupational Therapy Assistants	99	94	94	83	88	-11	-11.1%
Clinical Laboratory Technologists	554	567	569	526	536	-18	-3.2%
Clinical Laboratory Technicians	126	128	127	108	108	-18	-14.3%
Licensed Practical Nurses	5,127	5,171	5,228	4,915	4,884	-243	-4.7%
TOTAL	24,493	24,597	25,295	25,124	25,370	877	3.6%

Source: New York State Education Department, Office of Professions

Demand for Health Workers

Hospitals

Regions within upstate New York were combined due to low survey response rates. Upstate hospitals reported the most difficulty recruiting clinical laboratory technologists, and RNs (2+ years of experience), followed by all NPs, physician assistants, and clinical laboratory technicians. Clinical laboratory technologists, psychiatric NPs and RNs (2+ years of experience), and RNs, (<2 years of experience) were the most difficult to retain (Table 57).

Table 57. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in Upstate New York, 2017

Occupation	Recruitment			Retention		
	Reasons for Difficulty			Reasons for Difficulty		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of exp.)	4.1	90%	33%	3.6	43%	33%
RNs (<2 years of exp.)	3.2	52%	29%	3.5	42%	32%
Nurse Managers	3.5	60%	25%	2.7	32%	21%
Nurse Practitioners (excluding psychiatric)	3.9	67%	22%	3.2	33%	17%
Physician Assistants	3.8	68%	16%	3.1	33%	11%
Pharmacists	2.8	25%	6%	2.1	14%	0%
Psychiatric NPs	3.9	78%	44%	3.6	45%	18%
Psychologists	2.7	43%	14%	2.3	29%	0%
LCSWs	3.0	33%	13%	2.5	20%	13%
LMSWs	2.8	39%	11%	2.6	25%	13%
Physical Therapists	3.5	43%	38%	2.7	25%	35%
Occupational Therapists	3.3	41%	29%	2.5	12%	12%
Speech-Language Path.	3.5	63%	25%	2.8	31%	31%
Clinical Lab Technicians	3.8	71%	29%	3.2	35%	29%
Clinical Lab Technologists	4.4	80%	40%	3.9	53%	37%
Medical Coders	3.1	32%	21%	2.8	30%	20%
Surgical Technicians	3.6	68%	16%	2.7	25%	15%
Care Coordinators	2.1	21%	0%	1.8	13%	0%
Case Managers	2.4	33%	6%	2.1	18%	6%
Care Managers	2.7	33%	7%	2.1	20%	0%
Patient Navigators	1.9	7%	7%	1.8	8%	8%
Community Health Workers	2.6	11%	33%	1.7	9%	18%

- Sixty-four percent (64%) of responding hospitals indicated they had difficulty hiring part-time workers, including RNs, physical therapists, occupational therapists, and nurse practitioners.
- Fifty-two percent (52%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including RNs, LPNs, clinical laboratory technologists, CNAs, and patient care techs.
- Sixty-five percent (65%) of respondents reported that they were anticipating expanding in clinical titles, while only 25% indicated they were expanding in non-clinical titles.

Nursing Homes

Nursing homes in the Central New York Region reported in 2017 that experienced RNs were the most difficult to recruit, followed by nurse directors and managers, newly licensed RNs, LPNs, and MDS coordinators (Table 58). Newly licensed RNs were the most difficult occupation to retain for nursing homes in the Central New York region, followed by CNAs, nurse directors and managers, and experienced RNs.

Table 58. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in the Central New York Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	3.2	3.8	84.6%	7.7%
Dietitians/Nutritionists	2.9	2.3	33.3%	11.1%
Licensed Practical Nurses	4.0	3.6	71.4%	14.3%
Occupational Therapists	3.2	2.6	44.4%	0.0%
Occupational Therapy Assistants	3.3	2.6	14.3%	0.0%
Physical Therapists	3.1	2.6	44.4%	0.0%
Physical Therapist Assistants	2.7	2.6	0.0%	0.0%
Registered Nurses (RNs)				
Newly Licensed RNs	4.3	4.1	75.0%	16.7%
Experienced RNs	4.8	3.7	84.6%	7.7%
MDS Coordinators	4.0	2.8	60.0%	10.0%
Nurse Directors/Managers	4.4	3.8	76.9%	7.7%
Social Workers (SWs)				
Licensed Clinical Social Workers	2.8	2.4	22.2%	0.0%
Licensed Master Social Workers	3.2	2.8	30.0%	10.0%
Speech-Language Pathologists	3.6	3.3	57.1%	0.0%

- Fifty-three percent (53%) of nursing homes reported difficulty hiring part-time workers.
- Eighty-seven percent (87%) of nursing homes indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Sixty percent (60%) of nursing homes reported expanding clinical services next year, and none reported expanding non-clinical services.

Home Health Care Agencies

Home health care agencies in the Central New York region reported the most difficulty recruiting homemakers, followed by home health aides, RNs, and personal care aides (Table 59). Homemakers, home health aides, and personal care aides were the most difficult to retain.

Table 59. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in the Central New York, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Home Health Aides	4.2	3.9	74%	32%
Homemakers	4.6	4.0	80%	0%
Personal Care Aides	3.9	3.9	71%	86%
Licensed Practical Nurses	3.2	2.7	25%	33%
Occupational Therapists	3.0	1.3	0%	25%
Physical Therapists	3.3	1.3	25%	25%
Registered Nurses	4.1	2.8	53%	47%
Respiratory Therapists	3.5	1.5	0%	50%
Licensed Clinical Social Workers	2.0	1.5	0%	0%
Licensed Master's Social Workers	3.0	2.3	0%	25%

- Sixty-three percent (63%) of home health care agencies indicated difficulty hiring full-time workers.
- Fifty-eight percent (58%) of home health care agencies indicated difficulty hiring part-time workers.
- Seventy-two percent (72%) of home health care agencies indicated difficulty hiring workers for off-shifts (evenings, nights, and weekends).
- Fifty-seven percent (57%) of home health care agencies indicated difficulty hiring bilingual workers.
- Forty-seven percent (47%) of respondents indicated that they would be expanding their professional workforce (eg. licensed PNs, RNs, social workers, others) within the next year.
- Seventy-five percent (75%) of respondents indicated that they would be expanding their paraprofessional workforce services (eg. home health aides, personal care aides, others) within the next year.
- Twenty-five (25%) of respondents indicated that they would be expanding their non-clinical workforce (eg. managers, medical billers, schedulers, information technology workers, others) within the next year.

FQHCs

FQHCs in the Central New York region had the most difficulty recruiting psychiatric NPs, psychiatrists, and substance abuse counselors. FQHCs in the region had the most difficulty retaining psychiatric NPs and dentists (Table 60).

Table 60. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in the Central New York Region, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	4.0	3.5
	Internal Medicine	3.7	4.0
	Ob/Gyn	3.0	3.0
	Pediatricians	3.5	3.0
	Physician Assistants (PAs)	2.7	3.0
Nurse Practitioners	Overall - All Specialties	2.3	3.3
	Pediatric	2.0	4.0
	Adult	2.0	4.0
	Family	2.8	3.3
	Psychiatric	5.0	5.0
Nurses	Registered Nurses	4.0	2.0
	Licensed Practical Nurses	2.7	2.0
Behavioral Health	Psychiatrists	5.0	0.0
	Psychologists	0.0	0.0
	Substance Abuse Counselors	5.0	3.0
	Social Workers	4.5	3.0
Oral Health	Dentists	4.0	5.0
	Dental Hygienists	3.0	3.0
Coordination/Patient Care	Care Coordinators	3.0	3.0
	Case Managers	3.0	3.0
	HIV Counselors	3.0	3.0
Patient/Community Education	Community Health Workers	3.0	2.5
	Patient Health Educators	3.0	2.5
	Nutritionists/Nutrition Educators	2.5	2.0
Enabling Services	Patient Health Navigators	3.0	3.0
	Outreach Workers	3.0	3.0
	Transportation Workers	4.0	2.0
	Interpreters	3.5	3.0
Administrative Support	IT Systems Admin/Maintenance	4.0	3.0
Others	Physical Therapists	0.0	0.0
	Occupational Therapists	0.0	0.0

- Eighty percent (80%) of FQHCs in this region indicated plans to expand services.

Employment Projections by Health Occupation

According to the NYSDOL, the largest number of average annual job openings projected in the Central New York region between 2014 and 2024 will be for RNs (270), personal care aides (150), nursing assistants (150), and home health aides (140) (Table 61).

Table 61. Employment Projections for Selected Health Occupations in the Central New York Region, 2014-2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Openings ^a
			Number	Percent	
Home Health Aides	2,640	3,440	800	30.3%	140
Personal Care Aides	4,790	5,870	1,080	22.6%	150
Registered Nurses	6,960	8,060	1,100	15.8%	270
Nursing Assistants	4,040	4,620	580	14.4%	150
Social Workers	2,100	2,380	280	13.3%	70
Licensed Practical and Licensed Vocational Nurses	2,940	3,400	460	15.7%	130
Medical Assistants	680	820	140	20.6%	20
Physical Therapists	840	1,070	230	27.4%	40
Emergency Medical Technicians and Paramedics	680	910	230	33.8%	30
Medical and Health Services Managers	920	1,020	100	10.9%	30
Dental Assistants	630	740	110	17.5%	30
Nurse Practitioners	480	650	170	35.4%	30
Physician Assistants	460	590	130	28.3%	20
Clinical, Counseling, and School Psychologists	790	900	110	13.9%	30
Speech-Language Pathologists	480	570	90	18.8%	20
Dental Hygienists	620	740	120	19.4%	20
Occupational Therapists	440	540	100	22.7%	20
Pharmacy Technicians	530	610	80	15.1%	20
Medical Records and Health Information Technicians	370	430	60	16.2%	20
Medical and Clinical Laboratory Technicians	280	320	40	14.3%	10
Diagnostic Medical Sonographers	200	250	50	25.0%	10
Radiologic Technologists	550	570	20	3.6%	10
Pharmacists	700	730	30	4.3%	20
Dietitians and Nutritionists	200	240	40	20.0%	0
Medical and Clinical Laboratory Technologists	520	580	60	11.5%	20
Respiratory Therapists	280	320	40	14.3%	10
Surgical Technologists	220	240	20	9.1%	0
Cardiovascular Technologists and Technicians	90	100	10	11.1%	0

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the profession.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024

D. Finger Lakes

The Finger Lakes region includes the counties of Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne, Wyoming, and Yates.

Population

The population of the Finger Lakes region had a lower percentage of individuals below 100% and 200% of the FPL and was slightly older than the population of the state as a whole. Additionally, the Finger Lakes region was less racially and ethnically diverse than statewide. The region also had a higher percentage of individuals with high school or equivalent degrees and associate degrees but a lower percentage of individuals with bachelor's degrees or higher compared with the statewide percentages (Table 62).

Table 62. Selected Population Characteristics in the Finger Lakes Region, 2011-2015 (5-Year Average)

Population Characteristics ^a	Region		Statewide Percent
	Number	Percent	
Total population	1,219,204	N/A	N/A
Population under 100% FPL	167,262	13.7%	15.3%
Population under 200% FPL	364,626	29.9%	31.6%
Population aged birth to 17 years	261,358	21.4%	21.6%
Population aged 65 and older	189,210	15.5%	14.3%
Population female aged 15 to 44	233,869	19.2%	20.6%
Women aged 15 to 19 who had a birth in past 12 mos.	571	<0.1%	<0.1%
Women aged 20 to 34 who had a birth in past 12 mos.	10,944	0.9%	0.8%
Women aged 35 to 50 who had a birth in past 12 mos.	2,716	0.2%	0.3%
Black/African American, non-Hispanic	123,798	10.2%	14.4%
Hispanic/Latino	76,433	6.3%	18.4%
Asian/Pacific Islander, non-Hispanic	30,445	2.5%	7.9%
American Indian/Native Alaskan, non-Hispanic	2,748	0.2%	0.2%
Two or more/other races	21,637	1.8%	1.7%
Less than high school education	84,978	10.3%	14.4%
High school or equivalent	387,221	46.7%	42.9%
Associate degree	100,422	12.1%	8.5%
Bachelor's degree	144,217	17.4%	19.4%
Master's degree or higher	111,907	13.5%	14.8%
Home Ownership	666,695	70.3%	56.2%

^a Education levels and rates are based on individuals aged 25 years and older.

Source: US Census, American Community Survey, 2011-2015 (5-Year Average); Behavioral Risk Factor Surveillance System, 2016

Health Status

The Finger Lakes region had higher rates of total deaths, deaths due to all cancers per 100,000 population, and infant deaths than New York State. The total birth rate in the Finger Lakes region was lower than New York State but the teen birth rate was slightly higher. The Finger Lakes region had lower rates of total hospitalizations, preventable hospitalizations, ED visits, and asthma hospitalizations (adult and pediatric) than New York State (Table 63).

Table 63. Selected Health Indicators in the Finger Lakes Region

Health Indicator	Region		Statewide	
	Number	Rate	Number	Rate
Total deaths, per 100,000	32,291	882.8	442,323	750.1
Deaths due to heart disease, per 100,000	7,502	205.1	128,806	218.4
Deaths due to all cancers, per 100,000	7,564	206.9	105,645	180.7
Deaths due to diabetes, per 100,000	705	19.3	12,003	20.4
Total births, per 1,000 females aged 15 to 44	38,852	55.4	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	2,327	18.3	33,588	17.8
Low-birthweight births, as a percent of total births	2,985	7.7	56,238	7.9
Late/no prenatal care, as a percent of total births	1,353	3.7	39,555	5.6
Infant deaths, per 1,000 live births	234	6.0	3,403	4.8
Total hospitalizations, per 10,000	392,938	1,074.3	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	11,336	118.0	198,511	127.9
Adult asthma hospitalizations, per 10,000	3,105	8.5	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	459	5.2	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	1,060	10.2	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	794	10.2	34,386	27.0
Diabetes hospitalizations, per 10,000	80,517	220.1	1,401,239	237.6
CLRD hospitalizations, per 10,000	9,421	25.8	204,932	34.8
Heart disease hospitalizations, per 10,000	36,494	99.8	609,961	103.4
Total ED visits, per 10,000	1,338,802	3,660.2	24,036,192	4,076.2
One or more personal doctor(s), as percent	788,759	83.2	13,578,631	86.7
Had a checkup within the past two years, as percent	841,121	88.7	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

Primary Care Physicians

There were nearly 1,500 primary care physicians practicing in the Finger Lakes region in 2017. Forty-six percent (46%) were in general internal medicine, 26% were in family or general practice, and another 18% were in general pediatrics. There were more than 200 psychiatrists, including child and adolescent psychiatrists, practicing in the Finger Lakes region, or approximately 16.6 per 100,000 total population. Monroe County had the highest rate of primary care physicians, with 157.5 per 100,000 total population, and Seneca County had the lowest rate with 28.5 per 100,000 total population (Table 64 and Figure 26).

Table 64. Primary Care Physicians and Psychiatrists in the Finger Lakes Region, by Specialty, 2017

Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	380	31.2
Internal Medicine (General)	683	56.0
Subtotal	1063	87.2
Obstetrics/Gynecology	144	61.6
Pediatrics (General)	273	104.5
Primary Care Total	1480	N/A
Psychiatrist	202	16.6

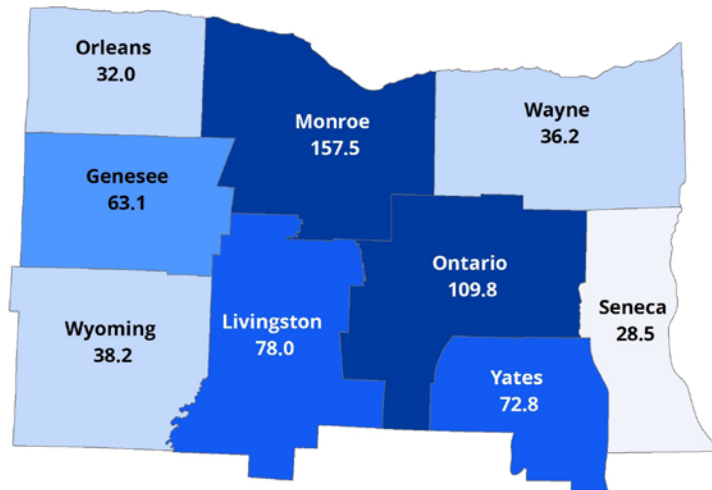
^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

Figure 26. Number of Selected Primary Care Physicians per 100,000 Population in the Finger Lakes Region, by County, 2017

Legend

- 20.1-40.0
- 40.1-60.0
- 60.1-80.0
- 80.1-100.0
- Over 100.1



Employment

Total Health Sector Employment

Between 2012 and 2016, health sector employment throughout the Finger Lakes region grew by more than 4,600 jobs, or by over 7%. Employment in hospitals increased by nearly 2,600 jobs, or by almost 9% and employment in nursing home and personal care facilities grew by over 900 jobs, or by 7%, during the same period. Ambulatory care had the lowest percentage increase in jobs (2%) between 2012 and 2016, adding the least number of jobs (325) (Table 65).

Table 65. Number of Health Care Jobs in the Finger Lakes Region, by Setting, 2012-2016

Setting	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Hospitals	29,436	29,546	30,406	30,977	32,027	2,591	8.8%
Ambulatory care (excluding home health)	16,538	17,225	17,497	17,067	16,863	325	2.0%
Nursing home and personal care facilities	12,817	13,059	13,299	13,624	13,757	940	7.3%
Home health care	3,732	3,527	3,589	3,924	4,478	746	20.0%
Total	62,523	63,357	64,791	65,592	67,125	4,602	7.4%

Source: New York State Department of Labor, ES-202

Employment and Wage by Occupation

Employment for selected health care occupations is presented in Table 66. Registered nurses accounted for the most jobs in the Finger Lakes Region in 2017 (12,160), followed by personal care aides (8,210) and nursing assistants (6,300). Nuclear medicine technologists and certified registered nurse anesthetists had the fewest jobs (70, and 60, respectively) in the region.

Wages in selected health care occupations for the Finger Lakes Region are reported in Table 67. These wages were based on NYSDOL 2013-2016 Occupational Wages survey data, which were adjusted to include the first quarter of 2017. Certified registered nurse anesthetists earned the highest hourly wage in 2017 (\$81.95), followed by medical and health services managers and pharmacists (\$56.99 and \$53.49, respectively). The lowest wage earners in the Finger Lakes region were home health aides (\$13.30) and personal care aides (\$12.82).

Table 66. Number of Jobs in Selected Health Occupations in the Finger Lakes Region, 2017

Occupation	Employment
Registered Nurses	12,160
Personal Care Aides	8,210
Nursing Assistants	6,300
Home Health Aides	4,500
Licensed Practical and Licensed Vocational Nurses	3,970
Social Workers	3,490
Medical and Health Services Managers	1,290
Pharmacy Technicians	1,250
Nurse Practitioners	1,130
Dental Assistants	1,100
Physical Therapists	1,070
Dental Hygienists	1,050
Medical Assistants	990
Medical Secretaries	980
Medical and Clinical Laboratory Technicians	950
Radiologic Technologists and Technicians	930
Medical and Clinical Laboratory Technologists	920
Pharmacists	870
Physician Assistants	810
Speech-Language Pathologists	770
Occupational Therapists	670
Mental Health Counselors	560
Medical Records and Health Information Technicians	500
Respiratory Therapists	410
Surgical Technologists	350
Physical Therapist Assistants	330
Dietitians and Nutritionists	310
Orderlies	270
Radiation Therapists	140
Occupational Therapy Assistants	140
Cardiovascular Technologists and Technicians	110
Dietetic Technicians	110
Physical Therapist Aides	110
Nuclear Medicine Technologists	70
Certified Registered Nurse Anesthetists	60

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Table 67. Average Hourly Wage in Selected Health Occupations in the Finger Lakes Region, 2017

Occupation	Average Hourly Wage	Entry Wage	Experienced Wage	Range Experienced Versus Entry Wages
Certified Registered Nurse Anesthetists	\$81.95	\$71.15	\$87.35	\$16.20
Medical and Health Services Managers	\$56.99	\$33.85	\$68.55	\$34.70
Pharmacists	\$53.49	\$41.84	\$59.32	\$17.48
Physician Assistants	\$48.06	\$40.79	\$51.70	\$10.91
Nurse Practitioners	\$45.06	\$37.73	\$48.74	\$11.01
Physical Therapists	\$37.62	\$30.15	\$41.35	\$11.20
Occupational Therapists	\$36.33	\$27.01	\$40.99	\$13.98
Radiation Therapists	\$35.04	\$26.33	\$39.39	\$13.07
Nuclear Medicine Technologists	\$33.21	\$24.92	\$37.35	\$12.43
Speech-Language Pathologists	\$32.18	\$23.09	\$36.73	\$13.63
Registered Nurses	\$30.33	\$24.76	\$33.12	\$8.36
Dental Hygienists	\$30.03	\$27.31	\$31.39	\$4.09
Medical and Clinical Laboratory Technologists	\$28.98	\$24.05	\$31.45	\$7.40
Dietitians and Nutritionists	\$28.39	\$20.34	\$32.42	\$12.08
Respiratory Therapists	\$26.74	\$21.19	\$29.51	\$8.32
Radiologic Technologists and Technicians	\$26.25	\$20.99	\$28.88	\$7.89
Social Workers	\$25.46	\$17.75	\$29.32	\$11.56
Cardiovascular Technologists and Technicians	\$23.75	\$16.22	\$27.52	\$11.31
Occupational Therapy Assistants	\$23.61	\$19.39	\$25.72	\$6.32
Physical Therapist Assistants	\$23.47	\$18.50	\$25.95	\$7.45
Licensed Practical and Licensed Vocational Nurses	\$19.59	\$16.38	\$21.19	\$4.81
Dental Assistants	\$19.43	\$16.15	\$21.06	\$4.91
Medical Records and Health Information Technicians	\$19.04	\$13.14	\$21.99	\$8.84
Surgical Technologists	\$18.65	\$15.23	\$20.36	\$5.13
Mental Health Counselors	\$17.54	\$11.17	\$20.72	\$9.54
Medical and Clinical Laboratory Technicians	\$16.07	\$11.25	\$18.49	\$7.23
Medical Assistants	\$16.04	\$12.93	\$17.60	\$4.67
Medical Secretaries	\$15.91	\$12.92	\$17.40	\$4.48
Dietetic Technicians	\$14.84	\$9.70	\$17.45	\$7.75
Physical Therapist Aides	\$14.70	\$11.87	\$16.11	\$4.24
Pharmacy Technicians	\$14.11	\$10.87	\$15.73	\$4.86
Nursing Assistants	\$13.79	\$11.10	\$15.13	\$4.03
Orderlies	\$13.57	\$10.72	\$15.00	\$4.28
Home Health Aides	\$13.30	\$10.75	\$14.57	\$3.82
Personal Care Aides	\$12.82	\$10.38	\$14.03	\$3.65
* Information on social workers reflect combined wage data for child, family, school, healthcare, mental health, substance abuse, and all other social workers.				

Source: New York State Department of Labor, Labor Statistics, Occupational Wages

Graduations by Occupation

Graduations for selected health occupations from school years 2012 through 2016 for the Finger Lakes region are reported in Table 68. Between 2012 and 2016, the Finger Lakes region experienced the largest increase in the number of RN (373) graduations, followed by graduations for medical and health service managers (25), LPNs (18), and physical therapists (15). Four occupations experienced losses. Medical assistants (120) and medical secretaries (19) experienced the largest decrease in graduations during the same time period.

Table 68. Number of Graduations in Selected Health Occupations in the Finger Lakes Region, 2012-2016

Occupation	2012	2013	2014	2015	2016	Change, 2012-2016	
						Number	Percent
Registered Nurses	973	907	1,045	1,179	1,346	373	38.3%
Medical and Health Service Managers	35	41	26	65	60	25	71.4%
Licensed Practical Nurses	257	265	260	319	275	18	7.0%
Physical Therapists	34	36	42	43	49	15	44.1%
Occupational Therapists	26	26	32	31	37	11	42.3%
Social Workers	135	119	130	139	146	11	8.1%
Nurse Practitioners/Clinical Nurse Specialists	58	58	61	71	67	9	15.5%
Pharmacists	60	66	73	76	69	9	15.0%
Dental Assistants	75	81	71	92	83	8	10.7%
Physical Therapy Assistants/Aides	22	26	19	23	27	5	22.7%
Physician Assistants	23	25	24	4	27	4	17.4%
Medical Records and Health Info Techs	20	17	19	23	18	-2	-10.0%
Dental Hygienists	31	42	29	30	25	-6	-19.4%
Medical Secretaries	78	77	83	85	59	-19	-24.4%
Medical Assistants	177	157	139	122	57	-120	-67.8%
Medical and Clinical Laboratory Technicians	N/A	N/A	N/A	15	9	N/A	N/A
Medical and Clinical Laboratory Technologist	N/A	3	6	5	14	N/A	N/A
Radiologic Technologists	29	26	N/A	N/A	N/A	N/A	N/A
Respiratory Therapists	26	39	21	21	N/A	N/A	N/A
Speech-Language Pathologists	N/A	N/A	2	N/A	N/A	N/A	N/A

Source: Integrated Postsecondary Education Data System

Licensed Health Professionals

Between 2013 and 2017, the number of licensed RNs in the Finger Lakes region increased by more than 1,000, or by 6%. Additionally, there were increases of 150 (10%) for NPs and of 135 (18%) for PAs within the region. Clinical laboratory technicians had the largest percentage increase (41%), followed by physical therapy assistants (21%), physician assistants (18%), and dental assistants (15%). The number of licensed clinical laboratory technologists (-2%), LPNs, and occupational therapy assistants (-15%) all decreased during the same time period (Table 69).

Table 69. Number of Licensed Individuals in Selected Health Occupations in the Finger Lakes Region, 2013-2017

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Registered Nurses	16,900	16,898	17,545	17,823	17,936	1,036	6.1%
Nurse Practitioners	1,540	1,559	1,609	1,665	1,696	156	10.1%
Physician Assistants	734	761	809	825	869	135	18.4%
Physical Therapists	1,056	1,079	1,144	1,155	1,177	121	11.5%
Social Workers	2,375	2,427	2,511	2,480	2,472	97	4.1%
Occupational Therapists	664	682	711	724	754	90	13.6%
Physical Therapy Assistants	307	323	345	367	372	65	21.2%
Speech-Language Pathologists	1,069	1,078	1,112	1,098	1,129	60	5.6%
Respiratory Therapists	330	344	348	353	374	44	13.3%
Pharmacists	1,173	1,148	1,224	1,255	1,214	41	3.5%
Dental Assistants	233	244	256	260	268	35	15.0%
Clinical Laboratory Technicians	69	68	75	82	97	28	40.6%
Dental Hygienists	1,060	1,070	1,083	1,076	1,078	18	1.7%
Dietitian/Nutritionists	269	269	281	281	276	7	2.6%
Clinical Laboratory Technologists	936	942	956	912	916	-20	-2.1%
Licensed Practical Nurses	6,386	6,456	6,578	6,274	6,355	-31	-0.5%
Occupational Therapy Assistants	213	201	197	184	181	-32	-15.0%
TOTAL	35,314	35,549	36,784	36,814	37,164	1,850	5.2%

Source: New York State Education Department, Office of Professions

Demand for Health Workers

Hospitals

Regions within upstate New York were combined due to low survey response rates. Upstate hospitals are reported the most difficulty recruiting clinical laboratory technologists, and RNs (2+ years of experience), followed by all NPs, physician assistants, and clinical laboratory technicians. Clinical laboratory technologists, psychiatric NPs and RNs (2+ years of experience), and RNs, (<2 years of experience) were the most difficult to retain (Table 70).

Table 70. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in Upstate New York, 2017

Occupation	Recruitment			Retention		
	Reasons for Difficulty			Reasons for Difficulty		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of exp.)	4.1	90%	33%	3.6	43%	33%
RNs (<2 years of exp.)	3.2	52%	29%	3.5	42%	32%
Nurse Managers	3.5	60%	25%	2.7	32%	21%
Nurse Practitioners (excluding psychiatric)	3.9	67%	22%	3.2	33%	17%
Physician Assistants	3.8	68%	16%	3.1	33%	11%
Pharmacists	2.8	25%	6%	2.1	14%	0%
Psychiatric NPs	3.9	78%	44%	3.6	45%	18%
Psychologists	2.7	43%	14%	2.3	29%	0%
LCSWs	3.0	33%	13%	2.5	20%	13%
LMSWs	2.8	39%	11%	2.6	25%	13%
Physical Therapists	3.5	43%	38%	2.7	25%	35%
Occupational Therapists	3.3	41%	29%	2.5	12%	12%
Speech-Language Path.	3.5	63%	25%	2.8	31%	31%
Clinical Lab Technicians	3.8	71%	29%	3.2	35%	29%
Clinical Lab Technologists	4.4	80%	40%	3.9	53%	37%
Medical Coders	3.1	32%	21%	2.8	30%	20%
Surgical Technicians	3.6	68%	16%	2.7	25%	15%
Care Coordinators	2.1	21%	0%	1.8	13%	0%
Case Managers	2.4	33%	6%	2.1	18%	6%
Care Managers	2.7	33%	7%	2.1	20%	0%
Patient Navigators	1.9	7%	7%	1.8	8%	8%
Community Health Workers	2.6	11%	33%	1.7	9%	18%

- Sixty-four percent (64%) of responding hospitals indicated they had difficulty hiring part-time workers, including RNs, physical therapists, occupational therapists, and nurse practitioners.
- Fifty-two percent (52%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including RNs, LPNs, clinical laboratory technologists, CNAs, and patient care techs.
- Sixty-five percent (65%) of respondents reported that they were anticipating expanding in clinical titles, while only 25% indicated they were expanding in non-clinical titles.

Nursing Homes

Nursing homes in the Finger Lakes region reported in 2017 that MDS coordinators were the hardest occupation to recruit, followed by experienced RNs, nurse directors and managers, licensed practical nurses, and newly licensed RNs. Nursing homes in the region also reported the most difficulty retaining newly licensed RNs, followed by CNAs, LPNs, and experienced RNs (Table 71).

Table 71. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in the Finger Lakes Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	3.2	4.0	55.0%	30.0%
Dietitians/Nutritionists	2.9	2.5	35.7%	7.1%
Licensed Practical Nurses	4.2	3.8	80.0%	35.0%
Occupational Therapists	2.8	2.6	21.4%	14.3%
Occupational Therapy Assistants	2.9	2.6	21.4%	14.3%
Physical Therapists	2.6	2.4	14.3%	14.3%
Physical Therapist Assistants	2.6	2.4	14.3%	14.3%
Registered Nurses (RNs)				
Newly Licensed RNs	4.1	4.1	64.7%	41.2%
Experienced RNs	4.3	3.8	70.0%	50.0%
MDS Coordinators	4.5	3.5	64.7%	29.4%
Nurse Directors/Managers	4.3	3.5	52.6%	36.8%
Social Workers (SWs)				
Licensed Clinical Social Workers	3.0	3.0	28.6%	35.7%
Licensed Master Social Workers	3.3	3.0	37.5%	31.3%
Speech-Language Pathologists	3.0	2.9	23.1%	15.4%

- Sixty-seven percent (67%) reported difficulty hiring part-time workers.
- Sixty-five percent (65%) indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Twenty-five percent (25%) of nursing homes reported expansion of clinical services next year, and no nursing homes reported expanding non-clinical services next year.

Home Health Care Agencies

Home health care agencies in the Finger Lakes reported the most difficulty recruiting RNs, followed by LPNs, personal care aides, and home health aides. Similarly, respondents reported the most difficulty retaining home health aides, and personal care aides, followed by licensed practical nurses (Table 72).

Table 72. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in the Finger Lakes, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Home Health Aides	3.5	3.8	58%	50%
Homemakers	1.7	2.0	0%	0%
Personal Care Aides	3.5	3.7	55%	73%
Licensed Practical Nurses	3.8	3.4	63%	50%
Occupational Therapists	3.0	2.5	50%	0%
Physical Therapists	3.0	2.5	50%	0%
Registered Nurses	4.0	2.9	44%	44%
Respiratory Therapists	2.5	2.5	0%	0%
Licensed Clinical Social Workers	3.0	2.0	0%	33%
Licensed Master's Social Workers	3.3	2.3	25%	50%

- Sixty-four percent (64%) of home health care agencies indicated difficulty hiring full-time workers.
- Fifty-eight percent (58%) of home health care agencies indicated difficulty hiring part-time workers.
- Eighty-three percent (83%) of home health care agencies indicated difficulty hiring workers for off-shifts (evenings, nights, and weekends).
- Seventy-five percent (75%) of home health care agencies indicated difficulty hiring bilingual workers.
- Thirty-three percent (33%) of respondents indicated that they would be expanding their professional workforce (eg. licensed PNs, RNs, social workers, others) within the next year.
- Ninety-two percent (92%) of respondents indicated that they would be expanding their paraprofessional workforce (eg. home health aides, personal care aides, others) within the next year.

FQHCs

FQHCs in the Finger Lakes region had the most difficulty recruiting internal medicine physicians, psychiatric NPs, and substance abuse counselors. FQHCs in the Finger Lakes region had the most difficulty retaining psychiatric NPs and family practice NPs (Table 73).

Table 73. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in the Finger Lakes Region, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	4.4	3.0
	Internal Medicine	5.0	3.5
	Ob/Gyn	0.0	0.0
	Pediatricians	4.5	2.0
	Physician Assistants (PAs)	2.3	2.7
Nurse Practitioners	Overall – All Specialties	3.0	3.5
	Pediatric	3.0	2.0
	Adult	0.0	0.0
	Family	3.3	4.0
	Psychiatric	5.0	5.0
Nurses	Registered Nurses	3.8	2.8
	Licensed Practical Nurses	2.7	3.3
Behavioral Health	Psychiatrists	0.0	0.0
	Psychologists	0.0	0.0
	Substance Abuse Counselors	5.0	3.0
	Social Workers	4.5	3.0
Oral Health	Dentists	4.3	3.3
	Dental Hygienists	3.0	2.3
Coordination/Patient Care	Care Coordinators	4.0	3.0
	Case Managers	4.0	3.0
	HIV Counselors	4.0	3.0
Patient/Community Education	Community Health Workers	4.0	3.0
	Patient Health Educators	4.0	3.0
	Nutritionists/Nutrition Educators	4.0	3.0
Enabling Services	Patient Health Navigators	4.0	3.0
	Outreach Workers	4.0	3.5
	Transportation Workers	3.5	3.0
	Interpreters	4.5	2.0
Administrative Support	IT Systems Admin/Maintenance	2.5	2.0
Others	Physical Therapists	0.0	0.0
	Occupational Therapists	0.0	0.0

- All (100%) survey respondents indicated that they anticipated expanding services.
- Sixty percent (60%) of FQHCs in this region indicated difficulty hiring bilingual staff; Spanish was the language most needed.

Employment Projections by Health Occupation

According to the NYSDOL, the largest number of average annual job openings projected in the Finger Lakes region between 2014 and 2024 will be for RNs (440), nursing assistants (270), and home health aides (240) (Table 74).

Table 74. Employment Projections for Selected Health Occupations in the Finger Lakes Region, 2014-2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Openings ^a
			Number	Percent	
Home Health Aides	4,860	6,100	1,240	25.5%	240
Personal Care Aides	7,740	9,400	1,660	21.5%	230
Registered Nurses	12,650	14,010	1,360	10.8%	440
Nursing Assistants	7,580	8,530	950	12.5%	270
Social Workers	3,420	3,760	340	9.9%	120
Licensed Practical and Licensed Vocational Nurses	4,270	4,640	370	8.7%	160
Medical Assistants	920	1,090	170	18.5%	40
Physical Therapists	1,180	1,470	290	24.6%	60
Emergency Medical Technicians and Paramedics	1,290	1,770	480	37.2%	70
Medical and Health Services Managers	1,630	1,800	170	10.4%	60
Dental Assistants	1,170	1,330	160	13.7%	50
Nurse Practitioners	1,150	1,450	300	26.1%	60
Physician Assistants	960	1,180	220	22.9%	40
Clinical, Counseling, and School Psychologists	920	1,060	140	15.2%	30
Speech-Language Pathologists	820	950	130	15.9%	30
Dental Hygienists	1,280	1,440	160	12.5%	40
Occupational Therapists	690	790	100	14.5%	20
Pharmacy Technicians	980	1,040	60	6.1%	20
Medical Records and Health Information Technicians	540	610	70	13.0%	20
Medical and Clinical Laboratory Technicians	1,090	1,250	160	15.0%	50
Diagnostic Medical Sonographers	370	450	80	22.0%	20
Radiologic Technologists	1,080	1,160	80	7.4%	30
Pharmacists	1,000	1,010	10	1.0%	20
Dietitians and Nutritionists	320	360	40	12.5%	0
Medical and Clinical Laboratory Technologists	900	980	80	8.9%	30
Respiratory Therapists	460	500	40	8.7%	10
Surgical Technologists	330	350	20	6.1%	0
Cardiovascular Technologists and Technicians	170	220	50	29.4%	0
Psychiatric Aides	280	290	10	3.6%	10
Orderlies	510	570	60	11.8%	20

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the profession.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024

E. Hudson Valley

The Hudson Valley region includes the counties of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester.

Population

The Hudson Valley region had a lower percentage of individuals below 100% and 200% of the FPL and was less racially and ethnically diverse than the state overall. Additionally, compared with the state, the region had a greater percentage of the population under 18 years old and a larger percentage of its population with a bachelor's degree or higher (Table 75).

Table 75. Selected Population Characteristics in the Hudson Valley Region, 2011-2015 (5-Year Average)

Population Characteristics ^a	Region		Statewide Percent
	Number	Percent	
Total population	2,317,433	N/A	N/A
Population under 100% FPL	250,200	10.8%	15.3%
Population under 200% FPL	552,231	23.8%	31.6%
Population aged birth to 17 years	545,532	23.5%	21.6%
Population aged 65 and older	341,221	14.7%	14.3%
Population female aged 15 to 44	430,668	18.6%	20.6%
Women aged 15 to 19 who had a birth in past 12 mos.	1,025	<0.1%	<0.1%
Women aged 20 to 34 who had a birth in past 12 mos.	17,221	0.7%	0.8%
Women aged 35 to 50 who had a birth in past 12 mos.	8,862	0.4%	0.3%
Black/African American, non-Hispanic	246,706	10.6%	14.4%
Hispanic/Latino	425,419	18.4%	18.4%
Asian/Pacific Islander, non-Hispanic	102,513	4.4%	7.9%
American Indian/Native Alaskan, non-Hispanic	2,839	0.1%	0.2%
Two or more/other races	43,248	1.9%	1.7%
Less than high school education	180,112	11.6%	14.4%
High school or equivalent	646,163	41.6%	42.9%
Associate degree	122,636	7.9%	8.5%
Bachelor's degree	321,734	20.7%	19.4%
Master's degree or higher	281,321	18.1%	14.8%
Home Ownership	1,170,091	66.6%	56.2%

^a Education levels and rates are based on individuals aged 25 years and older.

Source: US Census, American Community Survey, 2011-2015 (5-Year Average); Behavioral Risk Factor Surveillance System, 2016

Health Status

The Hudson Valley region had lower rates of total deaths, deaths due to heart disease, deaths due to diabetes, and deaths due to cancer per 100,000 total population than the state as a whole. The Hudson Valley region had lower rates of asthma hospitalizations (both adult and pediatric), total hospitalizations, preventable hospitalizations, and ED visits, compared to New York State. The Hudson Valley region had a slightly larger percentage of people having routine checkups within the past two years than New York State (Table 76).

Table 76. Selected Health Indicators in the Hudson Valley Region

Health Indicator	Region		Statewide	
	Number	Rate	Number	Rate
Total deaths, per 100,000	50,120	720.7	442,323	750.1
Deaths due to heart disease, per 100,000	14,286	205.4	128,806	218.4
Deaths due to all cancers, per 100,000	12,305	178.1	105,645	180.7
Deaths due to diabetes, per 100,000	1,052	15.1	12,003	20.4
Total births, per 1,000 females aged 15 to 44	78,081	60.5	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	2,920	11.9	33,588	17.8
Low-birthweight births, as a percent of total births	5,662	7.3	56,238	7.9
Late/no prenatal care, as a percent of total births	3,061	4.0	39,555	5.6
Infant deaths, per 1,000 live births	364	4.7	3,403	4.8
Total hospitalizations, per 10,000	764,529	1,099.4	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	20,563	115.2	198,511	127.9
Adult asthma hospitalizations, per 10,000	8,729	12.6	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	1,172	7.1	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	2,654	13.5	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	2,476	15.1	34,386	27.0
Diabetes hospitalizations, per 10,000	140,983	202.7	1,401,239	237.6
CLRD hospitalizations, per 10,000	20,468	29.4	204,932	34.8
Heart disease hospitalizations, per 10,000	66,025	94.9	609,961	103.4
Total ED visits, per 10,000	2,391,152	3,438.5	24,036,192	4,076.2
One or more personal doctor(s), as percent	1,523,182	86.7	13,578,631	86.7
Had a checkup within the past two years, as percent	1,467,153	83.5	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

Primary Care Physicians

There were more than 3,000 primary care physicians practicing in the Hudson Valley region in 2017. Forty-six percent (46%) were in general internal medicine, 19% were in general or family practice, and another 24% were in general pediatrics. There were nearly 900 psychiatrists, including child and adolescent psychiatrists, practicing in the Hudson Valley region, or 37.8 per 100,000 total population. Westchester County had the highest rate of family, general, and internal medicine (general) physicians in the region with 179.4 per 100,000 total population, whereas Sullivan County had the lowest rate with 62.9 per 100,000 total population (Table 77 and Figure 27).

Table 77. Primary Care Physicians and Psychiatrists in the Hudson Valley Region, by Specialty, 2017

Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	570	24.6
Internal Medicine (General)	1,398	60.3
Subtotal	1,968	84.9
Obstetrics/Gynecology	353	82.0
Pediatrics (General)	747	136.9
Primary Care Total	3,068	N/A
Psychiatrist	877	37.8

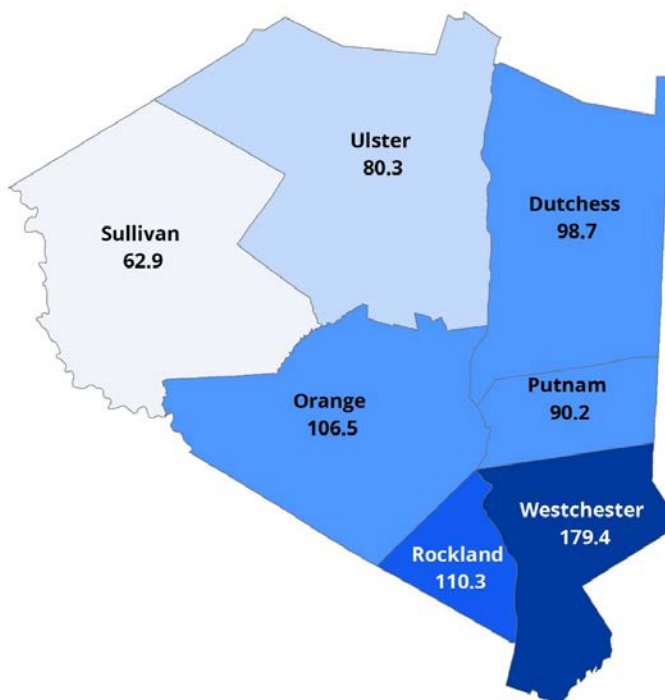
^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

Figure 27. Number of Selected Primary Care Physicians per 100,000 Population in the Hudson Valley Region, by County, 2017

Legend

- 50.1-70.0
- 70.1-90.0
- 90.1-110.0
- 110.1-130.0
- Over 130.1



Employment

Total Health Sector Employment

Between 2012 and 2016, health sector employment in the Hudson Valley region increased by 6%, adding slightly more than 6,700 jobs. All settings in the health sector experienced job growth between 2012 and 2016. Home health care had the largest percentage increase in jobs (15%), followed by ambulatory care and hospitals, both with 6% growth (Table 78).

Table 78. Number of Health Care Jobs in the Hudson Valley Region, by Setting, 2012-2016

Setting	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Hospitals	38,351	37,400	38,157	39,297	40,633	2,282	6.0%
Ambulatory care (excluding home health)	42,068	42,774	42,939	44,305	44,693	2,625	6.2%
Nursing home and personal care facilities	20,767	20,746	21,118	21,325	21,102	335	1.6%
Home health care	10,343	10,782	11,037	11,171	11,847	1,504	14.5%
Total	111,529	111,702	113,251	116,098	118,275	6,746	6.0%

Source: New York State Department of Labor, ES-202

Employment and Wage by Occupation

Employment for selected health care occupations for the Hudson Valley Region is presented in Table 79. As reported in the first quarter of 2017, registered nurses accounted for the most jobs (20,980), followed by personal care aides (16,700) and home health aides (11,620). Cardiovascular technologists and technicians, pharmacy aides, and dietetic technicians had the fewest jobs (310, 170, and 100, respectively).

Wages in selected health care occupations for the Hudson Valley Region are reported in Table 80. These wages are based on NYSDOL 2013-2016 Occupational Wages survey data, which were adjusted to include the first quarter of 2017. Medical and health service managers earned the highest hourly wage in 2017 (\$66.13), followed by pharmacists (\$59.54) and speech-language pathologists (\$57.10). Home health aides (\$13.07) earned the least amount for the selected health occupations in the Hudson Valley region.

Table 79. Number of Jobs in Selected Health Occupations in the Hudson Valley Region, 2017

Occupation	Employment
Registered Nurses	20,980
Personal Care Aides	16,700
Home Health Aides	11,620
Nursing Assistants	11,060
Licensed Practical and Licensed Vocational Nurses	6,010
Social Workers	5,990
Medical and Health Services Managers	2,740
Medical Assistants	2,530
Dental Assistants	2,270
Pharmacists	2,100
Physical Therapists	1,840
Emergency Medical Technicians and Paramedics	1,830
Pharmacy Technicians	1,600
Speech-Language Pathologists	1,450
Occupational Therapists	1,150
Dental Hygienists	1,150
Medical Secretaries	1,130
Nurse Practitioners	950
Mental Health Counselors	950
Physician Assistants	930
Medical Records and Health Information Technicians	870
Medical and Clinical Laboratory Technologists	840
Dietitians and Nutritionists	780
Respiratory Therapists	610
Medical and Clinical Laboratory Technicians	570
Physical Therapist Assistants	530
Physical Therapist Aides	460
Occupational Therapy Assistants	450
Surgical Technologists	430
Orderlies	410
Cardiovascular Technologists and Technicians	310
Pharmacy Aides	170
Dietetic Technicians	100

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Table 80. Average Hourly Wage in Selected Health Occupations in the Hudson Valley Region, 2017

Occupation	Average Hourly Wage	Entry Wage	Experienced Wage	Range Experienced Versus Entry Wages
Medical and Health Service Managers	\$66.13	\$39.93	\$79.23	\$39.30
Pharmacists	\$59.54	\$48.30	\$65.17	\$16.87
Speech-Language Pathologists	\$57.10	\$32.14	\$69.58	\$37.44
Nurse Practitioners	\$55.89	\$44.69	\$61.50	\$16.81
Physician Assistants	\$52.78	\$41.92	\$58.22	\$16.29
Occupational Therapists	\$45.75	\$32.73	\$52.25	\$19.53
Physical Therapists	\$43.84	\$32.82	\$49.35	\$16.53
Dental Hygienists	\$41.26	\$33.79	\$45.00	\$11.22
Registered Nurses	\$39.89	\$29.01	\$45.34	\$16.33
Respiratory Therapists	\$36.63	\$31.82	\$39.04	\$7.22
Medical and Clinical Laboratory Technologists	\$35.77	\$26.93	\$40.19	\$13.26
Dietitians and Nutritionists	\$34.50	\$24.74	\$39.37	\$14.63
Social Workers	\$31.46	\$21.21	\$36.58	\$15.37
Occupational Therapy Assistants	\$30.62	\$23.29	\$34.28	\$10.99
Cardiovascular Technologists and Technicians	\$30.01	\$18.25	\$35.89	\$17.63
Physical Therapist Assistants	\$27.90	\$21.45	\$31.13	\$9.68
Medical and Clinical Laboratory Technicians	\$24.38	\$14.09	\$29.52	\$15.43
Licensed Practical and Licensed Vocational Nurses	\$24.27	\$19.35	\$26.73	\$7.38
Surgical Technologists	\$24.00	\$17.79	\$27.10	\$9.31
Mental Health Counselors	\$22.67	\$15.01	\$26.50	\$11.49
Medical Records and Health Information Technicians	\$21.79	\$14.64	\$25.36	\$10.72
Emergency Medical Technicians and Paramedics	\$21.78	\$14.06	\$25.64	\$11.58
Dental Assistants	\$20.38	\$15.39	\$22.87	\$7.48
Dietetic Technicians	\$20.34	\$16.97	\$22.02	\$5.05
Medical Secretaries	\$19.27	\$14.60	\$21.61	\$7.00
Medical Assistants	\$17.39	\$13.50	\$19.34	\$5.84
Pharmacy Aides	\$16.78	\$11.37	\$19.50	\$8.13
Nursing Assistants	\$16.71	\$13.50	\$18.32	\$4.81
Pharmacy Technicians	\$15.13	\$11.48	\$16.95	\$5.47
Orderlies	\$14.74	\$10.45	\$16.89	\$6.44
Physical Therapist Aides	\$14.27	\$10.62	\$16.10	\$5.49
Personal Care Aides	\$13.89	\$10.80	\$15.44	\$4.64
Home Health Aides	\$13.07	\$10.85	\$14.18	\$3.34
* Information on social workers reflect combined wage data for child, family, school, healthcare, mental health, substance abuse, and all other social workers.				

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Graduations by Occupation

Graduations for selected health occupations from school years 2012 through 2016 for the Hudson Valley region are reported in Table 81. Between 2012 and 2016, the Hudson Valley experienced the largest increase in the number of graduations for medical and health service managers (92), followed by physical therapists (45), nurse practitioners and clinical nurse specialists (22), occupational therapists (19), and medical and clinical laboratory technologists (14). Medical assistants and RNs experienced the largest decrease in number of graduations, (311) and (225) respectively.

Table 81. Number of Graduations in Selected Health Occupations in the Hudson Valley Region, 2012-2016

Occupation	2012	2013	2014	2015	2016	Change 2012-2016	
						Number	Percent
Medical and Health Service Managers	2	1	3	39	94	92	4600.0%
Physical Therapists	105	144	175	168	150	45	42.9%
Nurse Practitioners/Clinical Nurse Specialists	37	27	28	45	59	22	59.5%
Occupational Therapists	48	55	62	44	67	19	39.6%
Medical and Clinical Laboratory Technologists	7	10	15	26	21	14	200.0%
Physician Assistants	49	52	35	50	62	13	26.5%
Speech-Language Pathologists	22	22	70	72	33	11	50.0%
Respiratory Therapists	28	29	28	32	31	3	10.7%
Physical Therapy Assistants/Aides	20	16	23	21	20	0	0.0%
Medical and Clinical Laboratory Technicians	21	25	23	20	20	-1	-4.8%
Dental Hygienists	16	14	13	16	14	-2	-12.5%
Occupational Therapy Assistants/Aides	83	60	75	62	75	-8	-9.6%
Medical Secretaries	82	57	79	53	57	-25	-30.5%
Licensed Practical Nurses	514	450	432	385	345	-169	-32.9%
Registered Nurses	1,019	956	872	854	794	-225	-22.1%
Medical Assistants	504	560	470	302	193	-311	-61.7%
Cardiovascular Technologists & Technicians	25	12	18	15	N/A	N/A	N/A
Dental Assistants	N/A	1	N/A	N/A	95	N/A	N/A
Dietetic Technicians	N/A	N/A	9	7	21	N/A	N/A
Medical Records and Health Info Techs	N/A	N/A	N/A	19	21	N/A	N/A
Pharmacy Technicians	5	N/A	N/A	N/A	N/A	N/A	N/A
Radiologic Technologists	12	12	15	10	N/A	N/A	N/A
Surgical Technologists	N/A	N/A	N/A	13	18	N/A	N/A

Source: Integrated Postsecondary Education Data System

Licensed Health Professionals

Between 2013 and 2017, the number of licensed RNs in the Hudson Valley region increased by more than 750 or by 2%. The number of physician assistants (23%) grew the fastest, followed by NPs (23%), and speech-language pathologists (13%). In contrast, the Hudson Valley experienced declines in the number of clinical laboratory technologists and clinical laboratory technicians by 3% and 4% respectively (Table 82).

Table 82. Number of Licensed Individuals in Selected Health Occupations in the Hudson Valley Region, 2013-2017

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Registered Nurses	33,135	32,960	33,718	33,726	33,895	760	2.3%
Nurse Practitioners	2,242	2,306	2,466	2,594	2,751	509	22.7%
Speech-Language Pathologists	2,219	2,273	2,394	2,434	2,517	298	13.4%
Physician Assistants	953	996	1,095	1,118	1,174	221	23.2%
Occupational Therapists	1,468	1,489	1,570	1,594	1,631	163	11.1%
Social Workers	7,662	7,718	8,015	7,832	7,778	116	1.5%
Physical Therapists	2,492	2,480	2,568	2,588	2,591	99	4.0%
Dental Hygienists	1,175	1,187	1,231	1,235	1,247	72	6.1%
Occupational Therapy Assistants	783	790	801	792	831	48	6.1%
Respiratory Therapists	679	687	715	710	721	42	6.2%
Physical Therapy Assistants	529	533	551	556	570	41	7.8%
Dietitians/Nutritionists	759	748	767	776	784	25	3.3%
Dental Assistants	125	119	130	133	133	8	6.4%
Clinical Laboratory Technicians	233	236	238	216	223	-10	-4.3%
Licensed Practical Nurses	7,972	8,010	8,236	7,873	7,941	-31	-0.4%
Pharmacists	2,164	2,151	2,180	2,178	2,131	-33	-1.5%
Clinical Laboratory Technologists	1,386	1,403	1,422	1,341	1,348	-38	-2.7%
TOTAL	65,976	66,086	68,097	67,696	68,266	2,290	3.5%

Source: New York State Education Department, Office of Professions

Demand for Health Workers

Hospitals

Regions within upstate New York were combined due to low survey response rates. Upstate hospitals reported the most difficulty recruiting clinical laboratory technologists, and RNs (2+ years of experience), followed by all NPs, physician assistants, and clinical laboratory technicians. Clinical laboratory technologists, psychiatric NPs and RNs (2+ years of experience), and RNs, (<2 years of experience) were the most difficult to retain (Table 83).

Table 83. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in Upstate New York, 2017

Occupation	Recruitment			Retention		
	Reasons for Difficulty			Reasons for Difficulty		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of exp.)	4.1	90%	33%	3.6	43%	33%
RNs (<2 years of exp.)	3.2	52%	29%	3.5	42%	32%
Nurse Managers	3.5	60%	25%	2.7	32%	21%
Nurse Practitioners (excluding psychiatric)	3.9	67%	22%	3.2	33%	17%
Physician Assistants	3.8	68%	16%	3.1	33%	11%
Pharmacists	2.8	25%	6%	2.1	14%	0%
Psychiatric NPs	3.9	78%	44%	3.6	45%	18%
Psychologists	2.7	43%	14%	2.3	29%	0%
LCSWs	3.0	33%	13%	2.5	20%	13%
LMSWs	2.8	39%	11%	2.6	25%	13%
Physical Therapists	3.5	43%	38%	2.7	25%	35%
Occupational Therapists	3.3	41%	29%	2.5	12%	12%
Speech-Language Path.	3.5	63%	25%	2.8	31%	31%
Clinical Lab Technicians	3.8	71%	29%	3.2	35%	29%
Clinical Lab Technologists	4.4	80%	40%	3.9	53%	37%
Medical Coders	3.1	32%	21%	2.8	30%	20%
Surgical Technicians	3.6	68%	16%	2.7	25%	15%
Care Coordinators	2.1	21%	0%	1.8	13%	0%
Case Managers	2.4	33%	6%	2.1	18%	6%
Care Managers	2.7	33%	7%	2.1	20%	0%
Patient Navigators	1.9	7%	7%	1.8	8%	8%
Community Health Workers	2.6	11%	33%	1.7	9%	18%

- Sixty-four percent (64%) of responding hospitals indicated they had difficulty hiring part-time workers, including RNs, physical therapists, occupational therapists, and nurse practitioners.
- Fifty-five percent (52%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including RNs, LPNs, clinical laboratory technologists, CNAs, and patient care techs.
- Sixty-five percent (65%) of respondents reported that they were anticipating expanding in clinical titles, while only 25% indicated they were expanding in non-clinical titles.

Nursing Homes

In 2017 nursing homes in the Hudson Valley region reported the greatest difficulty recruiting nurse directors and managers and experienced RNs, followed by, physical therapists, occupational therapists, and MDS coordinators. CNAs and newly licensed RNs were the most difficult to retain for nursing homes in the region, followed by experienced RNs, nurse directors and managers, and LPNs (Table 84).

Table 84. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in the Hudson Valley Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	2.9	3.3	39.3%	28.6%
Dietitians/Nutritionists	2.7	2.2	10.0%	20.0%
Licensed Practical Nurses	3.1	2.9	25.9%	22.2%
Occupational Therapists	3.4	2.5	23.5%	17.6%
Occupational Therapy Assistants	2.9	2.6	12.5%	12.5%
Physical Therapists	3.5	2.6	20.0%	20.0%
Physical Therapist Assistants	3.0	2.4	11.8%	11.8%
Registered Nurses (RNs)				
Newly Licensed RNs	3.0	3.3	17.4%	34.8%
Experienced RNs	3.7	3.2	34.5%	41.4%
MDS Coordinators	3.4	2.7	26.1%	30.4%
Nurse Directors/Managers	3.7	3.0	34.6%	30.8%
Social Workers (SWs)				
Licensed Clinical Social Workers	2.9	2.7	19.0%	9.5%
Licensed Master Social Workers	3.1	1.8	17.4%	13.0%
Speech-Language Pathologists	2.8	2.4	14.3%	14.3%

- Thirty-eight percent (38%) of nursing homes reported difficulty hiring part-time workers.
- Sixty-eight percent (68%) of nursing homes indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Twenty-five percent (25%) of nursing homes reported anticipated expansion of clinical services next year, while seven percent (7%) reported expanding non-clinical services next year.

Home Health Care Agencies

Home health care agencies in the Hudson Valley region reported the most difficulty recruiting respiratory therapists, followed by RNs, homemakers, home health aides, and occupational therapists. Respiratory therapists and personal care aides were the most difficult to retain, followed by homemakers and home health aides (Table 85).

Table 85. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in the Hudson Valley Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Home Health Aides	3.9	3.5	77%	44%
Homemakers	3.9	3.5	67%	56%
Personal Care Aides	3.7	3.9	56%	78%
Licensed Practical Nurses	3.4	2.9	32%	43%
Occupational Therapists	3.8	2.9	42%	8%
Physical Therapists	3.7	3.0	46%	31%
Registered Nurses	3.9	3.4	56%	36%
Respiratory Therapists	5.0	4.0	100%	0%
Licensed Clinical Social Workers	3.0	2.3	20%	10%
Licensed Master's Social Workers	3.1	3.0	38%	13%

- Sixty percent (60%) of home health care agencies reported difficulty hiring full-time workers.
- Sixty-nine percent (69%) of home health care agencies reported difficulty hiring part-time workers.
- Eighty percent (80%) of home health care agencies reported difficulty hiring bilingual workers.
- Eighty percent (80%) of home health care agencies indicated difficulty hiring workers for off-shifts (evenings, nights, and weekends).
- Fifty-two percent (52%) of respondents indicated that they would be expanding their professional workforce (eg. licensed PNs, RNs, social workers, others) within the next year.
- Seventy-nine percent (79%) of respondents indicated that they would be expanding their paraprofessional workforce (eg. home health aides, personal care aides, others) within the next year.
- Thirty-three percent (33%) of respondents indicated that they would be expanding their non-clinical workforce (eg. managers, medical billers, schedulers, information technology workers, others) within the next year.

FQHCs

Hudson Valley and Capital District regions were combined due to low response rates to the survey. FQHCs in these regions had the most difficulty recruiting family/general practice physicians, Ob/Gyns, and LPNs. FQHCs in these regions had the most difficulty retaining psychologists, IT support workers, and RNs (Table 86).

Table 86. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in the Hudson Valley and Capital District Regions, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	3.8	2.2
	Internal Medicine	3.6	2.2
	Ob/Gyn	3.8	2.6
	Pediatricians	2.5	2.2
	Physician Assistants (PAs)	2.2	2.6
Nurse Practitioners	Overall – All Specialties	2.6	2.6
	Pediatric	2.5	2.3
	Adult	2.3	2.3
	Family	2.6	2.6
	Psychiatric	2.8	2.7
Nurses	Registered Nurses	3.3	2.8
	Licensed Practical Nurses	3.8	2.7
Behavioral Health	Psychiatrists	3.3	2.3
	Psychologists	2.7	3.0
	Substance Abuse Counselors	2.5	2.7
	Social Workers	2.8	2.3
Oral Health	Dentists	2.8	2.3
	Dental Hygienists	2.5	2.3
Coordination/Patient Care	Care Coordinators	3.3	2.7
	Case Managers	2.0	2.3
	HIV Counselors	1.0	1.0
Patient/Community Education	Community Health Workers	1.0	1.0
	Patient Health Educators	1.0	1.0
	Nutritionists/Nutrition Educators	2.3	2.3
Enabling Services	Patient Health Navigators	1.0	1.0
	Outreach Workers	1.0	1.0
	Transportation Workers	1.0	1.0
	Interpreters	1.0	1.0
Administrative Support	IT Systems Admin/Maintenance	3.5	2.8
Others	Physical Therapists	3.0	1.0
	Occupational Therapists	2.0	1.0

- Sixty percent (60%) of FQHCs in these regions indicated difficulty hiring bilingual staff; Spanish was the language most needed.
- Eighty percent (80%) of FQHCs in these regions reported expansion plans for one or more service.

Employment Projections by Health Occupation

According to the NYSDOL, the largest number of average annual job openings projected in the Hudson Valley region between 2014 and 2024 will be for RNs (790), home health aides (680), and personal care aides (610) (Table 87).

Table 87. Employment Projections for Selected Health Occupations in the Hudson Valley Region, 2014 and 2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Openings ^a
			Number	Percent	
Home Health Aides	10,670	15,110	4,440	41.61%	680
Personal Care Aides	16,040	20,810	4,770	29.74%	610
Registered Nurses	18,840	22,340	3,500	18.58%	790
Nursing Assistants	13,030	15,830	2,800	21.49%	570
Social Workers	6,440	7,460	1,020	15.84%	260
Licensed Practical and Licensed Vocational Nurses	6,570	8,080	1,510	22.98%	340
Medical Assistants	2,670	3,460	790	29.59%	140
Physical Therapists	1,840	2,400	560	30.43%	110
Emergency Medical Technicians and Paramedics	1,680	2,340	660	39.29%	100
Medical and Health Services Managers	3,130	3,670	540	17.25%	130
Dental Assistants	3,010	3,680	670	22.26%	140
Nurse Practitioners	1,030	1,430	400	38.83%	60
Physician Assistants	1,080	1,480	400	37.04%	60
Clinical, Counseling, and School Psychologists	2,150	2,560	410	19.07%	90
Speech-Language Pathologists	1,850	2,200	350	18.92%	90
Dental Hygienists	1,510	1,810	300	19.87%	60
Occupational Therapists	1,080	1,290	210	19.44%	40
Pharmacy Technicians	1,840	2,100	260	14.13%	50
Medical Records and Health Information Technicians	1,100	1,330	230	20.91%	50
Medical and Clinical Laboratory Technicians	850	980	130	15.29%	30
Diagnostic Medical Sonographers	750	970	220	29.33%	30
Radiologic Technologists	1,500	1,670	170	11.33%	50
Pharmacists	1,860	1,960	100	5.38%	50
Dietitians and Nutritionists	630	760	130	20.63%	20
Medical and Clinical Laboratory Technologists	780	870	90	11.54%	30
Respiratory Therapists	610	680	70	11.48%	20
Surgical Technologists	340	360	20	5.88%	0
Cardiovascular Technologists and Technicians	300	380	80	26.67%	20
Psychiatric Aides	1,410	1,440	30	2.13%	30
Orderlies	430	490	60	13.95%	20
Certified Registered Nurse Anesthetist	140	180	40	28.57%	0

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the profession.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024

F. Long Island

The Long Island region includes the counties of Nassau and Suffolk.

Population

The Long Island region had a significantly lower percentage of individuals below 100% and 200% of the FPL and is less racially and ethnically diverse than the state as a whole. Additionally, the Long Island region has higher percentages of the population younger than age 18 or older than 64 years compared to New York State. The Long Island region had similar rates of high school graduates to the statewide rates and had a larger percentage of residents with education at bachelor's level or higher (Table 88).

Table 88. Selected Population Characteristics in the Long Island Region, 2011-2015 (5-Year Average)

Population Characteristics ^a	Region		Statewide Percent
	Number	Percent	
Total population	2,855,985	N/A	N/A
Population under 100% FPL	185,415	6.5%	15.3%
Population under 200% FPL	483,495	16.9%	31.6%
Population aged birth to 17 years	642,834	22.5%	21.6%
Population aged 65 and older	439,589	15.4%	14.3%
Population female aged 15 to 44	525,935	18.4%	20.6%
Women aged 15 to 19 who had a birth in past 12 mos.	636	<0.1%	<0.1%
Women aged 20 to 34 who had a birth in past 12 mos.	18,901	0.7%	0.8%
Women aged 35 to 50 who had a birth in past 12 mos.	10,096	0.4%	0.3%
Black/African American, non-Hispanic	254,722	8.9%	14.4%
Hispanic/Latino	480,768	16.8%	18.4%
Asian/Pacific Islander, non-Hispanic	171,326	6.0%	7.9%
American Indian/Native Alaskan, non-Hispanic	3,519	0.1%	0.2%
Two or more/other races	37,817	1.3%	1.7%
Less than high school education	189,094	9.7%	14.4%
High school or equivalent	853,731	43.7%	42.9%
Associate degree	165,000	8.4%	8.5%
Bachelor's degree	411,560	21.1%	19.4%
Master's degree or higher	335,370	17.2%	14.8%
Home Ownership	1,574,026	72.3%	56.2%

^a Education levels and rates are based on individuals aged 25 years and older.

Source: US Census, American Community Survey, 2011-2015 (5-Year Average); Behavioral Risk Factor Surveillance System, 2016

Health Status

The Long Island region had higher rates of total deaths, deaths due heart disease, and deaths due to all cancer per 100,000 total population than the state as a whole, but it had lower rates of deaths due to diabetes. The rate of total hospitalizations per 10,000 total population was higher in the Long Island region compared to New York State, but the rate of ED visits was significantly lower than the statewide rate. Additionally the Long Island region had a higher rate of heart disease hospitalizations than New York State (Table 89).

Table 89. Selected Health Indicators in the Long Island Region

Health Indicator	Region		Statewide	
	Number	Rate	Number	Rate
Total deaths, per 100,000	66,668	778.7	442,323	750.1
Deaths due to heart disease, per 100,000	21,568	251.9	128,806	218.4
Deaths due to all cancers, per 100,000	15,968	187.2	105,645	180.7
Deaths due to diabetes, per 100,000	1,169	13.7	12,003	20.4
Total births, per 1,000 females aged 15 to 44	88,979	56.4	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	2,875	10.0	33,588	17.8
Low-birthweight births, as a percent of total births	6,918	7.8	56,238	7.9
Late/no prenatal care, as a percent of total births	3,113	3.6	39,555	5.6
Infant deaths, per 1,000 live births	354	4.0	3,403	4.8
Total hospitalizations, per 10,000	1,046,106	1,221.8	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	28,642	128.6	198,511	127.9
Adult asthma hospitalizations, per 10,000	11,618	13.6	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	1,349	6.6	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	3,093	12.4	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	3,859	20.1	34,386	27.0
Diabetes hospitalizations, per 10,000	191,394	223.5	1,401,239	237.6
CLRD hospitalizations, per 10,000	27,220	31.8	204,932	34.8
Heart disease hospitalizations, per 10,000	106,936	124.9	609,961	103.4
Total ED visits, per 10,000	2,890,245	3,375.7	24,036,192	4,076.2
One or more personal doctor(s), as percent	1,881,651	86.4	13,578,631	86.7
Had a checkup within the past two years, as percent	1,854,320	85.2	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

Primary Care Physicians

There were more than 4,200 primary care physicians practicing in the Long Island region in 2017. Forty-four percent (44%) were in general internal medicine, 23% were in general pediatrics, and another 21% were in general or family practice. There were over 800 psychiatrists, including child and adolescent psychiatrists, practicing in the Long Island region, or 28.9 per 100,000 total population. Nassau County had 193.2 primary care practitioners per 100,000 total population, whereas Suffolk County only had 106.2 primary care physicians per 100,000 total population (Table 90 and Figure 28).

Table 90. Primary Care Physicians and Psychiatrists in the Long Island Region, by Specialty, 2017

Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	874	30.6
Internal Medicine (General)	1,873	65.6
Subtotal	2,747	96.2
Obstetrics/Gynecology	495	94.1
Pediatrics (General)	971	151.0
Primary Care Total	4,213	N/A
Psychiatrist	826	28.9

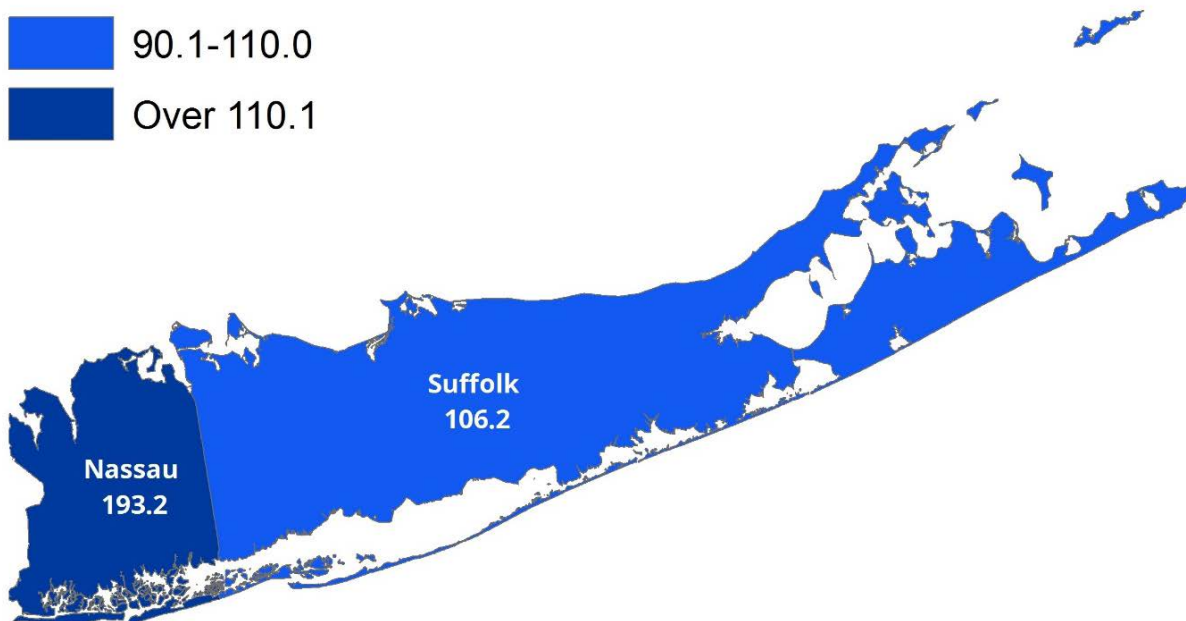
^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

Figure 28. Number of Selected Primary Care Physicians per 100,000 Population in the Long Island Region, by County, 2017

Legend

- 90.1-110.0
- Over 110.1



Employment

Total Health Sector Employment

Health sector employment in the Long Island region grew by almost 8% between 2012 and 2016, adding nearly 13,000 jobs. Employment in home health care grew the fastest, increasing by 31% between 2012 and 2016. There was also growth in hospitals (8%) and ambulatory care (5%), while the number of jobs in nursing home and personal care facilities decreased by 1%, (237 jobs), during the same time period (Table 91).

Table 91. Number of Health Care Jobs in the Long Island Region, by Setting, 2012-2016

Setting	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Hospitals	62,754	62,687	61,907	64,447	67,833	5,079	8.1%
Ambulatory care (excluding home health)	62,528	63,485	63,968	65,305	65,861	3,333	5.3%
Nursing home and personal care facilities	23,918	22,722	22,934	23,111	23,681	-237	-1.0%
Home health care	14,630	15,580	16,649	18,027	19,167	4,537	31.0%
Total	163,830	164,474	165,458	170,890	176,542	12,712	7.8%

Source: New York State Department of Labor, ES-202

Employment and Wage by Occupation

Employment for selected health care occupations in the Long Island Region is presented in Table 92. As reported in the first quarter of 2017, registered nurses accounted for the most jobs (27,580), followed by personal care aides (23,770), nursing assistants (14,080), and home health aides (12,030). Nuclear medicine technologists, radiation therapists, and dietetic technicians had the fewest jobs (240, 180 and 110, respectively).

Wages in selected health care occupations for the Long Island Region are reported in Table 93. These wages are based on NYSDOL 2013-2016 Occupational Wages survey data, which is adjusted to include the first quarter of 2017. Medical and health services managers earned the highest hourly wage in 2017 (\$72.42), followed by pharmacists (\$61.38), nurse practitioners (\$56.08), physician assistants (\$53.31), and radiation therapists. Personal care aides (\$13.04) and home health aides (\$11.74) were the lowest wage earners among the selected health care occupations in the Long Island Region.

Table 92. Number of Jobs in Selected Health Occupations in the Long Island Region, 2017

Occupation	Employment
Registered Nurses	27,580
Personal Care Aides	23,770
Nursing Assistants	14,080
Home Health Aides	12,030
Social Workers	5,720
Licensed Practical and Licensed Vocational Nurses	5,560
Medical and Health Services Managers	4,170
Medical Assistants	4,130
Dental Assistants	3,830
Physical Therapists	3,380
Pharmacists	2,720
Pharmacy Technicians	2,660
Physician Assistants	2,600
Radiologic Technologists and Technicians	2,250
Dental Hygienists	2,170
Speech-Language Pathologists	2,000
Nurse Practitioners	1,900
Medical and Clinical Laboratory Technologists	1,700
Medical Secretaries	1,490
Medical Records and Health Information Technicians	1,360
Occupational Therapists	1,280
Medical and Clinical Laboratory Technicians	980
Orderlies	960
Mental Health Counselors	960
Physical Therapist Aides	930
Respiratory Therapists	900
Physical Therapist Assistants	810
Dietitians and Nutritionists	710
Pharmacy Aides	710
Surgical Technologists	700
Cardiovascular Technologists and Technicians	660
Occupational Therapy Assistants	260
Nuclear Medicine Technologists	240
Radiation Therapists	180
Dietetic Technicians	110

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Table 93. Average Hourly Wage in Selected Health Occupations in the Long Island Region, 2017

Occupation	Average Hourly Wage	Entry Wage	Experienced Wage	Range Experienced Versus Entry Wages
Medical and Health Services Managers	\$72.42	\$45.03	\$86.12	\$41.09
Pharmacists	\$61.38	\$51.78	\$66.18	\$14.40
Nurse Practitioners	\$56.08	\$46.78	\$60.73	\$13.94
Physician Assistants	\$53.31	\$40.01	\$59.97	\$19.96
Radiation Therapists	\$53.25	\$42.69	\$58.53	\$15.85
Speech-Language Pathologists	\$46.67	\$29.41	\$55.30	\$25.89
Physical Therapists	\$42.10	\$30.43	\$47.93	\$17.50
Occupational Therapists	\$41.80	\$30.62	\$47.39	\$16.77
Registered Nurses	\$41.80	\$30.53	\$47.43	\$16.90
Nuclear Medicine Technologists	\$40.76	\$33.71	\$44.29	\$10.58
Dental Hygienists	\$40.43	\$34.48	\$43.41	\$8.93
Respiratory Therapists	\$37.64	\$34.20	\$39.37	\$5.17
Medical and Clinical Laboratory Technologists	\$35.60	\$28.85	\$38.97	\$10.13
Radiologic Technologists and Technicians	\$35.30	\$29.16	\$38.37	\$9.21
Cardiovascular Technologists and Technicians	\$32.56	\$21.73	\$37.97	\$16.24
Social Workers	\$31.50	\$21.81	\$36.34	\$14.53
Dietitians and Nutritionists	\$31.13	\$21.38	\$36.02	\$14.64
Occupational Therapy Assistants	\$31.13	\$26.40	\$33.50	\$7.10
Physical Therapist Assistants	\$29.87	\$26.29	\$31.66	\$5.37
Surgical Technologists	\$28.12	\$22.31	\$31.02	\$8.72
Licensed Practical and Licensed Vocational Nurses	\$26.15	\$21.79	\$28.33	\$6.54
Medical and Clinical Laboratory Technicians	\$25.37	\$16.55	\$29.77	\$13.22
Medical Records and Health Information Technicians	\$24.73	\$19.26	\$27.47	\$8.20
Dietetic Technicians	\$23.52	\$21.73	\$24.42	\$2.69
Medical Secretaries	\$21.62	\$16.44	\$24.20	\$7.76
Dental Assistants	\$20.86	\$15.56	\$23.51	\$7.96
Nursing Assistants	\$19.13	\$16.41	\$20.50	\$4.09
Medical Assistants	\$18.44	\$14.66	\$20.33	\$5.67
Mental Health Counselors	\$18.41	\$14.58	\$20.33	\$5.75
Orderlies	\$17.57	\$13.86	\$19.43	\$5.57
Pharmacy Aides	\$16.27	\$11.32	\$18.75	\$7.43
Pharmacy Technicians	\$15.82	\$10.79	\$18.34	\$7.54
Physical Therapist Aides	\$14.43	\$11.24	\$16.03	\$4.79
Personal Care Aides	\$13.04	\$10.88	\$14.12	\$3.24
Home Health Aides	\$11.74	\$10.38	\$12.42	\$2.04
* Information on social workers reflect combined wage data for child, family, school, healthcare, mental health, substance abuse, and all other social workers.				

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Graduations by Occupation

Graduations for selected health occupations from school years 2012 through 2016 for the Long Island region are reported in Table 94. Between 2012 and 2016, the Long Island Region experienced the largest increase in the number of graduations of RNs (242), nurse practitioners and clinical nurse specialists (107), and medical health service managers (88). Medical assistants and LPNs experienced the largest decrease in number of graduations by 622 and 123 respectively.

Table 94. Number of Graduations in Selected Health Occupations in the Long Island Region, 2012-2016

Occupation	2012	2013	2014	2015	2016	Change 2012-2016	
						Number	Percent
Registered Nurses	1326	1457	1456	1493	1568	242	18.3%
Nurse Practitioners/Clinical Nurse Specialists	120	187	168	222	227	107	89.2%
Medical and Health Service Managers	103	115	126	160	191	88	85.4%
Dental Hygienists	43	58	52	80	106	63	146.5%
Physician Assistants	122	134	159	160	165	43	35.2%
Speech-Language Pathologists	31	54	31	57	74	43	138.7%
Social Workers	542	562	507	500	578	36	6.6%
Medical and Clinical Lab Technologists	25	32	46	47	60	35	140.0%
Medical Records and Health Info Techs	18	52	68	29	38	20	111.1%
Dietitians and Nutritionists	34	36	33	37	48	14	41.2%
Occupational Therapists	61	68	58	83	73	12	19.7%
Surgical Technologists	34	38	56	52	42	8	23.5%
Occupational Therapy Assistants/Aides	21	22	20	21	28	7	33.3%
Cardiovascular Technologists & Technicians	35	53	46	45	36	1	2.9%
Physical Therapy Assistants/Aides	45	34	26	45	45	0	0.0%
Pharmacy Technicians	91	82	73	138	90	-1	-1.1%
Respiratory Therapists	56	49	47	56	54	-2	-3.6%
Medical and Clinical Laboratory Technicians	29	28	25	29	26	-3	-10.3%
Physical Therapists	110	121	107	112	102	-8	-7.3%
Medical Secretaries	31	20	3	2	2	-29	-93.5%
Licensed Practical Nurses	556	546	479	435	433	-123	-22.1%
Medical Assistants	1929	1735	1345	1280	1307	-622	-32.2%
Dietetic Technicians	N/A	N/A	N/A	30	28	N/A	N/A
Nuclear Medicine Technologists	N/A	N/A	N/A	8	11	N/A	N/A
Nurse Midwives	N/A	N/A	7	7	5	N/A	N/A
Nursing Assistants	N/A	N/A	162	425	106	N/A	N/A

Source: Integrated Postsecondary Education Data System

Licensed Health Professionals

Between 2013 and 2017, the number of licensed RNs on Long Island increased by over 2,000, or by 5%. During the same period, there were increases in the number licensed NPs (720), PAs (618), social workers (516), and speech-language pathologists (492). The occupations with the greatest percentage growth in numbers included PAs (25%), NPs (22%), and dental assistants (19%). In contrast, the number of licensed clinical laboratory technicians declined by 12, and the number of LPNs decreased by 61 during the same time period (Table 95).

Table 95. Number of Licensed Individuals in Selected Health Occupations in the Long Island Region, 2013-2017

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Registered Nurses	42,204	42,095	43,285	43,694	44,284	2,080	4.9%
Nurse Practitioners	3,264	3,360	3,544	3,701	3,984	720	22.1%
Physician Assistants	2,449	2,563	2,754	2,879	3,067	618	25.2%
Social Workers	9,195	9,323	9,810	9,670	9,711	516	5.6%
Speech-Language Pathologists	3,741	3,820	3,977	4,068	4,233	492	13.2%
Physical Therapists	3,581	3,632	3,769	3,832	3,917	336	9.4%
Occupational Therapists	2,089	2,161	2,239	2,296	2,404	315	15.1%
Pharmacists	3,990	4,021	4,155	4,197	4,218	228	5.7%
Dental Hygienists	1,780	1,797	1,864	1,889	1,925	145	8.1%
Respiratory Therapists	1,008	1,035	1,070	1,060	1,101	93	9.2%
Physical Therapy Assistants	1,008	1,023	1,062	1,067	1,056	48	4.8%
Dietitian/Nutritionists	1,038	1,047	1,078	1,079	1,084	46	4.4%
Occupational Therapy Assistants	426	416	434	442	458	32	7.5%
Dental Assistants	72	81	87	83	86	14	19.4%
Clinical Laboratory Technologists	2,381	2,405	2,445	2,338	2,391	10	0.4%
Clinical Laboratory Technicians	305	308	320	294	293	-12	-3.9%
Licensed Practical Nurses	8,937	9,022	9,271	8,789	8,876	-61	-0.7%
TOTAL	87,468	88,109	91,164	91,378	93,088	5,620	6.4%

Source: New York State Education Department, Office of Professions

Demand for Health Workers

Hospitals

New York City and Long Island hospitals reported the most difficulty recruiting psychiatric NPs, and clinical laboratory technologists, followed by physician assistants and care managers. Psychiatric NPs, and clinical laboratory technicians, followed by RNs (<2 years of experience) and surgical technicians were the most difficult to retain (Table 31). Difficulty in retention and recruitment was due to both a shortage of workers and non-competitive salaries (Table 96).

Table 96. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in the New York City and Long Island Region, 2017

Occupation	Recruitment			Retention		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of exp.)	3.1	50%	29%	2.8	8%	15%
RNs (<2 years of exp.)	1.3	0%	8%	3.7	0%	33%
Nurse Managers	3.1	62%	15%	2.5	54%	15%
Nurse Practitioners (excluding psychiatric)	3.1	57%	71%	3.1	67%	75%
Physician Assistants	3.7	54%	69%	3.2	50%	75%
Pharmacists	2.6	15%	15%	2.2	0%	8%
Psychiatric NPs	4.6	73%	36%	3.9	20%	20%
Psychologists	3.2	0%	11%	2.5	0%	13%
LCSWs	2.3	0%	8%	2.4	0%	17%
LMSWs	2.2	0%	8%	2.4	0%	8%
Physical Therapists	2.5	15%	8%	1.7	0%	8%
Occupational Therapists	2.6	8%	17%	1.6	0%	9%
Speech-Language Path.	2.6	8%	8%	1.6	0%	9%
Clinical Lab Technicians	2.8	20%	20%	3.8	78%	22%
Clinical Lab Technologists	4.6	77%	62%	3.5	58%	17%
Medical Coders	3.1	18%	18%	3.3	58%	8%
Surgical Technicians	3.3	67%	67%	3.7	58%	67%
Care Coordinators	2.7	20%	10%	2.2	11%	11%
Case Managers	2.6	23%	8%	2.3	8%	8%
Care Managers	3.4	64%	64%	2.3	10%	10%
Patient Navigators	3.1	18%	9%	2.4	10%	10%
Community Health Workers	2.3	50%	25%	3.0	33%	33%

- Only 21% of respondents reported that they had difficulty hiring bilingual workers.

- Thirty-five percent (35%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including nurse aides and patient care techs.
- Twenty-nine percent (29%) of respondents reported that they were anticipating expanding in clinical titles, while only 14% indicated they were expanding in non-clinical titles.

Nursing Homes

Nursing homes in the Long Island region in 2017 reported the most difficulty recruiting experienced RNs, followed by MDS coordinators, nurse directors and managers, and occupational therapists. Experienced RNs were the most difficult to retain, followed by CNAs, newly licensed RNs, LPNs, and MDS coordinators (Table 97).

Table 97. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in the Long Island Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	2.8	3.5	34.8%	4.3%
Dietitians/Nutritionists	2.5	1.8	0.0%	5.3%
Licensed Practical Nurses	3.4	3.2	47.8%	17.4%
Occupational Therapists	3.6	2.8	29.4%	23.5%
Occupational Therapy Assistants	3.5	2.8	29.4%	11.8%
Physical Therapists	3.4	2.6	23.5%	17.6%
Physical Therapist Assistants	3.3	2.6	25.0%	12.5%
Registered Nurses (RNs)				
Newly Licensed RNs	2.7	3.4	18.2%	13.6%
Experienced RNs	4.2	3.8	59.1%	13.6%
MDS Coordinators	3.8	3.2	38.1%	14.3%
Nurse Directors/Managers	3.7	3.1	36.4%	13.6%
Social Workers (SWs)				
Licensed Clinical Social Workers	2.7	2.7	10.0%	5.0%
Licensed Master Social Workers	2.8	2.7	9.1%	9.1%
Speech-Language Pathologists	2.8	2.7	11.8%	5.9%

- Forty-three percent (43%) of nursing homes reported difficulty hiring part-time workers.
- Sixty-five percent (65%) of nursing homes indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Twenty-four percent (24%) of nursing homes indicated they were planning to expand clinical service in the next year, and no nursing homes reported expanding non-clinical services in the next year.

Home Health Care Agencies

Home health care agencies in the Long Island region reported the most difficulty recruiting homemakers and respiratory therapists, followed by personal care aides, home health aides, and physical therapists. Homemakers were the most difficult to retain, followed by personal care aides and respiratory therapists (Table 98).

Table 98. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in the Long Island Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Home Health Aides	4.1	3.6	62%	51%
Homemakers	4.3	3.8	53%	67%
Personal Care Aides	4.2	3.7	63%	47%
Licensed Practical Nurses	3.6	3.5	47%	33%
Occupational Therapists	3.9	3.2	86%	14%
Physical Therapists	4.1	2.6	71%	14%
Registered Nurses	3.7	3.4	43%	39%
Respiratory Therapists	4.3	3.7	75%	25%
Licensed Clinical Social Workers	3.4	3.3	57%	0%
Licensed Master's Social Workers	3.2	3	60%	20%

- Sixty-four percent (64%) of home health care agencies reported difficulty hiring full-time workers.
- Sixty-four percent (64%) of home health care agencies reported difficulty hiring part-time workers.
- Seventy-five (75%) of home health care agencies indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Fifty-five (55%) of home health care agencies reported difficulty hiring bilingual workers.
- Forty-two percent (42%) of respondents indicated that they would be expanding their professional workforce (licensed PNs, RNs, social workers, others) within the next year.
- Eighty-one percent (81%) of respondents indicated that they would be expanding their paraprofessional workforce (eg. home health aides, personal care aides, others) within the next year.
- Thirty-one (31%) of respondents indicated that they would be expanding their non-clinical workforce (eg. managers, medical billers, schedulers, information technology workers, others) within the next year.

FQHCs

New York City and Long Island regions were combined due to low survey response rates. FQHCs in these combined regions had the most difficulty recruiting and retaining physical therapists and occupational therapists (Table 99). There were difficulties recruiting and retaining psychiatrists and psychiatric NPs in the combined regions.

Table 99. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in the New York City and Long Island Region, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	4.2	2.7
	Internal Medicine	4.1	2.8
	Ob/Gyn	4.0	2.8
	Pediatricians	3.3	3.0
	Physician Assistants (PAs)	2.7	3.0
Nurse Practitioners	Overall – All Specialties	3.3	2.5
	Pediatric	3.5	2.7
	Adult	3.1	2.5
	Family	3.7	3.0
	Psychiatric	4.4	3.0
Nurses	Registered Nurses	3.9	3.3
	Licensed Practical Nurses	3.5	2.8
Behavioral Health	Psychiatrists	4.6	3.3
	Psychologists	4.2	4.0
	Substance Abuse Counselors	1.0	0.0
	Social Workers	3.7	3.0
Oral Health	Dentists	3.4	2.3
	Dental Hygienists	2.8	2.6
Coordination/Patient Care	Care Coordinators	3.3	3.2
	Case Managers	3.3	3.2
	HIV Counselors	2.2	2.0
Patient/Community Education	Community Health Workers	2.4	2.7
	Patient Health Educators	2.8	2.0
	Nutritionists/Nutrition Educators	3.3	2.7
Enabling Services	Patient Health Navigators	2.6	2.0
	Outreach Workers	2.4	2.0
	Transportation Workers	2.0	1.5
	Interpreters	1.0	1.0
Administrative Support	IT Systems Admin/Maintenance	3.2	3.0
Others	Physical Therapists	5.0	5.0
	Occupational Therapists	5.0	5.0

- Fifty-five percent (55%) of FQHCs in these regions identified difficulty hiring bilingual staff; Spanish is the language most needed.
- Sixty-four percent (64%) of FQHCs in these regions anticipate expanding one or more service.

Employment Projections by Health Occupation

According to the NYSDOL, the largest number of average annual job openings projected in the Long Island region between 2014 and 2024 will be for RNs (1,110), personal care aides (1,010), and home health aides (930) (Table 100).

Table 100. Employment Projections for Selected Health Occupations in the Long Island Region, 2014 and 2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Opening
			Number	Percent	
Home Health Aides	13,340	19,630	6,290	47.2%	930
Personal Care Aides	21,430	29,780	8,350	39.0%	1,010
Registered Nurses	26,470	31,410	4,940	18.7%	1,110
Nursing Assistants	15,630	18,280	2,650	17.0%	620
Social Workers	6,320	7,510	1,190	18.8%	290
Licensed Practical and Licensed Vocational Nurses	7,340	8,860	1,520	20.7%	360
Medical Assistants	4,800	5,980	1,180	24.6%	220
Physical Therapists	3,340	4,510	1,170	35.0%	210
Emergency Medical Technicians and Paramedics	2,650	3,430	780	29.4%	120
Medical and Health Services Managers	4,580	5,160	580	12.7%	180
Dental Assistants	4,080	4,990	910	22.3%	190
Nurse Practitioners	1,570	2,100	530	33.8%	90
Physician Assistants	2,270	2,910	640	28.2%	110
Clinical, Counseling, and School Psychologists	2,060	2,410	350	17.0%	80
Speech-Language Pathologists	2,220	2,690	470	21.2%	110
Dental Hygienists	2,170	2,660	490	22.6%	90
Occupational Therapists	1,220	1,510	290	23.8%	50
Pharmacy Technicians	2,680	3,030	350	13.1%	70
Medical Records and Health Information Technicians	1,400	1,640	240	17.1%	50
Medical and Clinical Laboratory Technicians	1,180	1,390	210	17.8%	50
Diagnostic Medical Sonographers	1,150	1,490	340	29.6%	50
Radiologic Technologists	2,370	2,620	250	10.6%	80
Pharmacists	2,970	3,170	200	6.7%	90
Dietitians and Nutritionists	890	1,080	190	21.4%	30
Medical and Clinical Laboratory Technologists	1,790	2,000	210	11.7%	60
Respiratory Therapists	990	1,110	120	12.1%	30
Surgical Technologists	670	750	80	11.9%	20
Cardiovascular Technologists and Technicians	760	940	180	23.7%	30
Psychiatric Aides	740	750	10	1.4%	20
Orderlies	820	930	110	13.4%	30

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the profession.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024

G. Mohawk Valley

The Mohawk Valley region includes the counties of Fulton, Herkimer, Montgomery, Oneida, Otsego, and Schoharie.

Population

The Mohawk Valley region population was much less racially and ethnically diverse and was older than New York State as a whole. The Mohawk Valley region also had a higher percentage of people with a high school diploma or equivalent but a smaller percentage of people with a bachelor's degree or higher than the state as a whole (Table 101).

Table 101. Selected Population Characteristics in the Mohawk Valley Region, 2011-2015 (5-Year Average)

Population Characteristics ^a	Region		Statewide Percent
	Number	Percent	
Total population	495,289	N/A	N/A
Population under 100% FPL	79,269	16.0%	15.3%
Population under 200% FPL	171,360	34.6%	31.6%
Population aged birth to 17 years	103,251	20.8%	21.6%
Population aged 65 and older	86,373	17.4%	14.3%
Population female aged 15 to 44	89,499	18.1%	20.6%
Women aged 15 to 19 who had a birth in past 12 mos.	288	<0.1%	<0.1%
Women aged 20 to 34 who had a birth in past 12 mos.	4,421	0.9%	0.8%
Women aged 35 to 50 who had a birth in past 12 mos.	980	0.2%	0.3%
Black/African American, non-Hispanic	16,903	3.4%	14.4%
Hispanic/Latino	23,929	4.8%	18.4%
Asian/Pacific Islander, non-Hispanic	10,553	2.1%	7.9%
American Indian/Native Alaskan, non-Hispanic	842	0.2%	0.2%
Two or more/other races	8,233	0.2%	1.7%
Less than high school education	41,471	12.2%	14.4%
High school or equivalent	182,703	53.7%	42.9%
Associate degree	41,308	12.2%	8.5%
Bachelor's degree	43,073	12.7%	19.4%
Master's degree or higher	31,379	9.2%	14.8%
Home Ownership	281,193	73.7%	56.2%

^a Education levels and rates are based on individuals aged 25 years and older.

Source: US Census, American Community Survey, 2011-2015 (5-Year Average); Behavioral Risk Factor Surveillance System, 2016

Health Status

The Mohawk Valley region had much higher rates of total deaths, deaths due to heart disease, deaths due to all cancer, and deaths due to diabetes per 100,000 total population than the state as a whole. Additionally, the rates of total hospitalizations, preventable hospitalizations, hospitalizations due to chronic lower respiratory disease, and hospitalizations due to heart disease per 10,000 total population were all higher than the state rates. Although it had a slightly lower total birth rate than statewide, the Mohawk Valley had a higher teen birth rate than the state as a whole (Table 102).

Table 102. Selected Health Indicators in the Mohawk Valley Region

Health Indicator	Region		Statewide	
	Number	Rate	Number	Rate
Total deaths, per 100,000	15,567	1,047.8	442,323	750.1
Deaths due to heart disease, per 100,000	4,379	294.7	128,806	218.4
Deaths due to all cancers, per 100,000	3,387	226.5	105,645	180.7
Deaths due to diabetes, per 100,000	450	30.3	12,003	20.4
Total births, per 1,000 females aged 15 to 44	15,464	57.4	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	1,162	22.5	33,588	17.8
Low-birthweight births, as a percent of total births	1,140	7.4	56,238	7.9
Late/no prenatal care, as a percent of total births	871	5.7	39,555	5.6
Infant deaths, per 1,000 live births	98	6.3	3,403	4.8
Total hospitalizations, per 10,000	184,656	1,242.9	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	6,026	153.9	198,511	127.9
Adult asthma hospitalizations, per 10,000	1,527	10.3	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	234	7.0	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	449	10.6	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	354	11.5	34,386	27.0
Diabetes hospitalizations, per 10,000	39,315	264.6	1,401,239	237.6
CLRD hospitalizations, per 10,000	6,213	41.8	204,932	34.8
Heart disease hospitalizations, per 10,000	18,036	121.4	609,961	103.4
Total ED visits, per 10,000	695,474	4,681.1	24,036,192	4,076.2
One or more personal doctor(s), as percent	335,419	87.9	13,578,631	86.7
Had a checkup within the past two years, as percent	332,957	87.2	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

Primary Care Physicians

There were more than 400 primary care physicians practicing in the Mohawk Valley region. Forty-three percent (43%) were in family or general practice and 33% were in general internal medicine. There were over 50 psychiatrists, including child and adolescent psychiatrists, practicing in the Mohawk Valley region, or approximately 10.9 per 100,000 total population. Otsego County had the highest rate with 162.6 primary care physicians per 100,000 total population, and Montgomery County had the lowest rate with 42.7 per 100,000 total population (Table 103 and Figure 29).

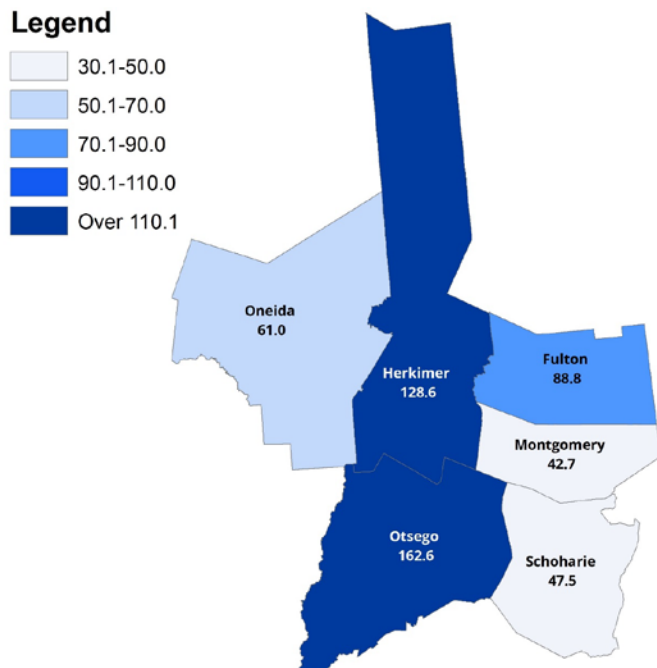
Table 103. Primary Care Physicians and Psychiatrists in the Mohawk Valley Region, by Specialty, 2017

Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	179	36.1
Internal Medicine (General)	137	27.7
Subtotal	316	63.8
Obstetrics/Gynecology	40	44.7
Pediatrics (General)	55	53.3
Primary Care Total	411	N/A
Psychiatrist	54	10.9

^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

Figure 29. Number of Selected Primary Care Physicians per 100,000 Population in the Mohawk Valley Region, by County, 2017



Employment

Total Health Sector Employment

Between 2012 and 2016, health sector employment in the Mohawk Valley region experienced an overall decline of 45 jobs. Employment in nursing home and personal care facilities increased by more than 250 jobs, or by 4%, whereas jobs in ambulatory care and home health care grew by 1% and by 5%, adding 88 and 74 jobs, respectively. In contrast, employment in hospitals fell by nearly 500 jobs, or by 4%, during the same time period (Table 104).

Table 104. Number of Health Care Jobs in the Mohawk Valley Region, by Setting, 2012-2016

Setting	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Hospitals	12,153	12,069	11,435	11,585	11,667	-486	-4.0%
Ambulatory care (excluding home health)	6,757	6,753	6,755	6,823	6,845	88	1.3%
Nursing home and personal care facilities	6,555	6,693	6,692	6,881	6,834	279	4.3%
Home health care	1,396	1,390	1,365	1,370	1,470	74	5.3%
Total	26,861	26,905	26,247	26,659	26,816	-45	-0.17%

Source: New York State Department of Labor, ES-202

Employment and Wage by Occupation

Employment for selected health care occupations for the Mohawk Valley Region is presented in Table 105. As reported in the first quarter of 2017, personal care aides accounted for the most jobs (5,670), followed by registered nurses (4,730) and nursing assistants (3,130). Orderlies, and nuclear medicine technologists accounted for the fewest jobs (60, and 50, respectively).

Wages in selected health care occupations for the Mohawk Valley Region are reported in Table 106. These wages are based on NYSDOL 2013-2016 Occupational Wages survey data, which was adjusted to include the first quarter of 2017. Pharmacists earned the highest hourly wage in 2017 (\$65.80), followed by physician assistants (\$50.62), medical and health services managers (\$48.92), and nurse practitioners (\$47.57). Personal care aides were the lowest wage earners (\$12.70) in the Mohawk Valley region, followed by home health aides (\$12.87).

Table 105. Number of Jobs in Selected Health Occupations in the Mohawk Valley Region, 2017

Occupation	Employment
Personal Care Aides	5,670
Registered Nurses	4,730
Nursing Assistants	3,130
Home Health Aides	2,140
Licensed Practical and Licensed Vocational Nurses	2,090
Social Workers	1,300
Pharmacists	630
Pharmacy Technicians	520
Medical and Health Services Managers	510
Nurse Practitioners	350
Physical Therapists	340
Radiologic Technologists and Technicians	340
Medical Assistants	330
Medical Records and Health Information Technicians	310
Dental Assistants	280
Medical Secretaries	260
Occupational Therapists	250
Mental Health Counselors	250
Speech-Language Pathologists	230
Physician Assistants	220
Medical and Clinical Laboratory Technologists	220
Dental Hygienists	220
Physical Therapist Assistants	180
Dietitians and Nutritionists	150
Respiratory Therapists	150
Medical and Clinical Laboratory Technicians	140
Surgical Technologists	130
Cardiovascular Technologists and Technicians	70
Occupational Therapy Assistants	70
Orderlies	60
Nuclear Medicine Technologists	50

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Table 106. Average Hourly Wage in Selected Health Occupations in the Mohawk Valley Region, 2017

Occupation	Average Wage per Hour	Entry Wage per Hour	Experienced Wage per Hour	Range of Experienced Versus Range
Pharmacists	\$65.80	\$47.60	\$74.91	\$27.31
Physician Assistants	\$50.62	\$42.31	\$54.76	\$12.45
Medical and Health Services Managers	\$48.92	\$32.73	\$57.01	\$24.28
Nurse Practitioners	\$47.57	\$35.89	\$53.41	\$17.51
Physical Therapists	\$36.89	\$26.09	\$42.29	\$16.21
Occupational Therapists	\$35.18	\$23.50	\$41.02	\$17.53
Dental Hygienists	\$33.29	\$28.28	\$35.79	\$7.51
Speech-Language Pathologists	\$32.76	\$24.02	\$37.13	\$13.11
Respiratory Therapists	\$30.57	\$23.68	\$34.01	\$10.33
Registered Nurses	\$30.30	\$24.45	\$33.23	\$8.78
Medical and Clinical Laboratory Technologists	\$30.25	\$24.56	\$33.08	\$8.52
Dietitians and Nutritionists	\$30.00	\$21.79	\$34.10	\$12.31
Radiologic Technologists	\$29.51	\$22.25	\$33.14	\$10.89
Cardiovascular Technologists and Technicians	\$23.75	\$13.29	\$28.97	\$15.68
Occupational Therapy Assistants	\$21.85	\$17.34	\$24.11	\$6.76
Physical Therapist Assistants	\$21.71	\$15.80	\$24.66	\$8.87
Surgical Technologists	\$21.21	\$15.39	\$24.13	\$8.74
Medical and Clinical Laboratory Technicians	\$19.50	\$12.54	\$22.97	\$10.43
Social Workers	\$19.29	\$13.77	\$22.06	\$8.28
Dietetic Technicians	\$19.03	\$14.25	\$21.42	\$7.17
Licensed Practical and Licensed Vocational Nurses	\$18.59	\$16.34	\$19.72	\$3.38
Mental Health Counselors	\$18.41	\$11.70	\$21.76	\$10.07
Medical Records and Health Information Technicians	\$18.16	\$13.35	\$20.57	\$7.22
Dental Assistants	\$16.91	\$13.50	\$18.62	\$5.12
Medical Assistants	\$15.82	\$12.67	\$17.39	\$4.72
Orderlies	\$14.67	\$9.88	\$17.07	\$7.19
Medical Secretaries	\$14.44	\$11.27	\$16.03	\$4.76
Pharmacy Technicians	\$14.05	\$10.63	\$15.76	\$5.13
Nursing Assistants	\$13.35	\$10.81	\$14.62	\$3.81
Home Health Aides	\$12.87	\$10.71	\$13.95	\$3.24
Personal Care Aides	\$12.70	\$10.47	\$13.82	\$3.36
* Information on social workers reflect combined wage data for child, family, school, healthcare, mental health, substance abuse, and all other social workers.				

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Graduations by Occupation

Graduations for selected health occupations from school years 2012 through 2016 for the Mohawk Valley region are reported in Table 107. Between 2012 and 2016, the Mohawk Valley experienced the largest increase in number of graduations for RNs (145), and physical therapists (131), followed by medical and health service managers (48). LPNs and occupational therapists experienced decreases in number of graduations, losing 32 and 4, respectively.

Table 107. Number of Graduations in Selected Health Occupations in the Mohawk Valley Region, 2012-2016

Occupation	2012	2013	2014	2015	2016	Change 2012-2016	
						Number	Percent
Registered Nurses	301	427	378	399	446	145	48.2%
Physical Therapists	132	200	241	240	263	131	99.2%
Medical and Health Service Managers	29	31	52	46	77	48	165.5%
Nurse Practitioners/Clinical Nurse Specialists	0	32	33	42	45	45	N/A
Medical Assistants	10	12	12	21	22	12	120.0%
Medical Secretaries	23	36	34	35	35	12	52.2%
Surgical Technologists	4	4	17	17	14	10	250.0%
Respiratory Therapists	10	12	16	17	14	4	40.0%
Physical Therapy Assistants/Aides	17	17	16	19	19	2	11.8%
Dietitians and Nutritionists	41	44	37	45	41	0	0.0%
Occupational Therapists	66	53	57	49	62	-4	-6.1%
Licensed Practical Nurses	183	198	178	167	151	-32	-17.5%
Medical and Clinical Laboratory Technologists	N/A	N/A	1	1	2	N/A	N/A
Radiologic Technologists	15	23	9	N/A	N/A	N/A	N/A

Source: Integrated Postsecondary Education Data System

Licensed Health Professionals

Between 2013 and 2017, the number of licensed physical therapists increased by 53, followed by occupational therapists (40), and nurse practitioners (40). Dental assistants experienced the highest percentage growth in licenses (24%), followed by dietitians/nutritionists (14%), and physical therapists (14%). In contrast, there were a few decreases in number of licensed occupational therapy assistants, clinical laboratory technicians, pharmacists, clinical laboratory technologists, LPNs, speech-language pathologists, and RNs, with the number of licensed LPNs decreasing by 124 (Table 108).

Table 108. Number of Licensed Individuals in Selected Health Occupations in the Mohawk Valley Region, 2013-2017

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Physical Therapists	377	381	400	413	430	53	14.1%
Occupational Therapists	331	342	347	353	371	40	12.1%
Nurse Practitioners	466	463	480	486	506	40	8.6%
Social Workers	671	685	728	727	707	36	5.4%
Respiratory Therapists	216	220	231	230	240	24	11.1%
Physical Therapy Assistants	222	218	229	235	237	15	6.8%
Dietitian/Nutritionists	92	98	101	107	105	13	14.1%
Physician Assistants	208	208	215	220	221	13	6.3%
Dental Hygienists	286	284	293	297	297	11	3.8%
Dental Assistants	34	35	39	43	42	8	23.5%
Speech-Language Pathologists	236	237	237	234	233	-3	-1.3%
Clinical Laboratory Technicians	74	71	70	56	57	-17	-23.0%
Occupational Therapy Assistants	146	142	138	125	125	-21	-14.4%
Clinical Laboratory Technologists	340	346	347	320	316	-24	-7.1%
Registered Nurses	7,131	7,015	7,127	7,094	7,087	-44	-0.6%
Pharmacists	527	519	514	507	482	-45	-8.5%
Licensed Practical Nurses	3,528	3,509	3,523	3,344	3,404	-124	-3.5%
TOTAL	14,885	14,773	15,018	14,791	14,860	-25	-0.2%

Source: New York State Education Department, Office of Professions

Demand for Health Workers

Hospitals

Regions within upstate New York were combined due to low survey response rates. Upstate hospitals reported the most difficulty recruiting clinical laboratory technologists, and RNs (2+ years of experience), and followed by all NPs, physician assistants, and clinical laboratory technicians. Clinical laboratory technologists, psychiatric NPs and RNs (2+ years of experience), and RNs, (<2 years of experience) were the most difficult to retain (Table 109).

Table 109. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in Upstate New York, 2017

Occupation	Recruitment			Retention		
	Reasons for Difficulty			Reasons for Difficulty		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of exp.)	4.1	90%	33%	3.6	43%	33%
RNs (<2 years of exp.)	3.2	52%	29%	3.5	42%	32%
Nurse Managers	3.5	60%	25%	2.7	32%	21%
Nurse Practitioners (excluding psychiatric)	3.9	67%	22%	3.2	33%	17%
Physician Assistants	3.8	68%	16%	3.1	33%	11%
Pharmacists	2.8	25%	6%	2.1	14%	0%
Psychiatric NPs	3.9	78%	44%	3.6	45%	18%
Psychologists	2.7	43%	14%	2.3	29%	0%
LCSWs	3.0	33%	13%	2.5	20%	13%
LMSWs	2.8	39%	11%	2.6	25%	13%
Physical Therapists	3.5	43%	38%	2.7	25%	35%
Occupational Therapists	3.3	41%	29%	2.5	12%	12%
Speech-Language Path.	3.5	63%	25%	2.8	31%	31%
Clinical Lab Technicians	3.8	71%	29%	3.2	35%	29%
Clinical Lab Technologists	4.4	80%	40%	3.9	53%	37%
Medical Coders	3.1	32%	21%	2.8	30%	20%
Surgical Technicians	3.6	68%	16%	2.7	25%	15%
Care Coordinators	2.1	21%	0%	1.8	13%	0%
Case Managers	2.4	33%	6%	2.1	18%	6%
Care Managers	2.7	33%	7%	2.1	20%	0%
Patient Navigators	1.9	7%	7%	1.8	8%	8%
Community Health Workers	2.6	11%	33%	1.7	9%	18%

- Sixty-four percent (64%) of responding hospitals indicated they had difficulty hiring part-time workers, including RNs, physical therapists, occupational therapists, and nurse practitioners.
- Fifty-two percent (52%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including RNs, LPNs, clinical laboratory technologists, CNAs, and patient care techs.
- Sixty-five percent (65%) of respondents reported that they were anticipating expanding in clinical titles, while only 25% indicated they were expanding in non-clinical titles.

Nursing Homes

Nursing homes in the Mohawk Valley region in 2017 reported the most difficulty recruiting experienced RNs and MDS coordinators, followed by nurse directors and managers, LPNs, and CNAs. CNAs and experienced RNs were the most difficult to retain, followed by newly licensed RNs, LPNs, and MDS coordinators (Table 110).

Table 110. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in the Mohawk Valley Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	3.6	3.8	72.2%	33.3%
Dietitians/Nutritionists	3.2	2.7	33.3%	22.2%
Licensed Practical Nurses	3.8	3.4	55.6%	55.6%
Occupational Therapists	3.0	2.7	28.6%	14.3%
Occupational Therapy Assistants	3.3	3.1	28.6%	21.4%
Physical Therapists	3.2	3.0	28.6%	21.4%
Physical Therapist Assistants	2.9	2.8	21.4%	7.1%
Registered Nurses (RNs)				
Newly Licensed RNs	3.3	3.5	61.1%	27.8%
Experienced RNs	3.9	3.8	66.7%	44.4%
MDS Coordinators	3.9	3.3	68.8%	31.3%
Nurse Directors/Managers	3.8	2.9	55.6%	27.8%
Social Workers (SWs)				
Licensed Clinical Social Workers	2.5	2.6	15.4%	15.4%
Licensed Master Social Workers	2.6	2.6	20.0%	20.0%
Speech-Language Pathologists	3.2	2.9	21.4%	21.4%

- Fifty-nine percent (59%) of nursing homes reported difficulty hiring part-time workers.
- Seventy-one percent (71%) of nursing homes indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Twenty-nine (29%) of nursing homes reported expanding clinical services next year. Six percent (6%) of nursing homes reported expanding non-clinical services next year.

Home Health Care Agencies

Home health care agencies in the Mohawk Valley reported the most difficulty recruiting respiratory therapists, followed by personal care aides, RNs, and home health aides (Table 111). Similarly, respondents reported the most difficulty retaining respiratory therapists, followed by personal care aides and RNs.

Table 111. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in the Mohawk Valley Regions, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Home Health Aides	4.2	3.4	80%	40%
Homemakers	3.6	3.4	14%	43%
Personal Care Aides	4.6	3.7	83%	117%
Licensed Practical Nurses	3.4	2.8	43%	50%
Occupational Therapists	3.0	2.3	25%	0%
Physical Therapists	3.0	2.3	25%	0%
Registered Nurses	4.4	3.6	44%	44%
Respiratory Therapists	5.0	5.0	50%	0%
Licensed Clinical Social Workers	3.0	2.8	25%	25%
Licensed Master's Social Workers	3.2	2.8	20%	0%

- Seventy-five percent (75%) of home health care agencies indicated difficulty hiring full-time workers.
- Seventy-six percent (76%) of home health care agencies indicated difficulty hiring part-time workers.
- One hundred percent (100%) of home health care agencies indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Twenty-five percent (25%) of respondents indicated that they would be expanding their professional workforce (licensed PNs, RNs, social workers, others) within the next year.
- Sixty-two (62%) of respondents indicated that they would be expanding their paraprofessional workforce (eg. home health aides, personal care aides, others) within the next year.
- Ten percent (10%) of respondents indicated that they would be expanding non-clinical workforce (eg. managers, medical billers, schedulers, information technology workers, others) within the next year.

FQHCs

The North Country and Mohawk Valley regions were combined due to low survey response rates. FQHCs in these regions had the most difficulty recruiting substance abuse counselors, followed by psychiatric NPs, and dentists. FQHCs in these regions had the most difficulty retaining psychiatric NPs, pediatricians, psychiatrists, and dentists (Table 112).

Table 112. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in the Mohawk Valley and North Country Regions, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	4.0	3.4
	Internal Medicine	4.0	3.7
	Ob/Gyn	3.0	2.0
	Pediatricians	4.0	3.5
	Physician Assistants (PAs)	2.8	3.0
Nurse Practitioners	Overall – All Specialties	3.3	3.3
	Pediatric	3.0	2.0
	Adult	3.0	2.0
	Family	3.0	3.3
	Psychiatric	4.3	4.0
Nurses	Registered Nurses	3.8	3.3
	Licensed Practical Nurses	3.6	3.0
Behavioral Health	Psychiatrists	3.5	3.5
	Psychologists	3.0	2.0
	Substance Abuse Counselors	5.0	2.5
	Social Workers	4.0	3.3
Oral Health	Dentists	4.2	3.5
	Dental Hygienists	2.4	2.5
Coordination/Patient Care	Care Coordinators	3.0	3.0
	Case Managers	2.3	2.5
	HIV Counselors	4.0	3.0
Patient/Community Education	Community Health Workers	4.0	3.0
	Patient Health Educators	4.0	3.0
	Nutritionists/Nutrition Educators	2.5	2.5
Enabling Services	Patient Health Navigators	4.0	3.0
	Outreach Workers	3.0	2.5
	Transportation Workers	4.0	2.0
	Interpreters	4.0	2.0
Administrative Support	IT Systems Admin/Maintenance	2.5	1.5
Others	Physical Therapists	1.0	1.0
	Occupational Therapists	0.0	0.0

- Eighty-three percent (83%) of FQHCs in these regions anticipated expanding one or more service.

Employment Projections by Health Occupation

According to the NYSDOL, the largest number of average annual job openings projected in the Mohawk Valley region between 2014 and 2024 will be for home health aides (210), RNs (180), personal care aides (130) and nursing assistants (130) (Table 113).

Table 113. Employment Projections for Selected Health Occupations in the Mohawk Valley Region, 2014 and 2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Openings ^a
			Number	Percent	
Home Health Aides	4,330	5,450	1,120	25.9%	210
Personal Care Aides	4,610	5,530	920	20.0%	130
Registered Nurses	4,910	5,520	610	12.4%	180
Nursing Assistants	3,660	4,150	490	13.4%	130
Social Workers	1,120	1,230	110	9.8%	30
Licensed Practical and Licensed Vocational Nurses	2,290	2,570	280	12.2%	100
Medical Assistants	420	510	90	21.4%	20
Physical Therapists	290	340	50	17.2%	20
Emergency Medical Technicians and Paramedics	530	770	240	45.3%	30
Medical and Health Services Managers	760	800	40	5.3%	20
Dental Assistants	480	570	90	18.8%	20
Nurse Practitioners	360	470	110	30.6%	20
Physician Assistants	150	190	40	26.7%	0
Clinical, Counseling, and School Psychologists	330	370	40	12.1%	10
Speech-Language Pathologists	200	220	20	10.0%	10
Dental Hygienists	210	240	30	14.3%	0
Occupational Therapists	200	230	30	15.0%	0
Pharmacy Technicians	560	630	70	12.5%	20
Medical Records and Health Information	250	290	40	16.0%	10
Medical and Clinical Laboratory Technicians	130	140	10	7.7%	0
Diagnostic Medical Sonographers	180	210	30	16.7%	0
Radiologic Technologists	370	380	10	2.7%	10
Pharmacists	530	550	20	3.8%	10
Dietitians and Nutritionists	140	160	20	14.3%	0
Medical and Clinical Laboratory Technologists	200	210	10	5.0%	10
Respiratory Therapists	220	250	30	13.6%	10
Surgical Technologists	110	130	20	18.2%	0
Cardiovascular Technologists and Technicians	60	70	10	16.7%	0
Psychiatric Aides	290	290	0	0.00%	10
Orderlies	160	190	30	18.8%	0

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the profession.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024

H. North Country

The North Country includes the counties of Clinton, Essex, Franklin, Hamilton, Jefferson, Lewis, and Saint Lawrence.

Population

The North Country region was much less racially and ethnically diverse compared with New York State as a whole. Additionally, the region had a greater percentage of people under 200% of the FPL and an equivalent proportion of the population under 100% of the FPL compared with the state. A higher percentage of the North Country region population had high school or equivalent or associate degrees, but a much smaller percentage held a bachelor's degree or higher than the state as a whole (Table 114).

Table 114. Selected Population Characteristics in the North Country Region, 2011-2015 (5-Year Average)

Population Characteristics ^a	Region		Statewide Percent
	Number	Percent	
Total population	434,719	N/A	N/A
Population under 100% FPL	65,549	15.1%	15.3%
Population under 200% FPL	143,908	33.1%	31.6%
Population aged birth to 17 years	92,422	21.3%	21.6%
Population aged 65 and older	63,572	14.6%	14.3%
Population female aged 15 to 44	80,077	18.4%	20.6%
Women aged 15 to 19 who had a birth in past 12 mos.	293	<0.1%	<0.1%
Women aged 20 to 34 who had a birth in past 12 mos.	4,397	1.0%	0.8%
Women aged 35 to 50 who had a birth in past 12 mos.	805	0.2%	0.3%
Black/African American, non-Hispanic	15,908	3.7%	14.4%
Hispanic/Latino	16,246	3.7%	18.4%
Asian/Pacific Islander, non-Hispanic	4,862	1.1%	7.9%
American Indian/Native Alaskan, non-Hispanic	5,405	1.2%	0.2%
Two or more/other races	7,903	1.8%	1.7%
Less than high school education	35,374	12.3%	14.4%
High school or equivalent	159,838	55.5%	42.9%
Associate degree	32,060	11.1%	8.5%
Bachelor's degree	32,378	11.2%	19.4%
Master's degree or higher	28,235	9.8%	14.8%
Home Ownership	238,622	71.8%	56.2%

^a Education levels and rates are based on individuals aged 25 years and older.

Source: US Census, American Community Survey, 2011-2015 (5-Year Average); Behavioral Risk Factor Surveillance System, 2016

Health Status

The North Country region had higher rates of total deaths, deaths due to cancer, and deaths due to diabetes per 100,000 total population but a slightly lower rate of death due to heart disease than the state as a whole. The North Country also had higher rates of hospitalizations due to chronic lower respiratory disease per 10,000 total population but had lower rates of asthma hospitalizations (pediatric and adult) than the state as a whole. The North Country region also had higher rates of ED visits and preventable hospitalizations than the statewide rate (Table 115).

Table 115. Selected Health Indicators in the North Country Region

Health Indicator	Region		Statewide	
	Number	Rate	Number	Rate
Total deaths, per 100,000	10,849	830.5	442,323	750.1
Deaths due to heart disease, per 100,000	2,820	215.9	128,806	218.4
Deaths due to all cancers, per 100,000	2,598	199.0	105,645	180.7
Deaths due to diabetes, per 100,000	315	24.1	12,003	20.4
Total births, per 1,000 females aged 15 to 44	15,978	66.2	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	995	23.0	33,588	17.8
Low-birthweight births, as a percent of total births	1,118	7.1	56,238	7.9
Late/no prenatal care, as a percent of total births	570	3.6	39,555	5.6
Infant deaths, per 1,000 live births	97	6.1	3,403	4.8
Total hospitalizations, per 10,000	139,772	1,069.9	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	4,624	135.0	198,511	127.9
Adult asthma hospitalizations, per 10,000	913	7.0	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	143	4.4	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	307	8.9	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	234	8.5	34,386	27.0
Diabetes hospitalizations, per 10,000	29,504	225.9	1,401,239	237.6
CLRD hospitalizations, per 10,000	4,683	35.8	204,932	34.8
Heart disease hospitalizations, per 10,000	13,175	100.9	609,961	103.4
Total ED visits, per 10,000	666,933	5,105.3	24,036,192	4,076.2
One or more personal doctor(s), as percent	282,104	84.9	13,578,631	86.7
Had a checkup within the past two years, as percent	271,047	81.5	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

Primary Care Physicians

There were nearly 340 primary care physicians practicing in the North Country region. Forty-six percent (46%) were in family or general practice and 32% were in general internal medicine. There were nearly 50 psychiatrists, including child and adolescent psychiatrists, practicing in the North Country region, or 11.3 per 100,000 total population. Clinton County had the highest rate of primary care physicians with 96.9 physicians per 100,000 total population, and Franklin County had the lowest rate with 68.3 per 100,000 total population (Table 116 and Figure 30).

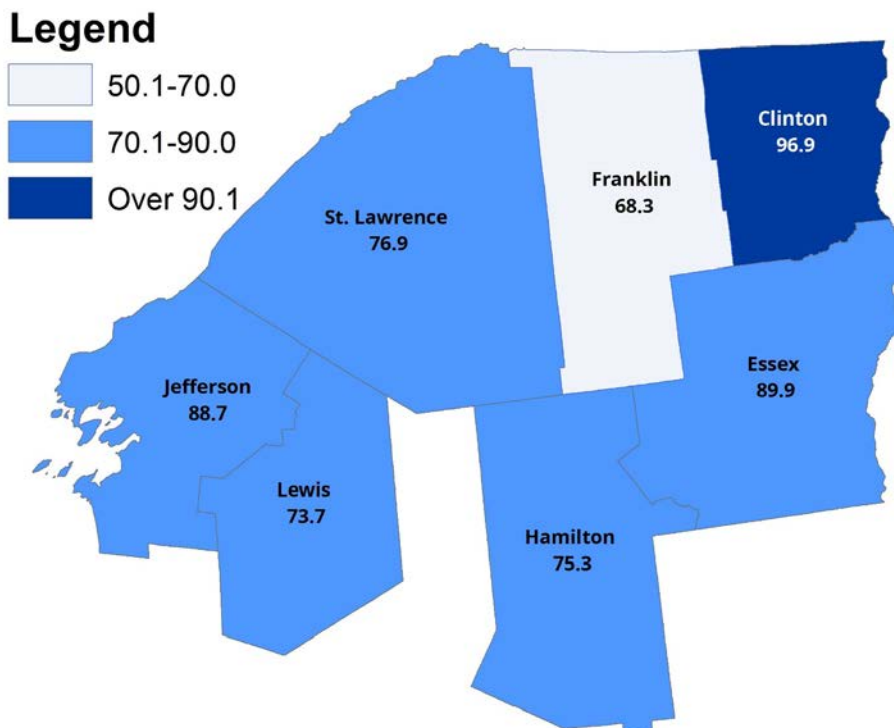
Table 116. Primary Care Physicians and Psychiatrists in the North Country Region, by Specialty, 2017

Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	157	36.1
Internal Medicine (General)	108	24.8
Subtotal	265	61.0
Obstetrics/Gynecology	38	47.5
Pediatrics (General)	36	39.0
Primary Care Total	339	N/A
Psychiatrist	49	11.3

^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

Figure 30. Number of Selected Primary Care Physicians per 100,000 Population in the North Country Region, by County, 2017



Employment

Total Health Sector Employment

Total health sector employment in the North Country region grew by nearly 6% between 2012 and 2016, adding almost 1,000 jobs. Employment in ambulatory care grew by over 450 jobs (9%), home health care increased by 273 (51%), hospitals grew by 187 jobs (2%), and nursing home and personal care facilities increased by 82 jobs (3%) (Table 117).

Table 117. Number of Health Care Jobs in the North Country Region, by Setting, 2012-2016

Setting	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Hospitals	9,251	8,982	8,957	9,216	9,438	187	2.0%
Ambulatory care (excluding home health)	5,180	3,040	5,358	5,559	5,637	457	8.8%
Nursing home and personal care facilities	2,937	5,286	3,063	3,023	3,019	82	2.8%
Home health care	531	589	837	803	804	273	51.4%
Total	17,899	17,897	18,215	18,601	18,898	999	5.6%

Source: New York State Department of Labor, ES-202

Employment and Wage by Occupation

Employment for selected health care occupations for the North Country Region is presented in Table 118. As reported in the first quarter of 2017, registered nurses accounted for the most jobs (3,510), followed by personal care aides (3,440) and nursing assistants (2,300). Nuclear medicine technologists (40), occupational therapy assistants (40), dietetic technicians (30), and orderlies (20) had the fewest jobs among the selected health care occupations in the North Country region.

Wages in selected health care occupations for the North Country Region are reported in Table 119. These wages are based on NYSDOL 2013-2016 Occupational Wages survey data, which were adjusted to include the first quarter of 2017. Certified registered nurse anesthetists earned the highest average hourly wage (\$109.51), followed by pharmacists (\$60.04) and physician assistants (\$57.38). Home health aides (\$12.66) and pharmacy aides (\$11.42) were the lowest wage earners for the selected health occupations in the North Country region.

Table 118. Number of Jobs in Selected Health Occupations in the North Country Region, 2017

Occupation	Employment
Registered Nurses	3,510
Personal Care Aides	3,440
Nursing Assistants	2,300
Licensed Practical and Licensed Vocational Nurses	1,630
Home Health Aides	1,240
Social Workers	980
Pharmacists	390
Physical Therapists	390
Medical and Health Services Managers	370
Pharmacy Technicians	360
Dental Assistants	330
Dental Hygienists	290
Physician Assistants	250
Medical Assistants	250
Nurse Practitioners	220
Speech-Language Pathologists	210
Medical Records and Health Information Technicians	210
Occupational Therapists	200
Radiologic Technologists and Technicians	200
Medical and Clinical Laboratory Technologists	180
Pharmacy Aides	130
Medical and Clinical Laboratory Technicians	120
Physical Therapist Assistants	120
Medical Secretaries	120
Respiratory Therapists	100
Dietitians and Nutritionists	90
Mental Health Counselors	80
Cardiovascular Technologists and Technicians	70
Surgical Technologists	70
Nuclear Medicine Technologists	40
Occupational Therapy Assistants	40
Dietetic Technicians	30
Certified Registered Nurse Anesthetists	20

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Table 119. Average Hourly Wage in Selected Health Occupations in the North Country Region, 2017

Occupation	Average Hourly Wage	Entry Wage	Experienced Wage	Range Experienced Versus Entry Wages
Certified Registered Nurse Anesthetists	\$109.51	\$84.07	\$122.23	\$38.16
Pharmacists	\$60.04	\$45.19	\$67.47	\$22.27
Physician Assistants	\$57.38	\$43.78	\$64.18	\$20.40
Medical and Health Services Managers	\$49.85	\$33.48	\$58.03	\$24.55
Nurse Practitioners	\$47.39	\$34.10	\$54.04	\$19.94
Physical Therapists	\$34.30	\$26.79	\$38.06	\$11.26
Dental Hygienists	\$33.83	\$27.67	\$36.91	\$9.24
Registered Nurses	\$32.56	\$24.54	\$36.58	\$12.04
Nuclear Medicine Technologists	\$32.02	\$22.61	\$36.73	\$14.12
Medical and Clinical Laboratory Technologists	\$31.35	\$26.93	\$33.56	\$6.63
Speech-Language Pathologists	\$31.33	\$25.38	\$34.31	\$8.93
Occupational Therapists	\$30.97	\$23.58	\$34.66	\$11.08
Respiratory Therapists	\$30.45	\$26.73	\$32.32	\$5.59
Dietitians and Nutritionists	\$29.56	\$23.02	\$32.84	\$9.81
Radiologic Technologists and Technicians	\$28.22	\$21.98	\$31.34	\$9.37
Cardiovascular Technologists and Technicians	\$28.13	\$18.74	\$32.83	\$14.09
Social Workers	\$24.94	\$18.28	\$28.28	\$10.00
Mental Health Counselors	\$24.25	\$15.35	\$28.70	\$13.35
Surgical Technologists	\$22.68	\$17.72	\$25.16	\$7.44
Medical and Clinical Laboratory Technicians	\$22.38	\$16.41	\$25.37	\$8.96
Occupational Therapy Assistants	\$22.19	\$18.50	\$24.04	\$5.54
Physical Therapist Assistants	\$21.99	\$17.41	\$24.27	\$6.87
Dietetic Technicians	\$20.03	\$15.87	\$22.12	\$6.25
Licensed Practical and Licensed Vocational Nurses	\$19.09	\$16.02	\$20.62	\$4.59
Medical Records and Health Information Technicians	\$18.70	\$13.63	\$21.23	\$7.61
Medical Assistants	\$16.79	\$12.92	\$18.72	\$5.80
Dental Assistants	\$15.50	\$12.14	\$17.19	\$5.04
Medical Secretaries	\$15.38	\$12.89	\$16.63	\$3.74
Pharmacy Technicians	\$14.78	\$10.56	\$16.88	\$6.33
Nursing Assistants	\$13.59	\$10.81	\$14.98	\$4.17
Personal Care Aides	\$13.31	\$10.20	\$14.87	\$4.66
Home Health Aides	\$12.66	\$10.51	\$13.74	\$3.23
Pharmacy Aides	\$11.42	\$9.70	\$12.34	\$2.63
* Information on social workers reflect combined wage data for child, family, school, healthcare, mental health, substance abuse, and all other social workers.				

Source: New York State Department of Labor, Labor Statistics, Occupational Wages

Graduations by Occupation

Graduations for selected health occupations from school years 2012 through 2016 for the North Country region are reported in Table 120. Between 2012 and 2016, the North Country experienced the largest increase in number of graduations for medical and health service managers (8) and RNs (8), followed by dental hygienists (7). LPNs and medical and clinical laboratory technologists both experienced losses of graduations by 18 and 1 respectively.

Table 120. Number of Graduations in Selected Health Occupations in the North Country Region, 2012-2016

Occupation	2012	2013	2014	2015	2016	Change 2012-2016	
						Number	Percent
Medical and Health Service Managers	10	16	20	15	18	8	80.0%
Registered Nurses	281	369	285	296	289	8	2.8%
Dental Hygienists	16	25	20	27	23	7	43.8%
Physical Therapists	13	15	20	22	19	6	46.2%
Physical Therapy Assistants/Aides	20	16	22	21	21	1	5.0%
Medical and Clinical Laboratory Technologist	6	6	11	3	5	-1	-16.7%
Licensed Practical Nurses	203	220	192	189	185	-18	-8.9%
Dietitians and Nutritionists	N/A	N/A	16	8	24	N/A	N/A
Medical Secretaries	N/A	19	23	16	32	N/A	N/A
Physician Assistants	N/A	N/A	N/A	16	20	N/A	N/A
Radiologic Technologists	N/A	12	9	9	10	N/A	N/A
Speech-Language Pathologists	N/A	N/A	19	19	20	N/A	N/A

Source: Integrated Postsecondary Education Data System

Licensed Health Professionals

Between 2013 and 2017, dental assistants (43%) experienced the highest percentage increase in the North Country region, followed by physician assistants (22%), occupational therapists (20%), and social workers (9%). The number of licenses of clinical laboratory technician (-5%), occupational therapy assistants (-6%), pharmacists (-6%), respiratory therapists (-5%), LPNs (-4%), clinical laboratory technologists (-4%), dental hygienists (-3%), and RNs (-1%) all declined in the North Country region (Table 121).

Table 121. Number of Licensed Individuals in Selected Health Occupations in the North Country Region, 2013-2017

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Physician Assistants	226	231	257	261	275	49	21.7%
Social Workers	415	430	446	451	453	38	9.2%
Occupational Therapists	149	154	162	172	178	29	19.5%
Speech-Language Pathologists	260	265	270	269	280	20	7.7%
Dental Assistants	40	42	47	51	57	17	42.5%
Nurse Practitioners	289	292	295	300	306	17	5.9%
Physical Therapists	332	330	336	344	347	15	4.5%
Physical Therapy Assistants	167	175	187	184	181	14	8.4%
Dietitian/Nutritionists	81	85	88	83	82	1	1.2%
Clinical Laboratory Technicians	63	61	62	59	60	-3	-4.8%
Respiratory Therapists	89	91	87	79	85	-4	-4.5%
Occupational Therapy Assistants	84	79	81	77	79	-5	-6.0%
Dental Hygienists	246	239	247	242	239	-7	-2.8%
Clinical Laboratory Technologists	257	250	254	244	246	-11	-4.3%
Pharmacists	396	383	379	380	373	-23	-5.8%
Registered Nurses	5,504	5,423	5,529	5,480	5,466	-38	-0.7%
Licensed Practical Nurses	2,751	2,711	2,771	2,625	2,641	-110	-4.0%
TOTAL	11,349	11,241	11,498	11,301	11,348	-1	0.0%

Source: New York State Education Department, Office of Professions

Demand for Health Workers

Hospitals

Regions within upstate New York were combined due to low survey response rates. Upstate hospitals reported the most difficulty recruiting clinical laboratory technologists, and RNs (2+ years of experience), followed by all NPs, physician assistants, and clinical laboratory technicians. Clinical laboratory technologists, psychiatric NPs and RNs (2+ years of experience), and RNs, (<2 years of experience) were the most difficult to retain (Table 122).

Table 122. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in Upstate New York, 2017

Occupation	Recruitment			Retention		
	Reasons for Difficulty			Reasons for Difficulty		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of exp.)	4.1	90%	33%	3.6	43%	33%
RNs (<2 years of exp.)	3.2	52%	29%	3.5	42%	32%
Nurse Managers	3.5	60%	25%	2.7	32%	21%
Nurse Practitioners (excluding psychiatric)	3.9	67%	22%	3.2	33%	17%
Physician Assistants	3.8	68%	16%	3.1	33%	11%
Pharmacists	2.8	25%	6%	2.1	14%	0%
Psychiatric NPs	3.9	78%	44%	3.6	45%	18%
Psychologists	2.7	43%	14%	2.3	29%	0%
LCSWs	3.0	33%	13%	2.5	20%	13%
LMSWs	2.8	39%	11%	2.6	25%	13%
Physical Therapists	3.5	43%	38%	2.7	25%	35%
Occupational Therapists	3.3	41%	29%	2.5	12%	12%
Speech-Language Path.	3.5	63%	25%	2.8	31%	31%
Clinical Lab Technicians	3.8	71%	29%	3.2	35%	29%
Clinical Lab Technologists	4.4	80%	40%	3.9	53%	37%
Medical Coders	3.1	32%	21%	2.8	30%	20%
Surgical Technicians	3.6	68%	16%	2.7	25%	15%
Care Coordinators	2.1	21%	0%	1.8	13%	0%
Case Managers	2.4	33%	6%	2.1	18%	6%
Care Managers	2.7	33%	7%	2.1	20%	0%
Patient Navigators	1.9	7%	7%	1.8	8%	8%
Community Health Workers	2.6	11%	33%	1.7	9%	18%

- Sixty-four percent (64%) of responding hospitals indicated they had difficulty hiring part-time workers, including RNs, physical therapists, occupational therapists, and nurse practitioners.
- Fifty-two percent (52%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including RNs, LPNs, clinical laboratory technologists, CNAs, and patient care techs.
- Sixty-five percent (65%) of respondents reported that they were anticipating expanding in clinical titles, while only 25% indicated they were expanding in non-clinical titles.

Nursing Homes

Nursing homes in the North Country region in 2017 reported the most difficulty recruiting LPNs and CNAs, followed by nurse directors and managers, experienced RNs, and MDS coordinators. CNAs were cited as the most difficult to retain, followed by LPNs, nurse directors and managers, experienced RNs, and MDS coordinators (Table 123).

Table 123. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in the North Country Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	4.2	4.3	50.0%	16.7%
Dietitians/Nutritionists	3.4	2.8	20.0%	0.0%
Licensed Practical Nurses	4.2	3.7	50.0%	33.3%
Occupational Therapists	3.4	2.5	20.0%	0.0%
Occupational Therapy Assistants	3.4	2.8	20.0%	0.0%
Physical Therapists	3.2	2.5	20.0%	0.0%
Physical Therapist Assistants	3.2	2.5	20.0%	0.0%
Registered Nurses (RNs)				
Newly Licensed RNs	3.5	3.2	50.0%	50.0%
Experienced RNs	3.8	3.5	50.0%	50.0%
MDS Coordinators	3.8	3.5	50.0%	33.3%
Nurse Directors/Managers	4.0	3.7	50.0%	33.3%
Social Workers (SWs)				
Licensed Clinical Social Workers	3.2	2.8	20.0%	0.0%
Licensed Master Social Workers	3.4	3.0	20.0%	0.0%
Speech-Language Pathologists	3.4	2.8	40.0%	0.0%

- Eighty-three percent (83%) of nursing homes reported difficulty hiring part-time workers.
- Sixty-seven percent (67%) of nursing homes indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Fifty percent (50%) of nursing homes indicated expanding clinical services in the next year, and seventeen percent (17%) indicated expanding non-clinical services in the next year.

Home Health Care Agencies

Home health care agencies in the North Country region reported the most difficulty recruiting RNs, LMSWs, followed by occupational therapists, and physical therapists. RNs, and respiratory therapists were cited as the most difficult to retain, followed by homemakers and personal care aides (Table 124).

Table 124. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in the North Country Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Home Health Aides	3.7	3.4	73%	45%
Homemakers	3.4	3.8	80%	20%
Personal Care Aides	4.0	3.7	88%	88%
Licensed Practical Nurses	3.1	2.9	29%	43%
Occupational Therapists	4.6	3.2	57%	43%
Physical Therapists	4.6	3.1	57%	43%
Registered Nurses	4.8	4.0	67%	50%
Respiratory Therapists	4.3	4.0	50%	25%
Licensed Clinical Social Workers	4.4	3.3	40%	40%
Licensed Master's Social Workers	4.7	3.4	50%	33%

- Ninety-two percent (92%) of home health agencies reported difficulty hiring full-time workers.
- Ninety-one percent (91%) of home health agencies reported difficulty hiring part-time workers.
- Sixty-seven percent (67%) of home health agencies reported difficulty hiring bilingual workers.
- One-hundred percent (100%) of home health agencies indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Fifty-eight percent (58%) of home health care agencies in the North Country region indicate that they would be expanding their professional workforce (licensed PNs, RNs, social workers, others) within the next year.
- Fifty (50%) of respondents indicated they would be expanding their paraprofessional workforce (eg. home health aides, personal care aides, others) within the next year.
- Only 18% (18%) of home health care agencies in the North Country region indicated they would be expanding their non-clinical workforce (eg. managers, medical billers, schedulers, information technology workers, others) within the next year.

FQHCs

The North Country and Mohawk Valley regions were combined due to low response rates to the recruitment and retention survey. FQHCs in these combined regions had the most difficulty recruiting substance abuse counselors, followed by psychiatric NPs, and dentists. FQHCs in these areas had the most difficulty retaining psychiatric NPs, followed by pediatricians, psychiatrists, and dentists (Table 125).

Table 125. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in the, Mohawk Valley and North Country Regions, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	4.0	3.4
	Internal Medicine	4.0	3.7
	Ob/Gyn	3.0	2.0
	Pediatricians	4.0	3.5
	Physician Assistants (PAs)	2.8	3.0
Nurse Practitioners	Overall – All Specialties	3.3	3.3
	Pediatric	3.0	2.0
	Adult	3.0	2.0
	Family	3.0	3.3
	Psychiatric	4.3	4.0
Nurses	Registered Nurses	3.8	3.3
	Licensed Practical Nurses	3.6	3.0
Behavioral Health	Psychiatrists	3.5	3.5
	Psychologists	3.0	2.0
	Substance Abuse Counselors	5.0	2.5
	Social Workers	4.0	3.3
Oral Health	Dentists	4.2	3.5
	Dental Hygienists	2.4	2.5
	Case Managers	2.3	2.5
	HIV Counselors	4.0	3.0
Patient/Community Education	Community Health Workers	4.0	3.0
	Patient Health Educators	4.0	3.0
	Nutritionists/Nutrition Educators	2.5	2.5
Enabling Services	Patient Health Navigators	4.0	3.0
	Outreach Workers	3.0	2.5
	Transportation Workers	4.0	2.0
	Interpreters	4.0	2.0
Administrative Support	IT Systems Admin/Maintenance	2.5	1.5
Others	Physical Therapists	1.0	1.0
	Occupational Therapists	0.0	0.0

- Eighty-three percent (83%) of FQHCs in these regions anticipated expanding one or more service.

Employment Projections by Health Occupation

According to the NYSDOL, the largest number of average annual job openings projected in the North Country region between 2014 and 2024 will be for RNs (130), personal care aides (110), home health aides (70), and nursing assistants (70) (Table 126).

Table 126. Employment Projections for Selected Health Occupations in the North Country Region, 2014-2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Openings
			Number	Percent	
Home Health Aides	1,290	1,720	430	33.3%	70
Personal Care Aides	3,890	4,660	770	19.8%	110
Registered Nurses	3,780	4,200	420	11.1%	130
Nursing Assistants	2,230	2,460	230	10.3%	70
Social Workers	990	1,070	80	8.1%	30
Licensed Practical and Licensed Vocational Nurses	1,700	1,820	120	7.1%	60
Medical Assistants	220	260	40	18.2%	10
Physical Therapists	360	430	70	19.4%	20
Emergency Medical Technicians and Paramedics	330	420	90	27.3%	20
Medical and Health Services Managers	440	480	40	9.1%	10
Dental Assistants	330	380	50	15.2%	20
Nurse Practitioners	200	250	50	25.0%	20
Physician Assistants	190	250	60	31.6%	10
Clinical, Counseling, and School Psychologists	310	340	30	9.7%	10
Speech-Language Pathologists	290	350	60	20.7%	20
Dental Hygienists	270	320	50	18.5%	10
Occupational Therapists	190	230	40	21.1%	0
Pharmacy Technicians	360	390	30	8.3%	0
Medical Records and Health Information Technicians	170	190	20	11.8%	0
Medical and Clinical Laboratory Technicians	100	110	10	10.0%	0
Diagnostic Medical Sonographers	80	90	10	12.5%	0
Radiologic Technologists	230	250	20	8.7%	0
Pharmacists	330	340	10	3.0%	10
Dietitians and Nutritionists	90	100	10	11.1%	0
Medical and Clinical Laboratory Technologists	190	200	10	5.3%	0
Respiratory Therapists	120	130	10	8.3%	0
Surgical Technologists	90	100	10	11.1%	0
Cardiovascular Technologists and Technicians	50	60	10	20.0%	0

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the profession.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024

I. Southern Tier

The Southern Tier region includes the counties of Broome, Chemung, Chenango, Delaware, Schuyler, Steuben, Tioga, and Tompkins.

Population

Between 2011 and 2015 the Southern Tier region had a larger portion of its population than the state as a whole living under 100% and 200% of the FPL than the state as a whole. Additionally, the region was much less racially and ethnically diverse than New York State. The Southern Tier also had a higher percentage of residents with high school or associate degrees but a lower percentage of people with a bachelor's degree or higher, compared with the state overall (Table 127).

Table 127. Selected Population Characteristics in the Southern Tier Region, 2011-2015 (5-Year Average)

Population Characteristics ^a	Region		Statewide Percent
	Number	Percent	
Total population	653,939	N/A	N/A
Population under 100% FPL	103,030	15.8%	15.3%
Population under 200% FPL	219,626	33.6%	31.6%
Population aged birth to 17 years	130,955	20.0%	21.6%
Population aged 65 and older	108,877	16.6%	14.3%
Population female aged 15 to 44	125,636	19.2%	20.6%
Women aged 15 to 19 who had a birth in past 12 mos.	360	<0.1%	<0.1%
Women aged 20 to 34 who had a birth in past 12 mos.	5,692	0.9%	0.8%
Women aged 35 to 50 who had a birth in past 12 mos.	1,505	0.2%	0.3%
Black/African American, non-Hispanic	21,673	3.3%	14.4%
Hispanic/Latino	20,125	3.1%	18.4%
Asian/Pacific Islander, non-Hispanic	22,272	3.4%	7.9%
American Indian/Native Alaskan, non-Hispanic	1,499	0.2%	0.2%
Two or more/other races	13,186	2.0%	1.7%
Less than high school education	43,686	10.0%	14.4%
High school or equivalent	222,153	50.9%	42.9%
Associate degree	51,814	11.9%	8.5%
Bachelor's degree	61,729	14.2%	19.4%
Master's degree or higher	56,859	13.0%	14.8%
Home Ownership	358,649	70.8%	56.2%

^a Education levels and rates are based on individuals aged 25 years and older.

Source: US Census, American Community Survey, 2011-2015 (5-Year Average); Behavioral Risk Factor Surveillance System, 2016

Health Status

The Southern Tier region had higher rates of total deaths, deaths due to heart disease, deaths due to cancer, and deaths due to diabetes per 100,000 total population than New York State. The Southern Tier region had a lower overall birth rate but had a higher teen birth rate than the state as a whole. In addition, the Southern Tier region had greater rates of ED visits and preventable hospitalizations per 100,000 total population than New York State. The region had lower rates of adult and pediatric asthma hospitalizations and heart disease hospitalizations than New York State (Table 128).

Table 128. Selected Health Indicators in the Southern Tier Region

Health Indicator	Region		Statewide	
	Number	Rate	Number	Rate
Total deaths, per 100,000	18,932	965.6	442,323	750.1
Deaths due to heart disease, per 100,000	5,067	258.4	128,806	218.4
Deaths due to all cancers, per 100,000	4,259	216.3	105,645	180.7
Deaths due to diabetes, per 100,000	457	23.3	12,003	20.4
Total births, per 1,000 females aged 15 to 44	19,991	53.2	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	1,441	19.6	33,588	17.8
Low-birthweight births, as a percent of total births	1,448	7.3	56,238	7.9
Late/no prenatal care, as a percent of total births	921	4.6	39,555	5.6
Infant deaths, per 1,000 live births	103	5.2	3,403	4.8
Total hospitalizations, per 10,000	206,601	1,053.8	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	6,894	131.8	198,511	127.9
Adult asthma hospitalizations, per 10,000	1,504	7.7	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	231	5.3	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	459	8.4	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	351	8.9	34,386	27.0
Diabetes hospitalizations, per 10,000	43,710	222.9	1,401,239	237.6
CLRD hospitalizations, per 10,000	6,419	32.7	204,932	34.8
Heart disease hospitalizations, per 10,000	20,238	103.2	609,961	103.4
Total ED visits, per 10,000	819,525	4,180.0	24,036,192	4,076.2
One or more personal doctor(s), as percent	425,786	84.1	13,578,631	86.7
Had a checkup within the past two years, as percent	434,720	85.8	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

Primary Care Physicians

There were nearly 600 primary care physicians practicing in the Southern Tier region in 2017. Thirty-nine percent (39%) were in general internal medicine and another 39% were in family or general practice. There were slightly more than 90 psychiatrists, including child and adolescent psychiatrists, practicing in the Southern Tier region, or 14.1 per 100,000 total population. Chemung County had the highest rate of primary care physicians with 123.1 per 100,000 total population. Tioga County had the lowest rate with 36.9 per 100,000 total population (Table 129 and Figure 31).

Table 129. Primary Care Physicians and Psychiatrists in the Southern Tier Region, by Specialty, 2017

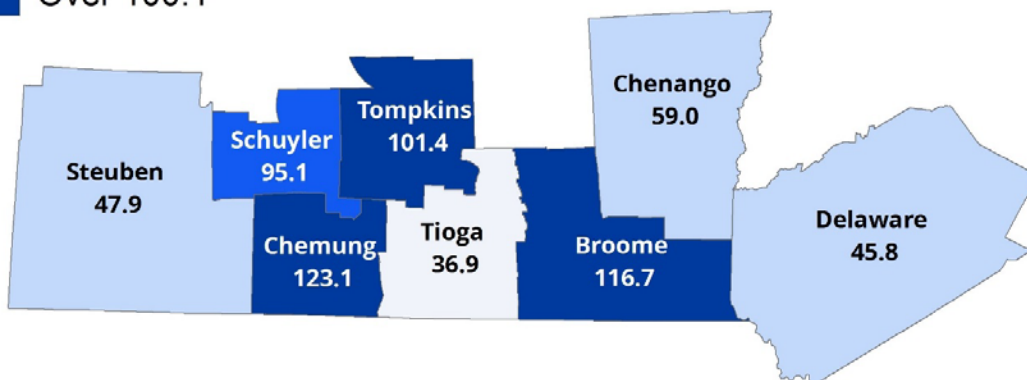
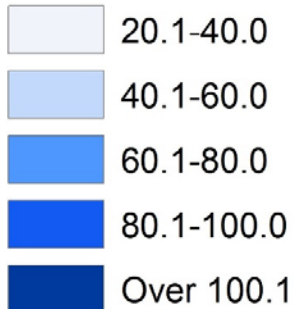
Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	227	34.7
Internal Medicine (General)	230	35.2
Subtotal	457	69.9
Obstetrics/Gynecology	52	41.4
Pediatrics (General)	71	54.2
Primary Care Total	580	N/A
Psychiatrist	92	14.1

^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

Figure 31. Number of Selected Primary Care Physicians per 100,000 Population in the Southern Tier Region, by County, 2017

Legend



Employment

Total Health Sector Employment

Between 2012 and 2016, health sector employment throughout the Southern Tier region remained stable. Employment in ambulatory care had the largest percentage increase, growing by 142 jobs, or by nearly 2%. Employment in hospitals and nursing homes and personal care facilities sectors declined during the same time period (Table 130).

Table 130. Number of Health Care Jobs in the Southern Tier Region, by Setting, 2012-2016

Setting	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Hospitals	13,659	13,694	13,396	13,408	13,505	-154	-1.1%
Ambulatory care (excluding home health)	7,586	7,591	7,572	7,697	7,728	142	1.9%
Nursing homes and personal care facilities	6,706	6,665	6,621	6,631	6,692	-14	-0.2%
Home health care	1,131	1,139	1,061	1,080	1,137	6	0.5%
Total	29,082	29,089	28,650	28,816	29,062	-20	-0.1%

Source: New York State Department of Labor, ES-202

Employment and Wage by Occupation

Employment for selected health care occupations for the Southern Tier Region is presented in Table 131. As reported in the first quarter of 2017, registered nurses (5,460) held the most jobs, followed by personal care aides (4,390) and nursing assistants (3,210). Occupational therapy assistants (70), physician therapist aides (60), and cardiovascular technologists and technicians (50) had the fewest number of jobs.

Wages in selected health care occupations for the Southern Tier region are reported in Table 132. These wages are based on NYSDOL 2013-2016 Occupational Wages survey data, which were adjusted to include the first quarter of 2017. Physician assistants earned the highest hourly wage in 2017 (\$62.99), followed by pharmacists (\$58.96) and medical and health services managers (\$51.73). Personal care aides (\$13.09) and physical therapist aides (\$13.05) were the lowest wage earners among the selected health care occupations.

Table 131. Number of Jobs in Selected Health Occupations in the Southern Tier Region, 2017

Occupation	Employment
Registered Nurses	5,460
Personal Care Aides	4,390
Nursing Assistants	3,210
Licensed Practical and Licensed Vocational Nurses	1,800
Social Workers	1600
Home Health Aides	1,210
Medical and Health Services Managers	520
Dental Hygienists	480
Pharmacy Technicians	460
Dental Assistants	450
Medical Assistants	430
Pharmacists	420
Nurse Practitioners	410
Physical Therapists	350
Radiologic Technologists and Technicians	310
Speech-Language Pathologists	260
Medical and Clinical Laboratory Technologists	260
Medical and Clinical Laboratory Technicians	260
Medical Records and Health Information Technicians	260
Occupational Therapists	240
Medical Secretaries	190
Physician Assistants	180
Mental Health Counselors	170
Respiratory Therapists	160
Surgical Technologists	160
Dietitians and Nutritionists	130
Physical Therapist Assistants	110
Occupational Therapy Assistants	70
Physical Therapist Aides	60
Cardiovascular Technologists and Technicians	50

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Table 132. Average Hourly Wage in Selected Health Occupations in the Southern Tier Region, 2017

Occupation	Average Wage per Hour	Entry Wage per Hour	Experienced Wage per Hour	Range of Experienced Versus Range
Physician Assistants	\$62.99	\$42.97	\$72.99	\$30.02
Pharmacists	\$58.96	\$45.61	\$65.63	\$20.02
Medical and Health Services Managers	\$51.73	\$31.14	\$62.02	\$30.88
Nurse Practitioners	\$46.52	\$36.21	\$51.68	\$15.47
Physical Therapists	\$37.48	\$28.90	\$41.77	\$12.87
Speech-Language Pathologists	\$33.39	\$24.99	\$37.60	\$12.61
Respiratory Therapists	\$32.97	\$25.38	\$36.75	\$11.37
Occupational Therapists	\$32.64	\$22.86	\$37.53	\$14.68
Medical and Clinical Laboratory Technologists	\$29.83	\$24.56	\$32.47	\$7.91
Cardiovascular Technologists and Technicians	\$29.49	\$19.46	\$34.50	\$15.04
Registered Nurses	\$29.36	\$22.87	\$32.61	\$9.74
Radiologic Technologists	\$29.09	\$21.43	\$32.92	\$11.50
Dietitians and Nutritionists	\$29.04	\$22.61	\$32.26	\$9.65
Dental Hygienists	\$28.46	\$24.86	\$30.25	\$5.39
Social Workers	\$24.92	\$18.09	\$28.33	\$10.25
Physical Therapist Assistants	\$23.08	\$17.93	\$25.65	\$7.72
Surgical Technologists	\$21.37	\$16.02	\$24.04	\$8.02
Medical and Clinical Laboratory Technicians	\$20.72	\$14.28	\$23.93	\$9.65
Mental Health Counselors	\$19.43	\$11.81	\$23.25	\$11.43
Licensed Practical and Licensed Vocational Nurses	\$19.23	\$15.84	\$20.92	\$5.08
Dental Assistants	\$18.39	\$13.43	\$20.88	\$7.45
Medical Records and Health Information Technicians	\$17.63	\$12.14	\$20.38	\$8.23
Orderlies	\$16.74	\$12.42	\$18.90	\$6.48
Medical Assistants	\$15.24	\$11.57	\$17.07	\$5.50
Medical Secretaries	\$15.18	\$11.16	\$17.19	\$6.02
Nursing Assistants	\$14.35	\$11.03	\$16.01	\$4.98
Pharmacy Technicians	\$14.09	\$10.64	\$15.82	\$5.17
Home Health Aides	\$13.30	\$10.79	\$14.56	\$3.77
Personal Care Aides	\$13.09	\$10.36	\$14.46	\$4.10
Physical Therapist Aides	\$13.05	\$10.36	\$14.40	\$4.04

* Information on social workers reflect combined wage data for child, family, school, healthcare, mental health, substance abuse, and all other social workers.

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Graduations by Occupation

Graduations for selected health occupations from school years 2012 through 2016 for the Southern Tier region are reported in Table 133. Between 2012 and 2016, the Southern Tier experienced the largest increase in number of graduations for RNs (173) and nurse practitioners and clinical nurse specialists (43). The largest decline in number of graduations was experienced by medical assistants with a loss of 83, followed by medical secretaries (59) and radiologic technologists (31).

Table 133. Number of Graduations in Selected Health Occupations in the Southern Tier Region, 2012-2016

Occupation	2012	2013	2014	2015	2016	Change 2012-2016	
						Number	Percent
Registered Nurses	432	476	335	511	605	173	40.0%
Nurse Practitioners/Clinical Nurse Specialists	9	38	50	62	52	43	477.8%
Occupational Therapists	27	38	42	43	43	16	59.3%
Social Workers	51	58	48	56	62	11	21.6%
Medical and Health Service Managers	26	29	23	28	28	2	7.7%
Medical Records and Health Info Techs	12	13	13	12	13	1	8.3%
Speech-Language Pathologists	10	6	6	22	9	-1	-10.0%
Dental Hygienists	36	30	35	26	34	-2	-5.6%
Physical Therapists	88	N/A	63	79	82	-6	-6.8%
Physical Therapy Assistants/Aides	26	17	21	24	15	-11	-42.3%
Medical and Clinical Laboratory Technicians	28	21	38	26	16	-12	-42.9%
Licensed Practical Nurses	141	225	158	156	121	-20	-14.2%
Radiologic Technologists	38	18	19	24	7	-31	-81.6%
Medical Secretaries	71	44	26	18	12	-59	-83.1%
Medical Assistants	174	100	109	114	91	-83	-47.7%
Medical and Clinical Laboratory Technologists	N/A	N/A	2	N/A	1	N/A	N/A

Source: Integrated Postsecondary Education Data System

Licensed Health Professionals

Between 2013 and 2017, the number of licenses for NPs increased by 95, followed by social workers (77). In contrast, the number of licensed LPNs decreased by slightly more than 100 (Table 134).

Table 134. Number of Licensed Individuals in Selected Health Occupations in the Southern Tier Region, 2013-2017

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Nurse Practitioners	624	623	672	702	719	95	15.2%
Social Workers	1,375	1,425	1,471	1,425	1,452	77	5.6%
Occupational Therapists	317	326	344	353	356	39	12.3%
Physical Therapists	491	492	535	539	526	35	7.1%
Physical Therapy Assistants	231	228	241	244	264	33	14.3%
Physician Assistants	246	258	252	250	276	30	12.2%
Pharmacists	496	477	503	517	508	12	2.4%
Speech-Language Pathologists	351	345	359	362	359	8	2.3%
Dental Assistants	86	84	89	91	93	7	8.1%
Clinical Laboratory Technicians	93	94	98	94	96	3	3.2%
Occupational Therapy Assistants	51	48	50	45	49	-2	-3.9%
Dietitian/Nutritionists	148	148	153	154	143	-5	-3.4%
Dental Hygienists	510	504	507	506	497	-13	-2.5%
Respiratory Therapists	160	163	160	146	146	-14	-8.8%
Registered Nurses	8,180	8,055	8,214	8,205	8,163	-17	-0.2%
Clinical Laboratory Technologists	348	359	353	337	331	-17	-4.9%
Licensed Practical Nurses	3,187	3,176	3,225	3,075	3,080	-107	-3.4%
TOTAL	16,894	16,805	17,226	17,045	17,058	164	1.0%

Source: New York State Education Department, Office of Professions

Demand for Health Workers

Hospitals

Regions within upstate New York were combined due to low survey response rates. Upstate hospitals reported the most difficulty recruiting clinical laboratory technologists, and RNs (2+ years of experience), followed by all NPs, physician assistants, and clinical laboratory technicians. Clinical laboratory technologists, psychiatric NPs and RNs (2+ years of experience), and RNs, (<2 years of experience) were the most difficult to retain (Table 135).

Table 135. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in the Upstate New York, 2017

Occupation	Recruitment			Retention		
	Reasons for Difficulty			Reasons for Difficulty		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of exp.)	4.1	90%	33%	3.6	43%	33%
RNs (<2 years of exp.)	3.2	52%	29%	3.5	42%	32%
Nurse Managers	3.5	60%	25%	2.7	32%	21%
Nurse Practitioners (excluding psychiatric)	3.9	67%	22%	3.2	33%	17%
Physician Assistants	3.8	68%	16%	3.1	33%	11%
Pharmacists	2.8	25%	6%	2.1	14%	0%
Psychiatric NPs	3.9	78%	44%	3.6	45%	18%
Psychologists	2.7	43%	14%	2.3	29%	0%
LCSWs	3.0	33%	13%	2.5	20%	13%
LMSWs	2.8	39%	11%	2.6	25%	13%
Physical Therapists	3.5	43%	38%	2.7	25%	35%
Occupational Therapists	3.3	41%	29%	2.5	12%	12%
Speech-Language Path.	3.5	63%	25%	2.8	31%	31%
Clinical Lab Technicians	3.8	71%	29%	3.2	35%	29%
Clinical Lab Technologists	4.4	80%	40%	3.9	53%	37%
Medical Coders	3.1	32%	21%	2.8	30%	20%
Surgical Technicians	3.6	68%	16%	2.7	25%	15%
Care Coordinators	2.1	21%	0%	1.8	13%	0%
Case Managers	2.4	33%	6%	2.1	18%	6%
Care Managers	2.7	33%	7%	2.1	20%	0%
Patient Navigators	1.9	7%	7%	1.8	8%	8%
Community Health Workers	2.6	11%	33%	1.7	9%	18%

- Sixty-four (64%) of responding hospitals indicated they had difficulty hiring part-time workers, including RNs, physical therapists, occupational therapists, and nurse practitioners.
- Fifty-two percent (52%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including RNs, LPNs, clinical laboratory technologists, CNAs, and patient care techs.
- Sixty-five percent (65%) of respondents reported that they were anticipating expanding in clinical titles, while only 25% indicated they were expanding in non-clinical titles.

Nursing Homes

Nursing homes in the Southern Tier region indicated that in 2017 experienced RNs were the most difficult to recruit, followed by physical therapists, speech-language pathologists, nurse directors and managers, LPNs, and newly licensed RNs. LPNs were the most difficult to retain, followed by newly licensed and experienced RNs, nurse directors and managers, CNAs, and speech-language pathologists (Table 136).

Table 136. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in the Southern Tier Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	3.8	3.8	91.7%	25.0%
Dietitians/Nutritionists	3.6	3.2	50.0%	10.0%
Licensed Practical Nurses	4.1	4.2	91.7%	25.0%
Occupational Therapists	4.0	3.3	71.4%	0.0%
Occupational Therapy Assistants	4.0	3.2	100.0%	16.7%
Physical Therapists	4.4	3.5	100.0%	28.6%
Physical Therapist Assistants	4.0	3.5	85.7%	0.0%
Registered Nurses (RNs)				
Newly Licensed RNs	4.1	4.1	91.7%	50.0%
Experienced RNs	4.7	4.1	91.7%	66.7%
MDS Coordinators	3.4	3.4	80.0%	50.0%
Nurse Directors/Managers	4.2	4.0	81.8%	45.5%
Social Workers (SWs)				
Licensed Clinical Social Workers	3.1	2.9	44.4%	11.1%
Licensed Master Social Workers	3.4	3.4	44.4%	0.0%
Speech-Language Pathologists	4.4	3.8	75.0%	12.5%

- Eighty-three percent (83%) of nursing homes reported difficulty hiring part-time workers.
- Ninety-two percent (92%) of nursing homes indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Forty-two (42%) of nursing homes reported expanding clinical services next year, and twenty-five percent (25%) reported expanding non-clinical services next year.

Home Health Care Agencies

Home health care agencies in the Southern Tier region indicated that homemakers, RNs, and physical therapists, were the most difficult to recruit, followed by occupational therapists and home health aides (Table 137). Personal care aides, home health aides, and homemakers were the most difficult to retain, followed by RNs and LPNs.

Table 137. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in the Southern Tier Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Home Health Aides	3.8	3.6	65%	70%
Homemakers	4.5	3.5	75%	100%
Personal Care Aides	3.7	4.1	64%	100%
Licensed Practical Nurses	3.6	3.4	29%	50%
Occupational Therapists	3.8	2.4	83%	17%
Physical Therapists	4.2	2.4	100%	17%
Registered Nurses	4.2	3.4	50%	43%
Respiratory Therapists	2.0	1.0	0%	0%
Licensed Clinical Social Workers	3.5	3.3	50%	50%
Licensed Master's Social Workers	3.4	3.0	14%	14%

- Thirty percent (30%) home health care agency respondents anticipated expanding their professional workforce (LPNs, RNs, social workers, others) within the next year.
- Sixty-one percent (61%) of respondents indicated they would be expanding their paraprofessional workforce (eg. home health aides, personal care aides, others) within the next year.

FQHCs

FQHCs in the Southern Tier region had the most difficulty recruiting Ob/Gyns, pediatricians, and psychiatric NPs, and psychiatrists. FQHCs in this region had the most difficulty retaining psychiatric NPs, followed by obstetricians/gynecologists and substance abuse counselors (Table 138).

Table 138. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in the Southern Tier Region, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	4.2	2.7
	Internal Medicine	4.5	3.0
	Ob/Gyn	5.0	4.0
	Pediatricians	5.0	2.0
	Physician Assistants (PAs)	2.2	2.4
Nurse Practitioners	Overall - All Specialties	2.5	2.8
	Pediatric	3.0	2.0
	Adult	2.0	3.0
	Family	2.5	3.0
	Psychiatric	5.0	5.0
Nurses	Registered Nurses	3.6	2.6
	Licensed Practical Nurses	2.8	3.0
Behavioral Health	Psychiatrists	5.0	2.0
	Psychologists	0.0	0.0
	Substance Abuse Counselors	4.5	4.0
	Social Workers	4.0	2.7
Oral Health	Dentists	3.8	3.0
	Dental Hygienists	2.8	2.3
Coordination/Patient Care	Care Coordinators	3.7	2.0
	Case Managers	3.0	2.0
	HIV Counselors	4.0	3.0
Patient/Community Education	Community Health Workers	2.5	2.0
	Patient Health Educators	2.5	2.0
	Nutritionists/Nutrition Educators	3.5	2.5
Enabling Services	Patient Health Navigators	4.0	3.0
	Outreach Workers	4.0	3.5
	Transportation Workers	3.5	3.0
	Interpreters	4.5	2.0
Administrative Support	IT Systems Admin/Maintenance	3.3	2.5
Others	Physical Therapists	0.0	0.0
	Occupational Therapists	0.0	0.0

- Sixty-seven percent (67%) of FQHCs in this region have difficulty hiring bilingual staff; Spanish is the language most needed.
- Eighty-three percent (83%) of FQHCs in this region anticipated expanding one or more service.

Employment Projections by Health Occupation

According to the NYSDOL, the largest number of average annual job openings projected in the Southern Tier region between 2014 and 2024 will be for RNs (200), nursing assistants (130), personal care aides (120), and home health aides (120) (Table 139).

Table 139. Employment Projections for Selected Health Occupations in the Southern Tier Region, 2014-2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Openings ^a
			Number	Percent	
Home Health Aides	2,140	2,790	650	30.4%	120
Personal Care Aides	4,050	4,920	870	21.5%	120
Registered Nurses	5,570	6,250	680	12.2%	200
Nursing Assistants	3,450	3,970	520	15.1%	130
Social Workers	1,910	2,110	200	10.5%	70
Licensed Practical and Licensed Vocational Nurses	1,900	2,130	230	12.1%	70
Medical Assistants	640	740	100	15.6%	20
Physical Therapists	450	540	90	20.0%	20
Emergency Medical Technicians and Paramedics	800	1,020	220	27.5%	30
Medical and Health Services Managers	720	780	60	8.3%	30
Dental Assistants	440	490	50	11.4%	20
Nurse Practitioners	380	490	110	29.0%	20
Physician Assistants	240	290	50	20.8%	20
Clinical, Counseling, and School Psychologists	510	580	70	13.7%	20
Speech-Language Pathologists	270	290	20	7.4%	10
Dental Hygienists	360	410	50	13.9%	10
Occupational Therapists	240	270	30	12.5%	10
Pharmacy Technicians	570	590	20	3.5%	10
Medical Records and Health Information Technicians	280	310	30	10.7%	10
Medical and Clinical Laboratory Technicians	340	380	40	11.8%	20
Diagnostic Medical Sonographers	190	240	50	26.3%	0
Radiologic Technologists	350	360	10	2.9%	10
Pharmacists	530	550	20	3.8%	10
Dietitians and Nutritionists	150	170	20	13.3%	0
Medical and Clinical Laboratory Technologists	320	330	10	3.1%	10
Respiratory Therapists	200	210	10	5.0%	10
Surgical Technologists	170	190	20	11.8%	0
Cardiovascular Technologists and Technicians	80	90	10	12.5%	0
Psychiatric Aides	420	420	0	0.00%	10
Orderlies	130	150	20	15.4%	0

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the profession.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024

J. Western New York

The Western New York region includes the counties of Allegany, Cattaraugus, Chautauqua, Erie, and Niagara.

Population

The population of the Western New York region was less racially and ethnically diverse but had similar poverty levels compared with New York as a whole, while being slightly older. Additionally, when compared with the state, the region had a smaller percentage of people with a bachelor's degree or higher but a larger portion of the population with a high school education or equivalent or associate degree (Table 140).

Table 140. Selected Population Characteristics in the Western New York Region, 2011-2015 (5-Year Average)

Population Characteristics ^a	Region		Statewide Percent
	Number	Percent	
Total population	1,395,412	N/A	N/A
Population under 100% FPL	208,664	15.0%	15.3%
Population under 200% FPL	444,339	31.8%	31.6%
Population aged birth to 17 years	292,710	21.0%	21.6%
Population aged 65 and older	230,187	16.5%	14.3%
Population female aged 15 to 44	262,807	18.8%	20.6%
Women aged 15 to 19 who had a birth in past 12 mos.	680	0.1%	<0.1%
Women aged 20 to 34 who had a birth in past 12 mos.	12,204	0.9%	0.8%
Women aged 35 to 50 who had a birth in past 12 mos.	3,085	0.2%	0.3%
Black/African American, non-Hispanic	140,127	10.0%	14.4%
Hispanic/Latino	62,481	4.5%	18.4%
Asian/Pacific Islander, non-Hispanic	33,743	2.4%	7.9%
American Indian/Native Alaskan, non-Hispanic	8,855	0.6%	0.2%
Two or more/other races	22,782	1.6%	1.7%
Less than high school education	95,637	10.0%	14.4%
High school or equivalent	479,960	50.1%	42.9%
Associate degree	113,548	11.8%	8.5%
Bachelor's degree	149,114	15.6%	19.4%
Master's degree or higher	120,593	12.6%	14.8%
Home Ownership	785,778	72.7%	56.2%

^a Education levels and rates are based on individuals aged 25 years and older.

Source: US Census, American Community Survey, 2011-2015 (5-Year Average); Behavioral Risk Factor Surveillance System, 2016

Health Status

The Western New York region had substantially higher rates of total deaths, deaths due to heart disease, deaths due to all cancers, and deaths due to diabetes per 100,000 total population than the state as a whole. Although the overall birth rate was lower in the Western New York region than statewide, the teen birth rate was higher. The rate of infant deaths was also higher in the Western New York region compared to New York State as a whole. The Western New York region also had lower rates of preventable hospitalizations, asthma-related (adult and pediatric), diabetes-related, and chronic lower respiratory disease-related hospitalizations per 10,000 population than the state as a whole. (Table 141).

Table 141. Selected Health Indicators in the Western New York Region

Health Indicator	Region		Statewide	
	Number	Rate	Number	Rate
Total deaths, per 100,000	43,425	1,037.8	442,323	750.1
Deaths due to heart disease, per 100,000	11,491	274.6	128,806	218.4
Deaths due to all cancers, per 100,000	9,825	234.3	105,645	180.7
Deaths due to diabetes, per 100,000	1,285	30.7	12,003	20.4
Total births, per 1,000 females aged 15 to 44	44,850	56.9	712,498	58.8
Teen births, per 1,000 females aged 15 to 19	3,121	22.4	33,588	17.8
Low-birthweight births, as a percent of total births	3,708	8.3	56,238	7.9
Late/no prenatal care, as a percent of total births	2,348	5.5	39,555	5.6
Infant deaths, per 1,000 live births	336	7.5	3,403	4.8
Total hospitalizations, per 10,000	478,755	1,144.1	7,007,446	1,188.4
Preventable hospitalizations, per 10,000	12,992	117.6	198,511	127.9
Adult asthma hospitalizations, per 10,000	3,893	9.3	103,586	17.6
Rate of asthma hospitalizations, ages 25-44 per 10,000	483	4.9	12,875	8.1
Rate of asthma hospitalizations, ages 45-64 per 10,000	1,114	9.4	29,731	18.8
Pediatric asthma hospitalizations, per 10,000	1,350	15.4	34,386	27.0
Diabetes hospitalizations, per 10,000	93,582	223.6	1,401,239	237.6
CLRD hospitalizations, per 10,000	12,837	30.7	204,932	34.8
Heart disease hospitalizations, per 10,000	47,109	112.6	609,961	103.4
Total ED visits, per 10,000	1,737,049	4,151.1	24,036,192	4,076.2
One or more personal doctor(s), as percent	963,966	89.2	13,578,631	86.7
Had a checkup within the past two years, as percent	955,746	88.4	12,978,396	82.8

Source: New York State Community Health Indicator Reports, 2012-2014 (3- Year Average); Behavioral Risk Factor Surveillance System, 2016

Primary Care Physicians

There were nearly 1,350 primary care physicians practicing in the Western New York region. Thirty-nine percent (39%) were in general internal medicine and another 32% were in family or general practice. There were 165 psychiatrists, including child and adolescent psychiatrists, practicing in the Western New York region, or 11.8 per 100,000 total population. Erie County had the highest rate of primary care providers in the region, with 113.3 per 100,000 total population. Niagara County had the lowest rate of providers, with 57.4 per 100,000 total population (Table 142 and Figure 32).

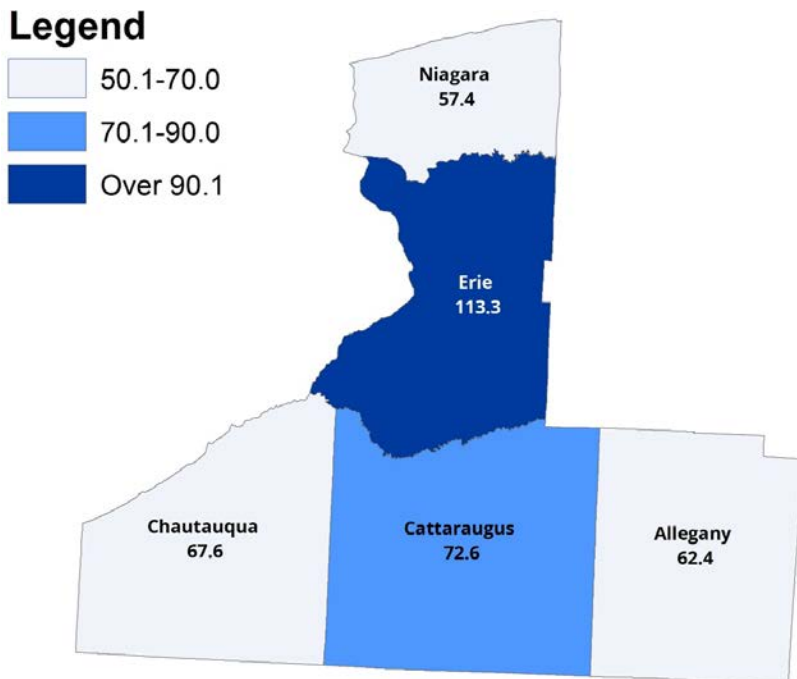
Table 142. Primary Care Physicians and Psychiatrists in the Western New York Region, by Specialty, 2017

Specialty	Physicians	Per 100,000 Population ^a
Family/General Practice	424	30.4
Internal Medicine (General)	519	37.2
Subtotal	943	67.6
Obstetrics/Gynecology	155	59.0
Pediatrics (General)	247	84.4
Primary Care Total	1,345	N/A
Psychiatrist	165	11.8

^a All rates are per 100,000 total population except the Ob/Gyn rate, which is per 100,000 women aged 15 to 44 and the pediatrician rate, which is per 100,000 children aged birth to 17 years.

Source: Center for Health Workforce Studies

Figure 32. Number of Selected Primary Care Physicians per 100,000 Population in the Western New York Region, by County, 2017



Employment

Total Health Sector Employment

Between 2012 and 2016, health sector employment throughout the Western New York region increased by over 2,000 jobs, or by nearly 3%. Nearly 425 jobs (2%) were lost in hospitals between 2012 and 2016. Jobs in home health care increased by 83 jobs, or by 2%, and jobs in ambulatory care increased by over 2,000 jobs, or by nearly 11%, during the same time period. Nursing home and personal care facilities experienced a loss of 112 jobs, or by less than 1% between 2012 and 2016 (Table 143).

Table 143. Number of Health Care Jobs in the Western New York Region, by Setting, 2012-2016

Setting	2012	2013	2014	2015	2016	Change Between 2012 and 2016	
						Number	Percent
Hospitals	26,800	26,717	26,153	26,322	26,376	-424	-1.6%
Ambulatory care (excluding home health)	22,958	23,478	24,140	24,448	25,421	2,463	10.7%
Nursing home and personal care facilities	15,618	15,436	15,594	15,543	15,506	-112	-0.7%
Home health care	5,272	5,333	5,152	5,133	5,355	83	1.6%
Total	70,648	70,964	71,039	71,446	72,658	2,010	2.8%

Source: New York State Department of Labor, ES-202

Employment and Wage by Occupation

Employment for selected health care occupations for the Western New York Region is presented in Table 144. As reported in the first quarter of 2017, registered nurses (13,480) held the most jobs in in the region, followed by personal care aides (9,430) and nursing assistants (6,640). Dietetic technicians (70), nurse midwives (50) and occupational therapy aides (50) had the fewest jobs.

Wages in selected health care occupations for Western New York are reported in Table 145. These wages are based on NYSDOL 2013-2016 Occupational Wages survey data, which were adjusted to include the first quarter of 2017. Pharmacists earned the highest hourly wage in 2017 (\$59.57), followed by medical and health services managers (\$53.90) and physician assistants (\$50.13). Home health aides (\$13.01), personal care aides (\$12.77), and orderlies (\$11.95) were the lowest wage earners in the selected health care occupations in region.

Table 144. Number of Jobs in Selected Health Occupations in the Western New York Region, 2017

Occupation	Employment
Registered Nurses	13,480
Personal Care Aides	9,430
Nursing Assistants	6,640
Licensed Practical and Licensed Vocational Nurses	5,140
Home Health Aides	5,070
Social Workers	3,520
Medical Assistants	1,910
Pharmacy Technicians	1,800
Pharmacists	1,700
Medical Secretaries	1,370
Speech-Language Pathologists	1,270
Dental Hygienists	1,230
Medical and Health Services Managers	1,210
Physical Therapists	1,180
Dental Assistants	1,120
Radiologic Technologists and Technicians	1,070
Medical Records and Health Information Technicians	870
Nurse Practitioners	820
Mental Health Counselors	730
Occupational Therapists	720
Physician Assistants	690
Respiratory Therapists	540
Surgical Technologists	460
Medical and Clinical Laboratory Technologists	420
Medical and Clinical Laboratory Technicians	400
Physical Therapist Assistants	380
Dietitians and Nutritionists	320
Occupational Therapy Assistants	270
Cardiovascular Technologists and Technicians	230
Orderlies	200
Radiation Therapists	190
Physical Therapist Aides	180
Pharmacy Aides	140
Nuclear Medicine Technologists	110
Dietetic Technicians	70
Nurse Midwives	50
Occupational Therapy Aides	50

Source: New York State Department of Labor, Bureau of Labor Statistics, Occupational Wages

Table 145. Average Hourly Wage in Selected Health Occupations in the Western New York Region, 2017

Occupation	Average Hourly Wage	Entry Wage	Experienced Wage	Range Experienced vs. Entry Wages
Pharmacists	\$59.57	\$45.59	\$66.56	\$20.97
Medical and Health Services Managers	\$53.90	\$35.13	\$63.29	\$28.17
Physician Assistants	\$50.13	\$40.44	\$54.97	\$14.53
Nurse Practitioners	\$49.75	\$37.87	\$55.68	\$17.82
Nurse Midwives	\$48.62	\$42.71	\$51.57	\$8.86
Speech-Language Pathologists	\$36.98	\$22.40	\$44.27	\$21.88
Physical Therapists	\$36.19	\$26.06	\$41.26	\$15.20
Nuclear Medicine Technologists	\$34.72	\$29.04	\$37.56	\$8.52
Registered Nurses	\$34.06	\$25.19	\$38.50	\$13.31
Occupational Therapists	\$32.87	\$22.87	\$37.88	\$15.01
Radiation Therapists	\$31.47	\$24.98	\$34.71	\$9.73
Respiratory Therapists	\$29.19	\$23.10	\$32.24	\$9.14
Medical and Clinical Laboratory Technologists	\$29.12	\$23.54	\$31.91	\$8.37
Dietitians and Nutritionists	\$28.77	\$21.69	\$32.31	\$10.62
Dental Hygienists	\$27.26	\$23.46	\$29.17	\$5.71
Radiologic Technologists and Technicians	\$27.08	\$20.25	\$30.49	\$10.24
Cardiovascular Technologists and Technicians	\$25.61	\$16.98	\$29.92	\$12.94
Surgical Technologists	\$24.44	\$19.36	\$26.98	\$7.63
Social Workers	\$23.95	\$17.42	\$27.22	\$9.80
Physical Therapist Assistants	\$22.48	\$18.20	\$24.62	\$6.41
Occupational Therapy Assistants	\$21.75	\$17.39	\$23.93	\$6.54
Medical and Clinical Laboratory Technicians	\$21.35	\$14.91	\$24.56	\$9.65
Medical Records and Health Information Techs	\$21.07	\$14.88	\$24.16	\$9.29
Licensed Practical Nurses	\$19.69	\$16.13	\$21.47	\$5.35
Dental Assistants	\$18.36	\$15.00	\$20.03	\$5.03
Dietetic Technicians	\$17.99	\$12.00	\$20.99	\$8.99
Occupational Therapy Aides	\$17.70	\$11.08	\$21.00	\$9.92
Mental Health Counselors	\$17.47	\$13.23	\$19.59	\$6.37
Medical Assistants	\$16.85	\$13.24	\$18.66	\$5.42
Medical Secretaries	\$16.44	\$12.52	\$18.39	\$5.88
Physical Therapist Aides	\$15.09	\$12.25	\$16.50	\$4.25
Pharmacy Technicians	\$14.28	\$10.67	\$16.10	\$5.43
Nursing Assistants	\$14.27	\$11.31	\$15.75	\$4.44
Pharmacy Aides	\$13.78	\$9.70	\$15.92	\$6.22
Home Health Aides	\$13.01	\$10.66	\$14.19	\$3.53
Personal Care Aides	\$12.77	\$10.27	\$14.02	\$3.75
Orderlies	\$11.95	\$9.70	\$13.15	\$3.45
* Information on social workers reflect combined wage data for child, family, school, healthcare, mental health, substance abuse, and all other social workers.				

Source: New York State Department of Labor, Labor Statistics, Occupational Wages

Graduations by Occupation

Graduations for selected health occupations from school years 2012 through 2016 for Western New York region are presented in Table 146. Between 2012 and 2016, the Western New York region experienced the largest increase in number of graduations for RNs (303), followed by medical secretaries (89) and pharmacists (83). The number of graduations for surgical technologists and medical and clinical laboratory technologists declined by 22 and 12 respectively.

Table 146. Number of Graduations in Selected Health Occupations in the Western NY Region, 2012-2016

Occupation	2012	2013	2014	2015	2016	Change 2012-2016	
						Number	Percent
Registered Nurses	882	1041	1057	1117	1185	303	34.4%
Medical Secretaries	116	171	204	232	205	89	76.7%
Pharmacists	109	116	111	165	192	83	76.1%
Medical Records and Health Info Techs	77	86	77	77	115	38	49.4%
Licensed Practical Nurses	369	442	499	529	406	37	10.0%
Physical Therapy	117	135	132	153	151	34	29.1%
Speech-Language Pathology	29	28	29	29	56	27	93.1%
Occupational Therapists	92	80	87	79	118	26	28.3%
Nurse Practitioners/Clinical Nurse Specialists	56	65	75	104	74	18	32.1%
Dietitians and Nutritionists	18	36	40	36	33	15	83.3%
Occupational Therapy Assistants/Aides	28	50	28	33	40	12	42.9%
Medical Assistants	125	136	133	114	134	9	7.2%
Radiologic Technologist	27	38	34	33	35	8	29.6%
Physical Therapy Assistants/Aides	32	33	35	41	38	6	18.8%
Dental Hygienist	49	48	45	47	53	4	8.2%
Social Workers	190	240	170	198	194	4	2.1%
Dental Assistant	22	21	21	21	23	1	4.5%
Respiratory Therapists	23	20	22	26	23	0	0.0%
Medical and Clinical Laboratory Technicians	12	19	24	19	9	-3	-25.0%
Nuclear Medicine Technologists	13	11	11	8	9	-4	-30.8%
Physician Assistant	95	119	120	130	87	-8	-8.4%
Medical and Clinical Laboratory Technologist	37	23	37	31	25	-12	-32.4%
Surgical Technologist	67	53	44	44	45	-22	-32.8%
Certified Registered Nurse Anesthetists	13	16	17	16	N/A	N/A	N/A
Dietetic Technician	N/A	7	2	10	8	N/A	N/A

Source: Integrated Postsecondary Education Data System

Licensed Health Professionals

Between 2013 and 2017 in the Western New York region, the number of licensed RNs increased by more than 500, or by nearly 3%, and the number of PAs grew by almost 200, or by more than 24%. In contrast, the number of licensed occupational therapy assistants and clinical laboratory technologists declined by 52 and 45, respectively (Table 147).

Table 147. Number of Licensed Individuals in Selected Health Occupations in the Western New York Region, 2013-2017

Profession	2013	2014	2015	2016	2017	Change Between 2013 and 2017	
						Number	Percent
Physical Therapy Assistants	394	412	436	453	493	99	25.1%
Physician Assistants	801	826	907	944	995	194	24.2%
Nurse Practitioners	1,349	1,387	1,448	1,493	1,541	192	14.2%
Occupational Therapists	845	869	903	923	963	118	14.0%
Physical Therapists	1,382	1,376	1,421	1,479	1,513	131	9.5%
Social Workers	2,221	2,274	2,392	2,382	2,394	173	7.8%
Dietitian/Nutritionists	354	350	366	376	381	27	7.6%
Respiratory Therapists	497	509	526	514	529	32	6.4%
Speech-Language Pathologists	1,205	1,207	1,230	1,220	1,252	47	3.9%
Pharmacists	1,736	1,717	1,760	1,803	1,796	60	3.5%
Clinical Laboratory Technicians	188	201	200	188	194	6	3.2%
Dental Assistants	240	234	247	251	247	7	2.9%
Registered Nurses	19,972	19,800	20,302	20,478	20,547	575	2.9%
Dental Hygienists	1,155	1,144	1,168	1,177	1,180	25	2.2%
Licensed Practical Nurses	7,185	7,300	7,383	7,059	7,194	9	0.1%
Clinical Laboratory Technologists	974	979	985	929	929	-45	-4.6%
Occupational Therapy Assistants	592	574	571	542	540	-52	-8.8%
TOTAL	41,090	41,159	42,245	42,111	42,688	1,598	3.9%

Source: New York State Education Department, Office of Professions

Demand for Health Workers

Hospitals

Regions within upstate New York were combined due to low survey response rates. Upstate hospitals reported the most difficulty recruiting clinical laboratory technologists, and RNs (2+ years of experience), followed by all NPs, physician assistants, and clinical laboratory technicians. Clinical laboratory technologists, psychiatric NPs and RNs (2+ years of experience), and RNs, (<2 years of experience) were the most difficult to retain (Table 148).

Table 148. Recruitment and Retention Difficulties for Hospitals in Selected Health Occupations in Upstate New York, 2017

Occupation	Recruitment			Retention		
	Reasons for Difficulty			Reasons for Difficulty		
	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries	Average Assessment of Difficulty	Shortage of Workers	Non-Competitive Salaries
RNs (2 + years of exp.)	4.1	90%	33%	3.6	43%	33%
RNs (<2 years of exp.)	3.2	52%	29%	3.5	42%	32%
Nurse Managers	3.5	60%	25%	2.7	32%	21%
Nurse Practitioners (excluding psychiatric)	3.9	67%	22%	3.2	33%	17%
Physician Assistants	3.8	68%	16%	3.1	33%	11%
Pharmacists	2.8	25%	6%	2.1	14%	0%
Psychiatric NPs	3.9	78%	44%	3.6	45%	18%
Psychologists	2.7	43%	14%	2.3	29%	0%
LCSWs	3.0	33%	13%	2.5	20%	13%
LMSWs	2.8	39%	11%	2.6	25%	13%
Physical Therapists	3.5	43%	38%	2.7	25%	35%
Occupational Therapists	3.3	41%	29%	2.5	12%	12%
Speech-Language Path.	3.5	63%	25%	2.8	31%	31%
Clinical Lab Technicians	3.8	71%	29%	3.2	35%	29%
Clinical Lab Technologists	4.4	80%	40%	3.9	53%	37%
Medical Coders	3.1	32%	21%	2.8	30%	20%
Surgical Technicians	3.6	68%	16%	2.7	25%	15%
Care Coordinators	2.1	21%	0%	1.8	13%	0%
Case Managers	2.4	33%	6%	2.1	18%	6%
Care Managers	2.7	33%	7%	2.1	20%	0%
Patient Navigators	1.9	7%	7%	1.8	8%	8%
Community Health Workers	2.6	11%	33%	1.7	9%	18%

- Sixty-four percent (64%) of responding hospitals indicated they had difficulty hiring part-time workers, including RNs, physical therapists, occupational therapists, and nurse practitioners.
- Fifty-two percent (52%) of responding hospitals indicated they had difficulties hiring off-shift workers (evenings, nights, and weekends), including RNs, LPNs, clinical laboratory technologists, CNAs, and patient care techs.
- Sixty-five percent (65%) of respondents reported that they were anticipating expanding in clinical titles, while only 25% indicated they were expanding in non-clinical titles.

Nursing Homes

Nursing homes in the Western New York region reported in 2017 the most difficulty recruiting newly licensed and experienced RNs, followed by MDS coordinators, Nurse directors and managers, CNAs and LPNs. CNAs were the most difficult to retain, followed by newly licensed, LPNs, and experienced RNs (Table 149).

Table 149. Recruitment and Retention Difficulties for Nursing Homes in Selected Health Occupations in the Western New York Region, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Salary Levels
Certified Nurse Aides (CNAs)	3.8	4.3	83.3%	25.0%
Dietitians/Nutritionists	2.7	2.1	33.3%	22.2%
Licensed Practical Nurses	3.8	3.7	58.3%	25.0%
Occupational Therapists	2.6	2.2	28.6%	14.3%
Occupational Therapy Assistants	2.9	2.2	42.9%	14.3%
Physical Therapists	2.6	2.6	25.0%	12.5%
Physical Therapist Assistants	2.6	2.2	28.6%	14.3%
Registered Nurses (RNs)				
Newly Licensed RNs	4.2	4.2	66.7%	41.7%
Experienced RNs	4.2	3.6	75.0%	33.3%
MDS Coordinators	4.1	3.4	70.0%	30.0%
Nurse Directors/Managers	4.1	3.2	66.7%	25.0%
Social Workers (SWs)				
Licensed Clinical Social Workers	2.8	2.3	50.0%	0.0%
Licensed Master Social Workers	3.1	2.3	42.9%	0.0%
Speech-Language Pathologists	2.7	2.7	42.9%	0.0%

- Fifty-eight percent (58%) of nursing homes reported difficulty hiring part-time workers.
- Eighty-two percent (82%) of nursing homes indicated difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Thirty-three percent (33%) of nursing homes reported expanding clinical services next year and twenty-seven percent (27%) reported expanding non-clinical services next year.

Home Health Care Agencies

Home health care agencies in the Western New York region indicated that occupational therapists, LMSWs, LCSWs, were the most difficult to recruit, followed by home health aides, physical therapists, RNs, and personal care aides. Personal care aides, home health aides, and LCSWs were the most difficult to retain (Table 150).

Table 150. Recruitment and Retention Difficulties for Home Health Care Agencies in Selected Health Occupations in the Western New York Regions, 2017

Occupation	Average Assessment of Difficulty		Percentage of Respondents Indicating Reasons for Difficulties	
	Recruitment	Retention	Shortage of Workers	Non-Competitive Salaries/Benefits
Home Health Aides	4.1	4.1	83%	40%
Homemakers	3.8	3.7	44%	22%
Personal Care Aides	4.0	4.3	84%	88%
Licensed Practical Nurses	3.8	3.9	64%	41%
Occupational Therapists	5.0	2.8	50%	50%
Physical Therapists	4.0	3.2	60%	60%
Registered Nurses	4.0	3.7	60%	48%
Respiratory Therapists	3.7	3.3	33%	67%
Licensed Clinical Social Workers	4.2	4.0	60%	80%
Licensed Master's Social Workers	4.3	3.6	100%	75%

- Sixty-seven percent (67%) of home health care agencies reported difficulty hiring full-time workers.
- Eighty-seven percent (87%) of home health care agencies reported difficulty hiring part-time workers.
- Ninety percent (90%) of home health care agencies reported difficulty hiring workers for off shifts (evenings, nights, and weekends).
- Sixty-five percent (65%) of home health care agencies indicated difficulty hiring bilingual workers.
- Forty-one percent (41%) of professional respondents (licensed PNs, RNs, social workers, others) indicated that they would be expanding services within the next year.
- Seventy percent (70%) of paraprofessional respondents (eg. home health aides, personal care aides, others) indicated that they would be expanding services within the next year.
- Nineteen percent (19%) of non-clinical respondents (eg. managers, medical billers, schedulers, information technology workers, others) indicated that they would be expanding services within the next year.

FQHCs

FQHCs in the Western New York region had the most difficulty recruiting psychiatrists, followed by psychiatric NPs and internal medicine physicians. FQHCs in this region had the most difficulty retaining psychiatrists, followed by dentists. (Table 151).

Table 151. Recruitment and Retention Difficulties for FQHCs in Selected Health Occupations in the Western New York Region, 2016

Occupation		Average Assessment of Difficulty	
		Recruitment	Retention
Physicians	Family/General Practice	4.4	3.3
	Internal Medicine	4.7	3.5
	Ob/Gyn	4.0	2.0
	Pediatricians	4.3	1.5
	Physician Assistants (PAs)	2.5	2.4
Nurse Practitioners	Overall – All Specialties	3.2	3.0
	Pediatric	2.0	1.5
	Adult	1.5	1.5
	Family	3.3	2.8
	Psychiatric	4.8	3.2
Nurses	Registered Nurses	2.9	2.5
	Licensed Practical Nurses	2.3	2.3
Behavioral Health	Psychiatrists	5.0	5.0
	Psychologists	0.0	0.0
	Substance Abuse Counselors	4.5	3.5
	Social Workers	4.2	3.0
Oral Health	Dentists	4.0	4.7
	Dental Hygienists	3.0	3.3
Coordination/Patient Care	Care Coordinators	2.4	2.3
	Case Managers	2.0	2.0
	HIV Counselors	4.0	3.0
Patient/Community Education	Community Health Workers	1.8	2.0
	Patient Health Educators	2.0	2.0
	Nutritionists/Nutrition Educators	2.5	3.0
Enabling Services	Patient Health Navigators	2.0	2.0
	Outreach Workers	2.0	1.7
	Transportation Workers	2.5	1.5
	Interpreters	2.8	1.3
Administrative Support	IT Systems Admin/Maintenance	2.0	2.0
Others	Physical Therapists	0.0	0.0
	Occupational Therapists	0.0	0.0

- Of those FQHCs who responded for this region, all indicated plans of expanding one or more service.
- Fifty percent (50%) identified difficulty hiring bilingual staff.

Employment Projections by Health Occupation

According to the NYSDOL, the largest number of average annual job openings projected in the Western New York region between 2014 and 2024 will be for RNs (460), personal care aides (370), and home health aides (330) (Table 152).

Table 152. Employment Projections for Selected Health Occupations in the Western New York Region, 2014-2024

Occupation	2014	2024	Change Between 2014 and 2024		Average Annual Openings ^a
			Number	Percent	
Home Health Aides	5,580	7,560	1,980	35.5%	330
Personal Care Aides	10,810	13,570	2,760	25.5%	370
Registered Nurses	13,650	15,040	1,390	10.2%	460
Nursing Assistants	7,360	8,120	760	10.3%	250
Social Workers	3,810	4,300	490	12.9%	140
Licensed Practical and Licensed Vocational Nurses	5,280	6,100	820	15.5%	230
Medical Assistants	1,440	1,670	230	16%	50
Physical Therapists	1,110	1,330	220	19.8%	50
Emergency Medical Technicians and Paramedics	860	1,150	290	33.7%	40
Medical and Health Services Managers	1,550	1,720	170	11%	60
Dental Assistants	1,240	1,450	210	17%	50
Nurse Practitioners	870	1,080	210	24.1%	40
Physician Assistants	610	770	160	26.2%	30
Clinical, Counseling, and School Psychologists	910	1,030	120	13.2%	30
Speech-Language Pathologists	1,120	1,260	140	12.5%	40
Dental Hygienists	1,110	1,300	190	17.1%	40
Occupational Therapists	640	750	110	17.2%	20
Pharmacy Technicians	1,690	1,860	170	10.1%	40
Medical Records and Health Information Technicians	780	880	100	12.8%	30
Medical and Clinical Laboratory Technicians	370	390	20	5.4%	10
Diagnostic Medical Sonographers	330	400	70	21.2%	20
Radiologic Technologists	1,140	1,170	30	2.6%	20
Pharmacists	1,540	1,570	30	2.0%	40
Dietitians and Nutritionists	350	390	40	11.4%	0
Medical and Clinical Laboratory Technologists	470	480	10	2.1%	10
Respiratory Therapists	550	570	20	3.6%	10
Surgical Technologists	360	380	20	5.6%	0
Cardiovascular Technologists and Technicians	160	180	20	12.5%	0
Psychiatric Aides	250	250	0	0.00%	10
Orderlies	280	320	40	14.3%	10

^a Annual openings reflect creation of new positions in the occupation and replacement for those retiring or otherwise leaving the profession.

Source: New York State Department of Labor, Jobs in Demand/Projects, Long-Term Occupation Projections, 2014-2024



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