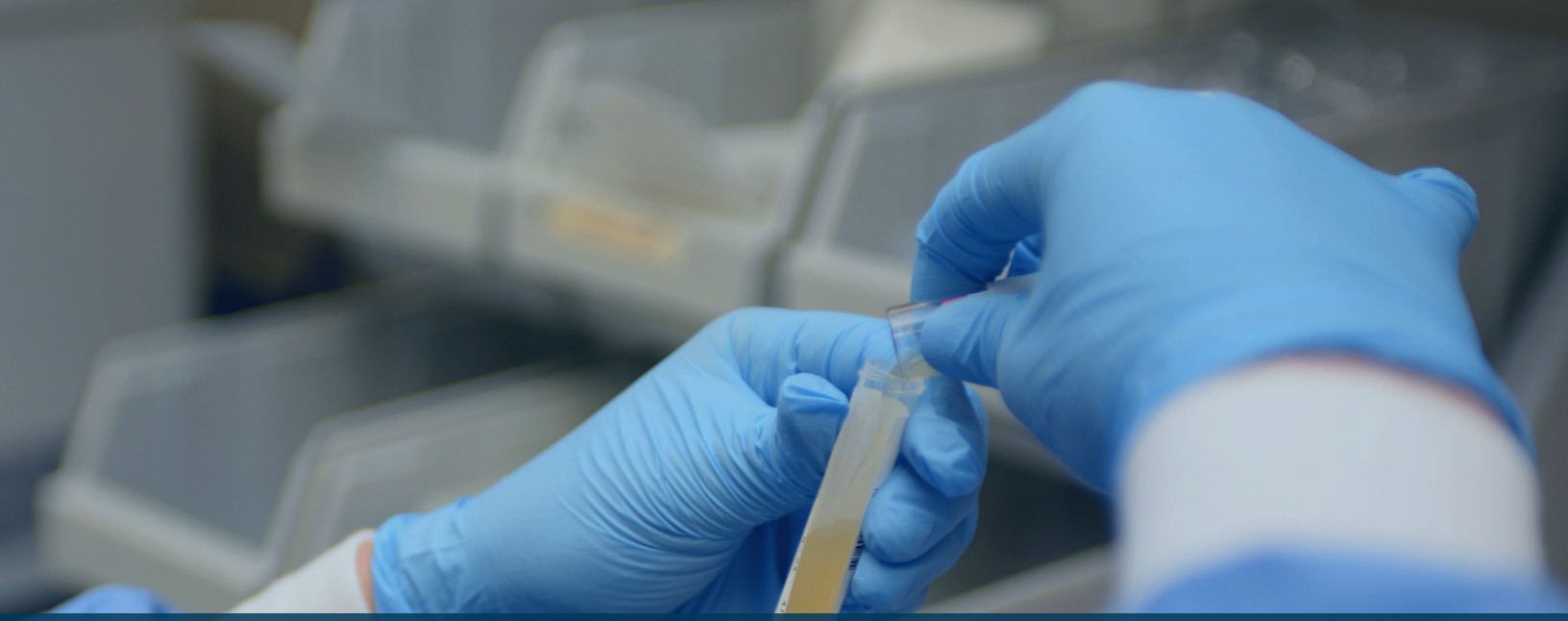

The Supply of and Demand for Middle-Skill Jobs in New York City

Focus on Healthcare

Summer 2017

ABOUT US

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EXECUTIVE SUMMARY

The purpose of this first annual report is to help foundations, public agencies, the public education system, the City University of New York (CUNY), labor unions, and private sector workforce providers understand the balance between the supply of and demand for middle-skill jobs in New York City.

This report focuses on middle-skill occupations in two major occupational groups: healthcare practitioners and technical and healthcare support occupations. The findings are reported for all other middle-skill occupations in aggregate by major occupational group.

WHY MIDDLE-SKILL JOBS?

Middle-skill jobs—those requiring credentials beyond a high school diploma but less than a bachelor's degree—are particularly critical as they often offer better pay and chances for advancement within a career field than low-wage jobs requiring less education. Community colleges and other workforce providers also typically target these occupations for training. Aligning training efforts with the kinds of skills that are most in demand by employers is an ongoing challenge faced by community colleges and workforce development providers. On the one hand, getting the training mix right will help to ensure that the market is not oversupplied with too many eligible jobseekers for too few jobs or, on the other hand, that workforce training participants miss potential job opportunities.

WHY FOCUS ON HEALTHCARE?

This first annual supply-demand study primarily focuses on middle-skill, healthcare occupations. They were selected because a preponderance of middle-skill jobs in New York City are in healthcare. The City of New York, its public K-12 education system, and the City University of New York invest a tremendous amount of resources in training individuals for employment in healthcare occupations. Nationally and in New York City, the healthcare sector—which includes hospitals, ambulatory care, and nursing homes—has outpaced employment growth in the rest of the economy over the past 10 years and is expected to continue to grow.

MIDDLE-SKILL JOBS IN NEW YORK CITY

NYCLMIS identified 106 middle-skill occupations in New York City, 30 of which are related to healthcare. All occupations were included—with just two exceptions—because (1) the majority of the existing workforce has educational attainment at the middle-skill level and (2) the majority of employers report that the education required to perform job functions is at the middle-skill level.

SUPPLY AND DEMAND MEASURES

In the literature on middle-skill employment, supply is typically based on the recent flow of workers who have completed appropriate education and training programs in institutions located within the geographic scope of the labor market. This information is taken either from records reported directly by postsecondary institutions in the state or from information on degrees and certificates available in the US Department of Education's Integrated Postsecondary Education Data System (IPEDS). Information on occupational demand typically relies on two sources: real-time online job postings and biannual 10-year long-term projections from BLS or State Departments of Labor. Real-time postings serve as a proxy for job vacancies.

NYCLMIS made every effort to collect as much data as possible between 2011 and 2015. Supply indicators included the current

workforce, completers of training and education programs (through databases and two original surveys), and licensed workers. Demand indicators included job ads, 1199 SEIU employment demand indicators, and projected employment growth.

ESTIMATING GAPS BETWEEN SUPPLY AND DEMAND

Many efforts to estimate gaps between supply and demand rely on a small number of indicators. This approach may not capture the full picture. In addition, metrics used to estimate supply and demand are measured on different scales, each with its own known or unknown degree of sampling error.

For this research, the indicators were "normalized" so that they all were measured on a scale from zero to one. For each indicator, occupations were considered to be in low, moderate, or high demand or supply based on this normalized score. Occupations in the bottom third of the distribution were low; occupations in the middle third were moderate; and occupations in the upper third were high. For example, for the indicator on associate degree graduates in 2015, if occupation A=0.0, occupation B=0.37; and occupation C=1.0, they would be considered low, moderate, and high, respectively.

A similar approach was used to determine aggregate supply and demand measures. Each occupation received aggregate supply and demand measures by averaging across the respective indicators. The average was then normalized. Low, moderate, and high assignments were made the same way according to location in the overall distribution of scores. The end product shows the level of supply and demand for each healthcare occupation relative to all other healthcare occupations. Possible combinations included: low supply-low demand, low supply-moderate demand, low supply-high demand, moderate supply-low demand, moderate supply-moderate demand, and so forth. Mismatches may occur wherever the rankings of supply and demand are not the same. The strongest indicator of oversupply would be a high supply-low demand ranking, while the most severe undersupply would be indicated by a low supply-high demand ranking.

FINDINGS

Healthcare

Overall, middle-skill healthcare occupations are in balance, with the relative supply of most individual occupations—whether high, moderate, or low—matching employer demand. It appears that education and training providers are operating in balance with labor market demand.

There are a few instances where labor supply seems to exceed demand, namely for medical assistants, cardiovascular technologists and technicians, dental assistants, emergency medical technicians, pharmacy technicians, and phlebotomists.[1] Here the education and training workforce should consider scaling back program enrollment or, at the very least, avoid program expansion. There is one occupation that is somewhat undersupplied—health technologists and technicians (all other), which may reflect the need for more dialysis technicians as the incidence of kidney disease increases. However, the reform of New York State's Medicaid and any changes to the Affordable Care Act are expected to alter future demand for middle-skill healthcare occupations. Other trends may have an impact, including new technologies that may advance patient care and require new skills and an increasing focus on disease prevention.

Other Occupations

Half of the other middle-skill occupation groups also appear to be in balance. Occupation groups for which supply appears to exceed demand—risking an oversupply of candidates for the available jobs—include Installation, Maintenance, and Repair; Personal Care and Service; Protective Service; and Transportation and Material Moving Two occupation

[1] The oversupply of phlebotomists may be due to the requirement for other titles to have phlebotomy certification.

groups—Office and Administrative Support occupations and Sales and Related occupations—appear to be slightly undersupplied. The Sales and Related occupations group only included one occupation—telemarketers. While demand for Office and Administrative occupations seems robust, some caution should be warranted as clerical functions are increasingly being automated.

RECOMMENDATIONS

Gather Workforce Intelligence. These quantitative findings regarding labor supply and demand must be validated through interviews with employers that elucidate their experiences finding qualified candidates for various occupations.

Check Program Alignment. Training providers and educational institutions should review program offerings to ensure curricula match employers' current certification and skill needs. This information should be factored into decision-making.

For example, a majority of New York City employers advertising for medical assistants request some certification, although most do not specify which one. Among those who do specify a preferred certification, employers overwhelmingly identify the American Association of Medical Assistants (AAMA) Certified Medical Assistant credential (CMA). Because the AAMA accreditation process is lengthy, rigorous, and relatively expensive, there are only five accredited programs in New York City.

Invest in Data Collection. Some sources of supply data were unavailable or incomplete. This study points to the need for improved data—accurate records of the number of individuals who obtain training, certifications, and employment. Government agencies and foundations that support workforce and education providers should provide sufficient funding to enable them to collect meaningful data on enrollments, completions, certifications, and—most importantly—employment. The New York State Department of Education offices overseeing licensed professions and proprietary schools, respectively, should be sufficiently well resourced to collect and maintain high-quality data, and make them available to the public.

Target Middle-Skill Industries for Economic Development. Another source of concern is the composition of the labor market overall—the majority of jobs are for those who have a high school education or less. Almost half of the middle-skill jobs in New York City are filled by those with a college degree. As a result, many workers with education at the middle-skill level are in low-skill positions. Priority should be given to attracting firms and industries that bring jobs for middle- as well as high-skilled candidates.

Encourage Skills-Based Recruitment and Hiring. Employers in many sectors often use evidence of a four-year college degree as a first-round screening mechanism. Yet, some jobs can be done as well or better by someone with fewer years of postsecondary education. There is a growing interest in employers selecting candidates based on skill and the alignment of his or her education and training to their staffing needs. This is particularly applicable in tech-heavy industries that need web, mobile, and software developers and people skilled at network administration and information security. New efforts can draw inspiration from such initiatives as Skillful, a joint initiative of the Markle Foundation and Microsoft and the US Department of Labor-funded TechHire projects.

INTRODUCTION AND METHODS

PURPOSE OF THE REPORT

Aligning training efforts with the kinds of skills that are most in demand by employers is an ongoing challenge faced by community colleges and workforce development providers. On the one hand, getting the training mix right will help to ensure that the market is not oversupplied with too many eligible jobseekers for too few jobs or, on the other hand, that workforce training participants miss potential job opportunities. Middle-skill jobs are particularly critical as they are typically targeted for training by community colleges and other workforce providers. They often offer better pay and better chances for advancement within a career field than low-wage jobs requiring less education.

The purpose of this first annual report is to help foundations, public agencies, the public education system, the City University of New York (CUNY), labor unions, and private sector workforce providers understand the balance between the supply of and demand for middle-skill jobs in New York City. This report is intended to inform decisions about programs based on actual conditions in the labor market.

This first annual report focuses on middle-skill occupations in two major occupational groups: Healthcare Practitioners and Technical and Healthcare Support occupations. The findings are reported for all other middle-skill occupations in aggregate by major occupational group. Other occupational groups will be explored in detail in subsequent reports to be issued on an annual basis.

ORGANIZATION OF THE REPORT

This section contains a summary of the methods and measures used to estimate and compare middle-skill labor supply and demand and the final methodology used in this study. The following section contains the findings for all healthcare occupations followed by 30 profiles featuring detailed information on each middle-skill healthcare occupation. The third section of the report contains aggregate findings for the 12 other major occupational groups with middle-skill occupations. The appendices contain a list of all middle-skill occupations as they were defined in this study, detailed methodology and data sources, as well as the instruments used to collect program data from private sector workforce providers and CUNY's continuing education programs.

Middle-skill jobs are particularly critical as they are typically targeted for training by community colleges and other workforce providers. They often offer better pay and better chances for advancement within a career field than low-wage jobs requiring less education.

METHODS AND MEASURES

Many analysts have noted the difficulty in quantifying mismatches in local labor markets. As a result, there is no single, standard method for either estimating labor supply and demand, or for calculating a measure that compares the two. At the core of this issue is the fact that much of the data is retrospective, explaining what has already happened. Even data that project supply and demand are based on the past events and include assumptions that may or may not hold true for the future. The past may not always predict the future when it comes to the labor market.

Acquiring data needed to estimate labor supply and demand presents other challenges: sources provide different information, use varying time frames, and employ dissimilar time lags. While

This supply-demand study sought to overcome data challenges associated with research of its kind by using a unique, multi-indicator approach informed by a review of best practices in the scholarly and workforce literature and input from a panel of technical advisors and stakeholders.

some analysts only use those data that measure supply and demand in comparable time frames, others adjust the data to approximate comparability. Duplicated counts are also an issue, since unit-record data are difficult to obtain. For example, for licensed professions, the number of program graduates will certainly overlap with the number of licenses issued by the state.

This supply-demand study sought to overcome the challenges associated with research of its kind by using a unique, multi-indicator approach informed by a review of best practices in the scholarly and workforce literature and input from a panel of technical advisors and stakeholders that represent the healthcare industry and workforce development system of New York City.[2]

This section contains explanations of:

- How "middle-skill" was defined for the purpose of this research
- The respective supply and demand indicators
- The methods used to aggregate across the indicators and compare supply and demand

2 The literature review is available on the NYCLMIS website: http://www.gc.cuny.edu/lmis/research/middle_skill. A shortened version is under review for publication.

In general, every effort was made to collect data covering the same time frame that included the post-recession years of 2011 through 2015. All measures are New York City-specific, unless otherwise mentioned.

MIDDLE-SKILL DEFINITION

The literature related to workforce development and higher education typically describes middle-skill jobs as those requiring credentials beyond a high school diploma but less than a bachelor's degree.[3] The two dominant ways that researchers define middle-skill jobs are to (1) review the minimum required educational level assigned by the Bureau of Labor Statistics (BLS), and (2) analyze the educational attainment of the local labor force in the relevant occupation. Since there are still other ways to approach this definition, middle-skill occupation lists will differ depending on which approach or approaches are used.

The measures used in this study are as follows:

Percent middle-skill in the US workforce. In Table 1.11, entitled "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," the BLS shows the distribution of educational attainment by occupation for the nation as a whole. These data are from an analysis of the American Community Survey (ACS).

BLS assignment. In Table 1.12, "Education and Training Assignments by Detailed Occupation," the BLS assigns each occupation to a category according to the typical education required for entry. These assignments partially rely on Table 1.11, But also incorporate expert opinion.

3 In keeping with the literature, NYCLMIS uses the term "skill" in the same way as "educational attainment."

Table 1. Criteria Applied in Determining Middle-Skill Occupations

SOURCE	MEASURE	CRITERION	QUALIFYING OCCUPATIONS
BLS TABLE 1.11	Percent US workforce who have attained a postsecondary non-degree award; some college, no degree; or an associate degree.	40% or greater	202
BLS TABLE 1.12	BLS assignment	Postsecondary non-degree award Some college, no degree Associate degree	99
O*NET EMPLOYERS	Percent of employers responding that the occupation requires a postsecondary non-degree award; some college, no degree; or an associate degree.	50% or greater	121
O*NET JOB ZONE	Job Zone assignment	2 or 3	490
AMERICAN COMMUNITY SURVEY	Percent New York City workforce who have attained a postsecondary non-degree award; some college, no degree; or an associate degree.	40% or greater	118
REAL TIME LMI	Number of online job ads seeking middle-skill candidates	50% or greater	Used as tiebreaker

Percent middle-skill in the local workforce. An analysis of the actual distribution of educational attainment of workers by occupation in New York City, also using the ACS 5-year microdata sample (2010-2014).

Employer ranking. Each year, the occupational information network (O*NET), asks a sample of employers to report the education required to perform the functions of a given occupation. The results are reported as a distribution of employer responses.

O*NET job zone. O*NET online employs expert analysts who assign "job zones" to occupations according to their judgment of the required level of experience, education, and training as well as the standard vocational preparation recorded in the Department of Labor's dictionary of occupations. Occupations in job zone 2 require a high school diploma; job zone 3 occupations require vocational training, related on the job experience, or an associate degree.

Current employer preference. Finally, real-time labor market information provides access to data about employers' preferences as they appear in job ads.

All of these measures were used in this research to determine which of the nearly 500 potential occupations (based on the Standard Occupational Classification (SOC)) should be included in this study. The criteria are shown in Table 1, along with the number of occupations qualifying under each.

With a few exceptions, occupations that met three out of the five criteria listed were considered middle-skill. There was an additional test for those occupations that met only national criteria but fewer than 40 percent of the New York City workforce was middle-skill. If a majority of online job ads requested

middle-skill candidates, the occupation was then included. If less than a majority of employers requested middle-skill candidates, it was not included. If there were too few ads to make a determination (less than 50), the occupation was not included. In addition, two occupations that did not meet the above criteria were included in response to feedback from the Stakeholder Advisory Board: Community Health Workers within healthcare, and Computer User Support Specialists within the computer and mathematical occupational group, respectively.

A full list of the 106 occupations that qualified as middle-skill, along with how each performed against the above criteria, is included in Appendix B.

SUPPLY INDICATORS

In the literature on middle-skill employment, supply is typically based on the recent flow of workers who have completed appropriate education and training programs in institutions located within the geographic scope of the labor market. This information is taken either from records reported directly by postsecondary institutions in the state or from information on degrees and certificates available in the US Department of Education's Integrated Postsecondary Education Data System (IPEDS). To the extent that these degrees and certificates can be mapped to middle-skill occupations, these counts yield a quantitative estimate of the supply of workers. Researchers have projected future supply using employment data available from the ACS. However, IPEDS and ACS data do not capture the full picture of the supply of workers. Additional measures include individuals completing programs from non-degree granting institutions and proprietary schools.

NYCLMIS sought to obtain as many indicators of supply as possible. The following measures were used to estimate different dimensions of labor supply in this research:

1. Citywide employment, 2015. People who are currently employed within a given occupation are considered to be part of the eligible labor supply.
2. Career and Technical Education (CTE) programs offering certification. Students graduating from high school with a relevant certification that qualifies them for employment. Student counts were not available, so the number of schools is used as a proxy measure.
3. CUNY continuing education graduates, average 2011-2015. The five-year average number of students graduating from a CUNY continuing education program with a certification that qualifies them for employment in one of the middle-skill occupations. NYCLMIS developed a survey to capture program completers from CUNY continuing education programs (see Appendix C for the survey instrument).
4. CUNY certificate completers, 2011. The number of students completing a CUNY continuing education program in 2011 with a certification that qualifies them for employment in one of the middle-skill occupations.
5. CUNY certificate completers, 2015. The number of students completing a CUNY continuing education program in 2015 with a certification that qualifies them for employment in one of the middle-skill occupations.
6. CUNY certificate completers, change 2011-2015. The change in the total number of students completing a CUNY continuing education program with a certification that

qualifies them for employment in one of the middle-skill occupations from 2011 and 2015.

7. Licenses issued, 2017. The State of New York requires individuals holding some of the middle-skill healthcare occupations to have a license. License counts by year were not available, nor was retrospective data, so the total number of licenses as of March 2017 was used as a proxy.
8. Associate degrees, 2011. The number of degrees conferred in New York City in 2011 from programs that qualify graduates for employment in one of the middle-skill occupations.
9. Associate degrees, 2015. The number of degrees conferred in New York City in 2015 from programs that qualify graduates for employment in one of the middle-skill occupations.
10. Associate degrees, average 2011-2015. The five-year average number of degrees conferred in New York City from programs that qualify graduates for employment in one of the middle-skill occupations.
11. Associate degrees, change 2011-2015. The change in the total number of degrees conferred in New York City from programs that qualify graduates for employment in one of the middle-skill occupations, from 2011 to 2015.
12. Training provider class size, 2015. The "seat capacity" of eligible training providers offering credentials that qualify completers to obtain employment. The number of completers was not available, so class size was used as a proxy.
13. Unemployment insurance beneficiaries, 2011. The number of unemployment insurance beneficiaries in 2011 who reported their last position as being one of the middle-skill occupations.
14. Unemployment insurance beneficiaries, 2015. The number of unemployment insurance beneficiaries in 2015 who reported their last position as being one of the middle-skill occupations.
15. Unemployment insurance beneficiaries, change 2011-2015. The change in the number of unemployment insurance beneficiaries from 2011 to 2015.
16. Wage change, 2011-2015. Neoclassical economic theory predicts that wages increase when labor demand exceeds the supply. This indicator is the inflation-adjusted change in annual full-time wage income between 2011 and 2015.
17. Workforce provider certifications 2015. NYCLMIS developed a survey of nonprofit organizations that are members of the New York City Employment and Training Coalition to assess the number of relevant certifications earned by training program completers (Appendix D contains details about the survey instrument). Post-completion employment figures were not available for all providers.

DEMAND INDICATORS

In the literature on middle-skill employment, information on occupational demand typically relies on two sources: real-time online job postings and the biannual 10-year long-term projections. Real-time postings serve as a proxy for job vacancies. These data are reported for local areas and may include information about the education, certification, and skill requirements of each position. Projections are available for middle-skill occupations in states,

Table 2. Data Sources and Limitations

SOURCE	DETAILS	YEARS AVAILABLE	CHALLENGES
LABOR SUPPLY			
AMERICAN COMMUNITY SURVEY	Individuals employed by occupation	2011-2015	Occupations in ACS are not completely aligned with the Standard Occupational Classification (SOC). Where codes were not aligned, the data were not included. Other occupations were excluded due to sample size.
INTEGRATED POSTSECONDARY EDUCATION DATABASE	Associate degree and certificate recipients from private and public institutions that participate in the Federal financial assistance program authorized by Title IV of the Higher Education Act of 1965.	2011-2015	Using the crosswalk provided by the US Department of Education, it is possible for programs to relate to multiple occupations, so findings on occupations may be or under- or over-estimated. This issue is less serious in healthcare than for other occupations as educational programs tend to align well with titles. IPEDS only contains data on schools that participate in the Federal financial assistance program. Other programs may be captured through other data sources.
CAREER AND TECHNICAL EDUCATION PROGRAMS	High schools offering certifications	2017	Available data only includes the number of high schools offering relevant certifications, not the number of graduates or certificate recipients.
ELIGIBLE TRAINING PROVIDER LIST	Number of seats available in training programs eligible for Workforce Innovation and Opportunity Act (WIOA) funding.	2011-2015	Data includes the number of seats available, which is used as a proxy for enrollment. Actual enrollment and completion data were unavailable.
UNEMPLOYMENT INSURANCE BENEFICIARIES	Number of unemployment insurance beneficiaries whose last job was in a middle-skill occupation	2011-2015	Only a portion of unemployed persons qualifies for or receives unemployment insurance. Occupations are self-reported titles that are assigned to SOC codes by the New York State Department of Labor.
LICENSES ISSUED	Individuals who have required licenses in certain occupations	2017	Data only shows licenses issued as of 2017. There is no historical, year-by-year information.
CUNY CERTIFICATE PROGRAMS	Number of individuals who have obtained certifications in related CUNY non-degree programs	2011-2015	Self-reported. Some programs did not collect completion data in all years.
SURVEY OF WORKFORCE PROVIDERS	Number of individuals who completed non-degree training programs from non-profit workforce providers	2011-2015	Response rate; some providers unable to collect data.
LABOR DEMAND			
1199SEIU PLACEMENTS	Number of hires in related occupations	2011-2015	Some titles were not aligned to SOC codes.
LONG-TERM OCCUPATIONAL PROJECTIONS	2012-2022 projected growth and annual average openings.	2012-2022	Some biases may exist where small samples were taken. Turnover not currently included in count of openings.
REAL-TIME LABOR MARKET INFORMATION	Job ads for related occupations as proxy for vacancies	2011-2015	Large employers more likely to post online. Smaller businesses are more likely to post only executive positions online. Job postings may not reflect actual hiring practices. Many employers do not list educational and credential requirements.

metropolitan areas, and a selected number of cities.

NYCLMIS estimated labor market demand using the following measures:

1. 1199SEIU union placements 2011. Healthcare is a heavily unionized industry in New York City. Collective bargaining with 1199SEIU, the largest private sector healthcare union, requires that union members must be considered for any openings before they are posted online or elsewhere. This indicator is the number of job placements made by 1199SEIU in 2011.
2. 1199SEIU union placements 2015. The number of job placements made by 1199SEIU in 2015.
3. Ad volume 2011. The number of online job ads in 2011.
4. Ad volume 2015. The number of online job ads in 2015.

5. Ad volume change, 2011-2015. The change in the total number of online job ads between 2011 and 2015.
6. Ad volume average, 2011-2015. The average number of online job ads per month between 2011 and 2015.
7. Average annual openings. The number of openings due to retirement or new jobs in 2015.
8. Long-term projection, number. The projected net job change between 2012 and 2022.
9. Long-term projection, percent. The projected percentage changes in jobs change between 2012 and 2022.

DATA LIMITATIONS

Many of the sources of data typically used to estimate supply and demand—such as IPEDS and Real-Time Labor Market Information (RTLMI)—have commonly known limitations. Researchers using IPEDS data must use a crosswalk to relate the Classification of Instructional Programs (CIP) and the Standard Occupational Classification (SOC). A training program could prepare individuals for multiple occupations, not just one. The supply of trained workers can also come from a variety of sources, not all of which are reported in the IPEDS data. IPEDS includes data from institutions that participate in the Federal financial assistance program authorized by Title IV of the Higher Education Act of 1965. Data from proprietary schools, non-profit organizations, and City University of New York non-credit certificate programs are not typically included.

RTLMI describes software that scrapes online job postings daily, organizes the information into quantifiable data, and then stores this information into databases for analysis. The NYCLMIS team used Burning Glass™ software to obtain a count of New York City-based job postings for the target occupations between 2011-2015. However, not all types of jobs are equally represented online. Large employers and corporations are more likely to post jobs online. Smaller businesses are more likely to post only executive positions online. Finally, job postings also may not reflect actual hiring preferences, overestimating demand. A summary of the limitations of each data source can be found in Table 2.

In addition to these limitations, the study did not account for in- or out-migration. For example, individuals may be trained in New York City, but seek employment in another state. This may be less of an issue for CUNY students in degree or continuing education programs, since research conducted by the Office of Institutional Research and Assessment suggests that about 80 percent of CUNY graduates stay in New York City. More likely a factor that would affect these findings are the individuals who come to work in New York City after being trained elsewhere.

AGGREGATING AND COMPARING SUPPLY AND DEMAND

One issue made clear in the literature review and from technical advice that informed the methodology of this research is that attempts at estimating actual figures that represent supply or demand are problematic for the many reasons cited above. In addition, the metrics are measured on different scales each with their own known or unknown degree of sampling error.

For this report, the indicators were 'normalized' so that they could be measured on a scale from zero to one. For each indicator, occupations were considered to be in either low, moderate, or high demand or supply based on the normalized score. Occupations scoring 0.00 to 0.333 were low; occupations scoring 0.334 to 0.667 were moderate; and occupations scoring 0.668 to 1.00 were high. For example, for the indicator on associate degree graduates in 2015, if occupation A=0.00, occupation B=0.37; and occupation C=1.00, they would be considered low, moderate, and high, respectively.

A similar approach was used to determine aggregate supply and demand measures. Each occupation received aggregate supply and demand measures by averaging across the respective indicators. The average was then normalized. Just as for the indicators, occupations scoring 0.00 to 0.333 were considered in low demand or supply; occupations scoring 0.334 to 0.667 were moderate; and occupations scoring 0.668 to 1.00 were high. The end product shows the level of supply and demand for each healthcare occupation relative to all other healthcare occupations. Possible combinations included: low supply-low demand, low supply-moderate demand, low supply-high demand, moderate supply-low demand, moderate supply-moderate demand, and so forth. Mismatches may occur wherever the rankings of supply and demand are not the same. The strongest indicator of oversupply would be a high supply-low demand ranking. The most severe undersupply would be indicated by a low supply-high demand ranking.

THE SUPPLY OF AND DEMAND FOR MIDDLE-SKILL HEALTHCARE OCCUPATIONS IN NEW YORK CITY

This first annual supply-demand study primarily focuses on middle-skill, healthcare occupations. They were selected because a preponderance of middle-skill jobs in New York City are in healthcare. The City of New York, its public K-12 education system, and the City University of New York invest a tremendous amount of resources in training individuals for employment in various healthcare occupations. Nationally, as well as in New York City, the healthcare sector—which includes hospitals, ambulatory care, and nursing homes—has outpaced employment growth in the rest of the economy over the past 10 years and is expected to continue to grow.

LOOKING BACKWARD

The major factors underlying growth and change in healthcare from 2011 to 2015, the primary years examined in this study, are outlined below:

Aging population. An aging population, which drove an increase in demand for healthcare services, was a major factor contributing to growth in sector employment. With the aging of the baby boom generation, and increased longevity there is a larger number of people in their senior years than ever.

Technology. Technological advances have meant that some new occupations have emerged, such as in healthcare information management, while others have markedly changed. Technology used in surgery and diagnostics have become less invasive. Moreover, surgery has become safer and more people have chosen to undergo procedures that they may not have just a decade ago, thus creating a higher demand for healthcare services across the industry.

Healthcare reform policies. The Patient Protection and Affordable Care Act (ACA) was passed in 2010 and upheld in the supreme court in 2012. The ACA has a "triple aim:" to improve the patient experience of care (including quality and satisfaction) and the health of populations while reducing the per capita cost of healthcare.[4] One of the largest impacts of the ACA was an increase in the number of individuals covered by health insurance. In addition, ACA shifted the locus of healthcare delivery out of emergency rooms and other acute care settings and into outpatient and home-based settings. It encouraged the adoption of electronic health records, which allows practitioners to track patient outcomes and costs at the same time. The ACA emphasized prevention rather than treatment of diseases, especially chronic diseases like high blood pressure, asthma, and diabetes. ACA reform also expanded Medicaid and placed a greater focus on improving the health of low-income individuals at a lower cost. The labor market demand figures that appear in this section are from 2011 to 2015, and therefore reflect the landscape that resulted from these policy changes.

LOOKING FORWARD

The intent of this report is to provide a baseline snapshot of the current balance of middle-skill labor supply and demand in the local healthcare workforce so that adjustments can be made, whether the future is a "steady state" or something dramatically different. The following developments, which are currently on the horizon, are certain to affect healthcare, and thus the healthcare workforce, in the coming years:

Affordable Care Act repeal. As of this writing, there is uncertainty around the future of the ACA. The US Congress has made several attempts to repeal the ACA, thus altering the shape of healthcare delivery yet again. It was estimated that between 22 and 23 million

4 Institute for Healthcare Improvement, http://www.ihi.org/Engage/Initiatives/TripleAim/Pages/default.aspx.

The major takeaway from these findings is that, by and large, the education and workforce training systems are operating in balance with labor market demand.

people would lose health insurance coverage if these bills had been enacted into law.[5] Envisioned cuts to Medicaid could also mean changes to the healthcare delivery system used by low-income Americans. Other than these predictions, the effects of any repeal that comes about are still unknown.

Technology. Thus far, advances in nanotechnology and genomics have had salutary effects on patients and practitioners. Further advances in artificial intelligence and other technologies can be expected to affect healthcare delivery into the future but their effects on the workforce are as yet unknown.

Delivery System Reform Incentive Payment Program (DSRIP). Early efforts to reduce Medicaid costs in New York State were so successful at capping costs, that the State received a payment of $8.4 billion dollars from the federal government to implement further reforms. These reforms collectively are known as DSRIP. DSRIP's major aim is to decrease the number of avoidable hospitalizations among Medicaid recipients by focusing more on prevention and healthcare delivery in outpatient settings.[6] Area hospitals are partnering with safety net providers to coordinate patient care among themselves, conduct more community outreach, and integrate the behavioral health and healthcare systems more seamlessly.

FINDINGS

Table 3 shows the final results of the analysis of the labor supply and demand for middle-skill healthcare occupations. Occupations that are in balance between supply and demand appear in the shaded boxes on the diagonal from the upper right to the lower left corner of the table. The major takeaway from these findings is that, by and large, the education and workforce training systems are operating in balance with labor market demand. While this means that the labor supply, including completers of education and training, is quantitatively in balance with industry demand, further research is needed to determine whether the quality of existing candidates, including completers of education and training, is aligned with what employers are seeking in their candidates.

Occupations for which supply appears to exceed demand—which risks oversupplying candidates for the available jobs—include medical assistants, cardiovascular technologists and technicians, dental assistants, emergency medical technicians, pharmacy technicians, and phlebotomists.[7] While the labor market appears to have a high supply of available individuals to fill medical assistant positions, the actual demand during this period was in the moderate range. Just one occupation—health technologists and technicians (all other)—appears undersupplied. The demand for the remaining occupations was found to be at the low end of the continuum, while there appears to be a moderate supply of available applicants. Data were not sufficient to determine the labor supply status of occupational therapy aides.

The following section contains detailed findings for each of the 30 middle-skill healthcare occupations.

5 Congressional Budget Office, May 24, 2017, H.R. 1628, American Health Care Act of 2017 (https://www.cbo.gov/system/files/115th-congress-2017-2018/costestimate/hr1628aspassed.pdf); Congressional Budget Office, June 26, 2017, H.R. 1628, Better Care Reconciliation Act of 2017 Cost Estimate (https://www.cbo.gov/system/files/115th-congress-2017-2018/costestimate/52849-hr1628senate.pdf).

6 New York State Department of Health, (https://www.health.ny.gov/health_care/Medicaid/redesign/dsrip/).

7 The oversupply of phlebotomists may be due to the requirement for other titles to have phlebotomy certification.

Table 3. The Supply of and Demand for Middle-Skill Healthcare Occupations

		DEMAND		
		LOW	MODERATE	HIGH
SUPPLY	HIGH		MEDICAL ASSISTANTS	MEDICAL RECORDS AND HEALTH INFORMATION TECHNICIANS NURSING ASSISTANTS
	MODERATE	CARDIOVASCULAR TECHNOLOGISTS AND TECHNICIANS DENTAL ASSISTANTS EMTs AND PARAMEDICS PHARMACY TECHNICIANS PHLEBOTOMISTS	LICENSED PRACTICAL AND LICENSED VOCATIONAL NURSES MEDICAL SECRETARIES	
	LOW	COMMUNITY HEALTH WORKERS DENTAL HYGIENISTS DIAGNOSTIC MEDICAL SONOGRAPHERS DIETETIC TECHNICIANS MAGNETIC RESONANCE IMAGING TECHNICIANS NUCLEAR MEDICAL TECHNOLOGISTS OCCUPATIONAL THERAPY ASSISTANTS OPTHALMIC MEDICAL TECHNICIANS OPTICIANS, DISPENSING PHYSICAL THERAPIST AIDES PHYSICAL THERAPIST ASSISTANTS PSYCHIATRIC TECHNICIANS RADIATION THERAPISTS RADIOLOGIC TECHNOLOGISTS RESPIRATORY THERAPISTS RESPIRATORY THERAPY TECHNICIANS SURGICAL TECHNOLOGISTS VETERINARY TECHNOLOGISTS AND TECHNICIANS	HEALTH TECHNOLOGISTS AND TECHNICIANS, ALL OTHER	
	UNKNOWN	OCCUPATIONAL THERAPY AIDES		

CARDIOVASCULAR TECHNOLOGISTS AND TECHNICIANS

MODERATE SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Cardiovascular technologists and technicians	1,180	23%	$40,680	$54,280
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic purposes. May conduct or assist in electrocardiograms, cardiac catheterizations, pulmonary functions, lung capacity, and similar tests. Includes vascular technologists.

OTHER TITLES

EKG Technician, Echo Technologist, Lead Pulmonary Function Technologist, Echo Technician, Echocardiographer, Vascular Technologist, Cardiovascular Specialist I, Monitor I, Offsite Echocardiography Specialist

IN-DEMAND SKILLS

Ultrasound, Electrocardiogram (EKG/ECG), Pulmonary Function, Patient Care, Cardiopulmonary Function Evaluation, Echocardiography, Respiratory Therapy, Calibration, Scheduling

IN-DEMAND CERTIFICATIONS

American Registry for Diagnostic Medical Sonography (ARDMS), Registered Diagnostic Cardiac Sonographer, Certified Pulmonary Function Technologist, Registered Cardiovascular Invasive Specialist, Basic Cardiac Life Support Certification, Registered Pulmonary Function Technologist, Registered Cardiac Sonographer, Registered Cardiac Electrophysiology Specialist, Registered Vascular Technologist, Registered Diagnostic Medical Sonographer

TOP ADVERTISING EMPLOYERS

NYU Langone Medical Center, Mount Sinai Medical Center, New York Presbyterian Hospital, Northwell Health, Memorial Sloan Kettering Cancer Center, Hospital for Special Surgery, AdvantageCare Physicians, New York Blood Center, New York Methodist Hospital.

KEY FINDINGS

- This occupation ranks moderate in labor supply and low in demand, suggesting a slight imbalance.
- All of the occupation's supply indicators were in the moderate range with the exception of CUNY certificate program completers in 2015, the change in CUNY completions between 2011 and 2015, and the change in unemployment insurance claimants between 2011 and 2015.
- All of the demand indicators were low, except the long-term projected employment change as expressed as a percentage.
- Employment of cardiovascular technologists and technicians, including vascular technologists, is projected to grow almost twice as fast as the average for all middle-skill occupations in New York City. They will continue to be needed in healthcare settings to provide an alternative to imaging techniques that involve radiation.
- As the large baby-boom population ages, the need to diagnose medical conditions—such as blood clots and heart disease—will likely increase.

CARDIOVASCULAR TECHNOLOGISTS AND TECHNICIANS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

COMMUNITY HEALTH WORKERS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Community health workers	1,290	19%	$27,470	$38,600
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Assist individuals and communities to adopt healthy behaviors. Conduct outreach for medical personnel or health organizations to implement programs in the community that promote, maintain, and improve individual and community health.

OTHER TITLES

Community Liaison, Health Navigator, Community Health Advocate, Outreach Workers, Peer Navigator, Care Navigator, Certified in Person Assistor/Navigator, Community Navigator, Health Advocate, Public Health Advisor

OCCUPATIONAL SKILLS

Case Management, Health Education, Customer Service, Mental Health, Public Health and Safety, Microsoft Excel, Scheduling, Treatment Planning, Health Promotion, Programs, Data Collection

CERTIFICATIONS

First Aid CPR/AED, Insurance License, Phlebotomy Certification

EMPLOYERS

NYC Department of Health and Mental Hygiene, Housing Works, Gay Men's Health Crisis, Public Health Solutions, Harlem United Community Aids Center, Workforce1 Healthcare Center, The Coalition of Behavioral Health Agencies Inc., Acacia Network, Center for Urban Community Services

KEY FINDINGS

- This occupation ranks low in both supply and demand, indicating a current balance in this occupation's labor market.
- All supply indicators are low with the exception of the change in the number of associate degrees conferred from 2011 to 2015 (moderate).
- All demand indicators are low with the exception of the projected percentage job between 2012 and 2022.
- Employment of community health workers is projected to grow faster than the average for all middle-skill occupations in New York City.
- This is an emerging occupation and it is not yet clear what credentials will be required to fill these positions.
- There have been limitations in the growth of this occupation to date because the mechanisms for payers to reimburse for their services are not yet in place.
- Growth will be driven by efforts to improve health outcomes and to reduce healthcare costs by teaching people healthy habits and behaviors and explaining how to use available healthcare services.

COMMUNITY HEALTH WORKERS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

DENTAL ASSISTANTS

MODERATE SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Dental assistants	8,000	19%	$22,730	$31,410
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Assist dentist, set up equipment, prepare patient for treatment, and keep records.

OTHER TITLES

Dental/Orthodontic Treatment Coordinator, Orthodontic Assistant

IN-DEMAND SKILLS

Dental Assistance, X-Rays, Infection Control, Patient Care, Patient Preparation, Oral Hygiene, Patient Treatment, Appointment Setting, Dental Instruments

IN-DEMAND CERTIFICATIONS

Certified Dental Assistant, First Aid CPR/AED, Basic Cardiac Life Support Certification, Certified Registered Central, Service Technician, Certified Coding Specialist, Emergency Medical Technician (EMT), Phlebotomy Certification, Registered Health Information Administrator, Registered Health Information Technician, Registered Respiratory Therapist

TOP ADVERTISING EMPLOYERS

Montefiore Medical Center, New York University, Northwell Health, Aspen Dental, New York City Health and Hospitals Corporation, Lutheran Healthcare Group, Rescare, New York Methodist Hospital, NYU Lutheran Medical Center, Open Door Family Medical Centers

KEY FINDINGS

- This occupation ranks moderate in supply and low in demand, indicating some imbalance in the labor market for this occupation.
- The supply indicators for the change in wages between 2011 and 2015 are high. Other supply indicators are low or moderate.
- Amongst all healthcare occupations with measurable data from the American Community Survey, the wages for Dental Assistant decreased the most between 2011 and 2015.
- All demand indicators are low except the projected percent change in jobs between 2012 and 2022.
- According to the New York State Department of Education's Office of Licensed Professions, there are currently three schools registered to offer programs that lead to this certification in New York City.
- Employment of dental assistants is projected to grow faster than the average for all middle-skill occupations in New York City.
- Dentists are expected to continue to hire more dental assistants to complete routine tasks, allowing the dentist to see more patients in their practice and to spend their time on more complex procedures.

DENTAL ASSISTANTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

DENTAL HYGIENISTS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Dental hygienists	2,360	26%	$65,520	$90,670
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Clean teeth and examine oral areas, head, and neck for signs of oral disease. May educate patients on oral hygiene, take and develop x-rays, or apply fluoride or sealants.

OTHER TITLES

Hygienist

IN-DEMAND SKILLS

Dental Hygiene, X-Rays, Prophylaxis, Cardiopulmonary Resuscitation (CPR), Dental Instruments, Oral Hygiene, Patient/Family Education and Instruction, Oral diseases Knowledge, Dental Assistance

IN-DEMAND CERTIFICATIONS

Dental Hygienist Certification, First Aid CPR/AED, Advanced Cardiac Life Support (ACLS) Certification, Basic Cardiac Life Support Certification, Certified Coding Specialist, Certified Program Assistant, Home Health Aide, Institutional Review Board (IRB), Pediatric Advanced Life Support (PALS) Certification, Phlebotomy Certification

TOP ADVERTISING EMPLOYERS

New York University, Western New York Dental Group, Montefiore Medical Center, NYU Langone Medical Center, Rescare, American Dental Partners, Care for the Homeless, Lutheran Healthcare Group, Northwell Health

KEY FINDINGS

This occupation ranks low in both supply and demand indicating balance in this occupation's labor market.

- All supply indicators are low with the exception of the change in the number of associate degrees conferred from 2011 to 2015 (moderate) and the change in unemployment insurance claimants between 2011 and 2015 (high).

All demand indicators are low with the exception of the projected percentage job change between 2012 and 2022.

- A dental hygienist is required to hold a license in order to administer anesthesia. According to the New York State Department of Education, Office of Licensed Professions, there are currently two schools in New York City registered to offer a program that leads to this license.
- Employment of dental hygienists is projected to grow almost twice as fast as the average for all middle-skill occupations in New York City.
- Ongoing research linking oral health and general health will continue to spur the demand for preventive dental services.
- The demand for dental services will increase as the population ages, and cosmetic dental services become increasingly popular.
- As the large baby-boom population ages and people retain more of their original teeth than previous generations did, the need to maintain and treat these teeth will continue to drive demand for dental care.

DENTAL HYGIENISTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

DIAGNOSTIC MEDICAL SONOGRAPHERS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Diagnostic medical sonographers	1,550	41%	$52,400	$71,270
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Produce ultrasonic recordings of internal organs for use by physician.

OTHER TITLES

Cardiac Sonographer, Nuclear Medicine Technologist, Ultrasound Technologist, Ultrasound Technician, Sonographer, Polysomnographic Technologist, CT Technologist, Vascular Ultrasound Technologist

IN-DEMAND SKILLS

Ultrasound, Cardiopulmonary Resuscitation, Ensuring Patients Comfort, Anatomy, Echocardiography, Cardiology, Echocardiography, Nuclear Medicine, Patient Privacy, Interaction with Patients

IN-DEMAND CERTIFICATIONS

American Registry for Diagnostic Medical Sonography (ARDMS), American Registry of Radiologic Technologists (ARRT), Registered Vascular Technologist, Certified Nuclear Medicine Technologist, Basic Cardiac Life Support Certification, First Aid CPR/AED, Registered Diagnostic, Cardiac Sonographer, Registered Radiologic Technologist, Registered Polysomnographic Technologist

TOP ADVERTISING EMPLOYERS

NYU Langone Medical Center, NYU School of Medicine Department of Population Health, Mount Sinai Medical Center, New York Presbyterian Hospital, Christiana Care, Memorial Sloan Kettering Cancer Center

KEY FINDINGS

- This occupation ranks low in supply and demand indicating a balance in this occupation's labor market.
- All available supply indicators are low with the exception of the change in the number of associate degrees conferred from 2011 to 2015 (moderate) and the change in unemployment insurance claimants between 2011 and 2015 (high).
- All demand indicators are low with the exception of the projected percentage job change between 2012 and 2022.
- Employment of diagnostic medical sonographers is projected to grow almost three times faster than the average for all middle-skill occupations in New York City.
- Diagnositic medical sonogrpahers will continue to be needed in healthcare settings to provide an alternative to imaging techniques that involve radiation.
- As the large baby-boom population ages, the need to diagnose medical conditions will likely increase.

DIAGNOSTIC MEDICAL SONOGRAPHERS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	Low
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	Low
Associate degrees, 2015	Low
Associate degrees, average 2011-15	Low
Associate degrees, change, 2011-15	Moderate
Training provider class size, 2015	
Unemployment insurance claimants, 2011	Low
Unemployment insurance claimants, 2015	Low
Unemployment insurance claimants, change 2011-15	High
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	Low
1199SEIU placements, 2015	
Ad volume, 2011	Low
Ad volume, 2015	Low
Ad volume change, 2011-15	Low
Average annual openings, 2012-22	Low
Average ad postings, 2011-15	Low
Long-term projection, #	Low
Long-term projection, %	High

DIETETIC TECHNICIANS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Dietetic technicians	260	-	$38,770	$44,920
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Assist in the provision of food service and nutritional programs, under the supervision of a dietitian. May plan and produce meals based on established guidelines, teach principles of food and nutrition, or counsel individuals.

OTHER TITLES

Nutrition Assistant, Diet Worker, Dietetic Technician, Diet Technician, Registered Diet Technician, Assistant Manager, Diet Supply Worker

IN-DEMAND SKILLS

Nutrition Services, Cleaning, Allergies, Food Service Experience, Patient Assistance, Care Plans, Patient Care, Supervisory Skills, Therapy, Appointment Setting

IN-DEMAND CERTIFICATIONS

Registered Dietitian, Certified Respiratory Therapy Assistant, ServSafe

TOP ADVERTISING EMPLOYERS

New York Presbyterian Hospital, Northwell Health, Montefiore Medical Center, Urban Health Plan Incorporated, Centers Health Care, Christiana Care, Jewish Home Lifecare, Aramark, Catholic Health Initiatives

KEY FINDINGS

- This occupation ranks low in both supply and demand, indicating balance in this occupation's labor market.
- All supply indicators are low with the exception of the change in the number of associate degrees conferred from 2011 to 2015 (moderate) and the change in unemployment claimants between 2011 and 2015.
- All demand indicators are low.
- An aging population, along with an increasing emphasis on prevention in an effort to reduce healthcare costs is expected to increase the demand for dietetic technicians in the coming years.
- There is also some concern that improvements in and increased access to online dietetic applications could counteract these trends and reduce their demand.[1]

1 Kicklighter, J., R. Dorner, A. Hunter, et al., 2017. Visioning Report 2017: A Preferred Path Forward for the Nutrition and Dietetics Profession, Journal of the Academy of Nutrition and Dietetics, 117:1, pp. 110-127.

DIETETIC TECHNICIANS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

EMERGENCY MEDICAL TECHNICIANS AND PARAMEDICS

MODERATE SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Emergency medical technicians and paramedics	5,050	19%	$28,710	$41,700
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Assess injuries, administer emergency medical care, and extricate trapped individuals. Transport injured or sick persons to medical facilities.

OTHER TITLES

Medical Technician, Ambulatory Care Technician, EMS EMT, EMT I Per Diem

IN-DEMAND SKILLS

Patient Care, Supervisory Skills, Patient Transportation and Transfer, Continuous Quality Improvement, Cardiopulmonary Resuscitation (CPR), Advanced Cardiac Life Support (ACLS), Customer Billing, Microsoft Excel, Microsoft Word, Interaction with Patients/Medical Personnel

IN-DEMAND CERTIFICATIONS

Emergency Medical Technician (EMT), Paramedic Certification, Basic Cardiac Life Support Certification, First Aid CPR/AED, National Registry of Emergency Medical Technicians (NREMT), Security Clearance, Certified Cardiology Coder, Certified Coding Specialist, Certified Occupational Health Nurse, Medical Billing and Coding Certification

TOP ADVERTISING EMPLOYERS

Northwell Health, New York Presbyterian Hospital, Mount Sinai Medical Center, Long Island University, New York Police Department (NYPD), Humana Health, Christiana Care, Weill Cornell Medical College, Unitedhealth, Rescare

KEY FINDINGS

- This occupation ranks as moderate in labor supply and low in labor demand, indicating a slight imbalance in the labor market.
- The supply indicators for CUNY certificate completions are high, along with the change in unemployment insurance claimants between 2011 and 2015. Other supply indicators are low or moderate.
- All demand indicators are low with the exception of the projected percentage job change between 2012 and 2022.
- According to the New York State Department of Education, there are currently three schools in New York City registered to offer programs that lead to this certification.
- Employment of emergency medical technicians is projected to grow somewhat faster than the average for all middle-skill occupations in New York City.
- Emergencies, such as car crashes, natural disasters, and acts of violence, will continue to create demand for EMTs and paramedics.
- Growth in the middle-aged and elderly population will lead to an increase in age-related emergencies, such as heart attacks and strokes. This increase, in turn, will create greater demand for EMT services.
- An increase in the number of specialized medical facilities will require more EMTs to transfer patients with specific conditions for treatment.

EMERGENCY MEDICAL TECHNICIANS AND PARAMEDICS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

HEALTH TECHNOLOGISTS AND TECHNICIANS, ALL OTHER

LOW SUPPLY-MODERATE DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Health technologists and technicians, all other	1,870	12%	$35,910	$47,040
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

All other health technologists and technicians which do not fit into one of the detailed occupations, including Neurodiagnostic Technologists, Ophthalmic Medical Technologists, Radiologic Technicians, Surgical Assistants, and others.

OTHER TITLES

Neurodiagnostic Technologists, Ophthalmic Medical Technologists, Radiologic Technicians, Surgical Assistants, Operating Room Technician, Hemodialysis Technician, Emergency Room Technician, Biometric Fingerprinting Technician

IN-DEMAND SKILLS

Patient Care, X-Rays, Repair, Radiology, Scheduling, Inspection, Electrocardiogram (EKG/ECG), Cleaning, Customer Service, Radiologic Technology, Patient Preparation

IN-DEMAND CERTIFICATIONS

American Registry of Radiologic Technologist (ARRT), Emergency Medical Technician (EMT), Certified Nursing Assistant, Basic Cardiac Life Support Certification, Network+ Certified, Certified Medical Assistant, First Aid/CPR, Registered Radiologic Technologist, Certified Surgical Technologist, Certified Hyperbaric Technologist

TOP ADVERTISING EMPLOYERS

Northwell Health, New York Presbyterian Hospital, Memorial Sloan Kettering Cancer Center, Mount Sinai Medical Center, Montefiore Medical Center, NYU Langone Medical Center, Continuum Health Partners, New York Methodist Hospital

KEY FINDINGS

- This occupation ranks low in supply and moderate in demand, indicating a slight undersupply.
- Most supply indicators are low with the exception of CUNY certificate completers in 2015 (moderate), the change in CUNY certificate completers between 2011 and 2015 (moderate), the change in the number of associate degrees awarded from 2011 and 2015 (high), and the change in underemployment insurance claimants between 2011 and 2015 (high).
- All available demand indicators are low or moderate (online job ads).
- Demand may reflect the need for more dialysis technicians due to the increasin incidence of kidney disease and relatd illnesses such as hypertension and diabetes.
- Employment for all other health technologists and technicians is expected to grow slightly slower than all middle-skill occupations in New York City.

HEALTH TECHNOLOGISTS AND TECHNICIANS, ALL OTHER

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

LICENSED PRACTICAL AND LICENSED VOCATIONAL NURSES

MODERATE SUPPLY-MODERATE DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Licensed practical and licensed vocational nurses	13,930	20%	$41,950	$54,030
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Care for ill, injured, or convalescing patients or persons with disabilities in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required.

OTHER TITLES

Nursing Attendant, Nursing Auxiliary A, Senior Nursing Attendant, Certified Nursing Attendant, Intake Nurse

IN-DEMAND SKILLS

Patient Care, Cardiopulmonary Resuscitation (CPR), Infection Control, Patient Preparation, Patient/Family Education and Instruction, Pediatrics, Blood Pressure Checking, Patient Flow, Electrocardiogram (EKG/ECG), Injections

IN-DEMAND CERTIFICATIONS

First Aid CPR/AED, IV Certification, Licensed Vocational Nurse, Certified Infection Control, Home Care Certificate, American Heart Association Certificate, Basic Cardiac Life Support Certification, Home Health Aide, Phlebotomy Certification, Certified Coding Specialist

TOP ADVERTISING EMPLOYERS

Montefiore Medical Center, Lutheran Healthcare Group, Bayada Home Health Care, Northwell Health, Visiting Nurse Service of New York, DaVita Incorporated, Weill Cornell Medical College, NYU Lutheran Medical Center, New York Presbyterian Hospital, Mount Sinai Medical Center

KEY FINDINGS

- This occupation ranks moderate in both supply and demand, indicating balance in this occupation's labor market.
- The supply indicators are low or moderate with the exception of licenses issued as of 2017, the change in associate degrees and unemployment insurance claimants between 2011 and 2015, and ACS employment in both 2011 and 2015.
- Available demand indicators are moderate with the exception of 1199 union placements.
- According to the New York State Department of Education's Office of Licensed Professions, there are currently 10 schools in New York City registered to offer programs that lead to this license.
- Employment for this occupation is expected to grow somewhat faster than the average for all middle-skill occupations in New York City.
- LPNs and LVNs will be needed in residential care facilities and home health environments to care for an aging population.
- LPNs and LVNs will be needed to assist and care for patients with chronic conditions —such as diabetes and obesity—in skilled nursing and other extended care facilities.
- Many procedures that once could be done only in hospitals are now being done outside of hospitals, creating demand in other settings, such as outpatient care centers.

LICENSED PRACTICAL AND LICENSED VOCATIONAL NURSES

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

MAGNETIC RESONANCE IMAGING TECHNOLOGISTS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Magnetic resonance imaging technologists	540	27%	$64,040	$84,340
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Operate Magnetic Resonance Imaging (MRI) scanners. Monitor patient safety and comfort, and view images of area being scanned to ensure quality of pictures. May administer gadolinium contrast dosage intravenously. May interview patient, explain MRI procedures, and position patient on examining table. May perform data entry, such as patient history, anatomical area to be scanned, orientation specified, and position of entry.

OTHER TITLES

MRI Technician, CT Technician, CT Technologist, CAT Scan Technician

IN-DEMAND SKILLS

Cardiopulmonary Resuscitation (CPR), Radiology, Scanners, Patient Safety, Aseptic, Scheduling, Nuclear Medicine, Patient Care, Radiography, Radiologic Technology

IN-DEMAND CERTIFICATIONS

American Registry of Radiologic Technologist (ARRT) Certification, First Aid CPR/AED, Registered Radiologic Technologist

TOP ADVERTISING EMPLOYERS

Montefiore Medical Center, Alliance Healthcare Services, Continuum Health Partners, Cornell University, Mount Sinai Medical Center, Alliance Imaging Incorporated, Centura Health, Child Mind Institute, Insight Imaging

KEY FINDINGS

- This occupation ranks low in supply and demand, indicating that there is a current balance in this occupation's labor market.
- The only available supply indicator is citywide employment, suggesting there may at some point be a need for additional training programs or that proprietary schools mainly fill this role.
- All available demand indicators are low with the exception of the projected percentage job change between 2012 and 2022.
- Employment of MRI technologists is projected to grow twice as fast as the average for all middle-skill occupations in New York City.
- As the population grows older, there will be an increase in medical conditions, such as cancer and Alzheimer's disease, which require imaging as a tool for making diagnoses.
- However, growth of demand for MRI technologists may be weaker than expected as many medical facilities and third-party payers encourage less costly and invasive imaging technologies, like ultrasound.

MAGNETIC RESONANCE IMAGING TECHNOLOGISTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

MEDICAL ASSISTANTS

HIGH SUPPLY-MODERATE DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Medical assistants	11,330	29%	$25,770	$34,860
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Perform administrative and clinical duties under a physyican's direction: scheduling appointments, maintaining medical records, billing, and coding information for insurance; taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications.

OTHER TITLES

Medical Office Assistant, Certified Medical Assistant, FGP Medical Assistant, Clinical Assistant, Practice Medical Assistant, Medical Assistant I, Medical Assistant II, Off-site Medical Assistant

IN-DEMAND SKILLS

Vital Signs, Patient Care, Patient Assistance, Scheduling, Phlebotomy, Patient Flow, Electrocardiogram (EKG) Infection Control, Patient Preparation

IN-DEMAND CERTIFICATIONS

Certified Medical Assistant, First Aid, CPR/AED, Phlebotomy, Basic Cardiac Life Support, Security Clearance, Emergency Medical Technician (EMT), Registered Health Information Technician/Administrator, Certified Nursing Assistant

TOP ADVERTISING EMPLOYERS

NYU Langone Medical Center, Northwell Health, Mount Sinai, Continuum Health Partners, AdvantageCare Physicians, NYU School of Medicine, NYC Department of Health and Mental Hygiene, Weill Cornell Medical College, Planned Parenthood, Urban Health Plan

KEY FINDINGS

- This occupation ranks high in supply and moderate in demand, indicating that there may be an imbalance in the labor market for medical assistants.
- Most supply indicators ranked high.
- Most available demand indicators are low or moderate with the exception of the projected percent change in jobs between 2012 and 2022.
- Employment of medical assistants is projected to grow more than twice as fast as the average for all middle-skill occupations in New York City.
- The growth of the aging baby-boom population will continue to increase demand for preventive medical services, which are often provided by physicians. As their practices expand, physicians will hire more assistants to perform routine administrative and clinical duties, allowing the physicians to see more patients.
- An increasing number of group practices, clinics, and other healthcare facilities need support workers, particularly medical assistants, to complete both administrative and clinical duties.
- Medical assistants work mostly in primary care, a steadily growing sector of the healthcare industry.

MEDICAL ASSISTANTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

MEDICAL RECORDS AND HEALTH INFORMATION TECHNICIANS

HIGH SUPPLY-HIGH DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Medical records and health information technicians	3,160	16%	$33,070	$45,910
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Compile, process, and maintain patient medical records consistent with medical, administrative, ethical, legal, and regulatory requirements of the healthcare system. Process, maintain, compile, and report information according to industry's coding system.

OTHER TITLES

Medical Coder, Inpatient Coder, Medical Biller, Medical Records Clerk, Medical Records Coder, Medical Billing Specialist, Drug Coordinator, Medical Records Specialist, Clinical Documentation Consultant, Account Coding Specialist

IN-DEMAND SKILLS

Medical Coding, Health Information Technology, Customer Billing, Microsoft Excel, ICD-9 Coding, Medical Records, CPT Coding, Inpatient Coding, Medical Record Coding, Health Information Management

IN-DEMAND CERTIFICATIONS

Registered Health Information Technician, Registered Health Information Administrator, Certified Professional Coder, Certified Coding Specialist, Medical Billing Coding Certification, Certified Coding Associate, Certified Professional Coder

TOP ADVERTISING EMPLOYERS

Northwell Health, Weill Cornell Medical College, Memorial Sloan Kettering, NYU Langone Medical Center, Mount Sinai, Continuum Health Partners, UnitedHealth Group, Healthfirst, New York Presbyterian Hospital, Healthport

KEY FINDINGS

- This occupation ranks high in both supply and demand, indicating balance in this occupation's labor market at this time.
- Supply indicators are low or moderate with the exception of CUNY certificate recipients (completions in 2011 and 2015 and the average change in completions between 2011 and 2015), the number of workforce provider certifications earned in 2015, and the change in unemployment insurance claimants between 2011 and 2015 (high).
- More than half of the demand indicators ranked high.
- Employment of medical records and health information technicians is projected to grow somewhat faster than the average for all middle-skill occupations in New York City.
- An aging population will require more medical services, and health information technicians will be needed to organize and manage the older generations' health information data.
- Additional records, coupled with widespread use of electronic health records (EHRs) by all types of healthcare providers, will lead to an increased need for technicians to organize and manage the associated information in all areas of the healthcare industry.

MEDICAL RECORDS AND HEALTH INFORMATION TECHNICIANS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

MEDICAL SECRETARIES

MODERATE SUPPLY-MODERATE DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Medical secretaries	3,730	29%	$35,130	$46,510
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Perform secretarial duties using specific knowledge of medical terminology and hospital, clinic, or laboratory procedures. Duties may include scheduling appointments, billing patients, and compiling and recording medical charts, reports, and correspondence.

OTHER TITLES

Medical Receptionist, Unit Clerk, Office Assistant, Administrative Assistant, Front Desk Coordinator, Unit Secretary, Receptionist, Front Desk Supervisor, Medical Administrative Assistant

IN-DEMAND SKILLS

Administrative Support, Scheduling, Appointment Setting, Medical Terminology, Customer Service, Customer Billing, MS Office, Secretarial Skills, Microsoft Excel, Patient Care

IN-DEMAND CERTIFICATIONS

Certified Medical Assistant, Medical Secretary, Registered Health Information Technician/ Administrator, Crisis Intervention, Emergency Medical Technician (EMT), Medical Billing and Coding Certification, Clinical Laboratory Technologist, Phlebotomy Certification

TOP ADVERTISING EMPLOYERS

Memorial Sloan Kettering, NYU Langone Medical Center, Hospital for Special Surgery, Northwell Health, Fresenius, Volunteers of America, Mount Sinai, Weill Cornell Medical College, DaVita Incorporated, Continuum Health Partners

KEY FINDINGS

- This occupation ranks moderate in both supply and demand, indicating balance in this occupation's labor market at this time.
- All supply indicators are low with the exception of the number of associate degrees conferred in 2011 (moderate), workforce provider certifications in 2015 (high), and unemployment insurance claimants in 2011 (high).
- All demand indicators are low or moderate with the exception of the projected percent change in jobs between 2012 and 2022.
- Employment is projected to grow twice as fast as the average for all middle-skill occupations in New York City.
- The growth of the aging baby-boom population will continue to increase demand for preventive medical services, which are often provided by physicians. As their practices expand, physicians may hire more secretaries to perform routine administrative functions.
- However, many employers use medical assistants in a hybrid administrative and clinical role, which suggests that demand for secretaries, who lack clinical training, may wane.

MEDICAL SECRETARIES

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	Low
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	Moderate
Associate degrees, 2015	Low
Associate degrees, average 2011-15	Low
Associate degrees, change, 2011-15	Low
Training provider class size, 2015	Low
Unemployment insurance claimants, 2011	High
Unemployment insurance claimants, 2015	Low
Unemployment insurance claimants, change 2011-15	Low
Wage change, 2011-15	
Workforce providers certifications, 2015	High
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	Low
1199SEIU placements, 2015	Low
Ad volume, 2011	Moderate
Ad volume, 2015	Moderate
Ad volume change, 2011-15	Moderate
Average annual openings, 2012-22	Low
Average ad postings, 2011-15	Moderate
Long-term projection, #	Low
Long-term projection, %	High

NUCLEAR MEDICINE TECHNOLOGISTS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Nuclear medicine technologists	470	13%	$69,440	$81,720
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Prepare, administer, and measure radioactive isotopes in therapeutic, diagnostic, and tracer studies using a variety of radioisotope equipment. Prepare stock solutions of radioactive materials and calculate doses to be administered by radiologists. Execute blood volume, red cell survival, and fat absorption studies following standard laboratory techniques.

OTHER TITLES

Practice Nuclear Medicine Technologist, Nuclear Medicine Scientist, Nuclear Technologist, Certified Nuclear Medicine Technologist, Nuclear Medicine Technician

IN-DEMAND SKILLS

Nuclear Medicine, Radiopharmaceuticals, Labeling, Scanner, Therapy, Patient Positioning, Radiology, Patient Follow-up, Patient Care, Nuclear Medicine Procedures, Information Systems

IN-DEMAND CERTIFICATIONS

Certified Nuclear Medicine Technologist, American Registry of Radiologic Technologist (ARRT), Registered Radiologic Technologist, Mobile Electronics, Certified Professional

TOP ADVERTISING EMPLOYERS

Northwell Health, NYU Langone Medical Center, Cardiac Imaging Corporation, Digirad Corporation, Montefiore Medical Center

KEY FINDINGS

- This occupation ranks low in both supply and demand, indicating balance in this occupation's labor market.
- The only available supply indicators are citywide employment and unemployment insurance claimants in 2011, indicating there may be a need for additional training programs or that proprietary schools mainly fill this role.
- All available demand indicators are low.
- Employment of nuclear medicine technologists is projected to grow about the same as the average for all middle-skill occupations in New York City.
- An aging population may lead to the need for nuclear medicine technologists who can provide imaging to patients with certain medical conditions, such as heart disease.
- Employment growth may be weakened as many medical facilities and third-party payers encourage the use of less costly, noninvasive imaging technologies, such as ultrasound.

NUCLEAR MEDICINE TECHNOLOGISTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

NURSING ASSISTANTS

HIGH SUPPLY-HIGH DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Nursing assistants	40,910	13%	$32,470	$37,250
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Provide patient care under direction of nursing staff. Perform duties such as feed, bathe, dress, groom, and move patients, and change linens. Transfer or transport patients.

OTHER TITLES

Patient Care Technician, Patient Care Associate, Nurse Assistant, Patient Care Assistant, Clinical Technician, Nurse Aide, Clinical Assistant, Patient Support Technician,

IN-DEMAND SKILLS

Patient Care, Vital Signs Measurement, Phlebotomy, Electrocardiogram (EKG/ECG), Activities of Daily Living (ADLS), Bathing, Patient Assistance, Venipuncture, Infection Control, Specimen Collection

IN-DEMAND CERTIFICATIONS

Certified Nursing Assistant, Patient Care Technician, Home Health Aide, Phlebotomy Certification, First Aid CPR/AED, Basic Cardiac Life Support, Certified Medical Assistant, Personal Care Assistant (PCA), Registered Central Service Technician, Certified Sterile, Processing Technician, Patient Care Assistant

TOP ADVERTISING EMPLOYERS

Northwell Health, NYU Langone Medical Center, Memorial Sloan Kettering Cancer Center, Archcare, Mount Sinai Medical Center, Continuum Health Partners, Montefiore Medical Center, Hospital For Special Surgery, Atria Senior Living

KEY FINDINGS

- This occupation ranks high in both supply and demand, indicating balance in this occupation's labor market at this time.
- The supply indicators that rank high are citywide employment, CUNY certificate program completions, the number of NYC Department of Education high schools offering certifications, and training provider class size.
- Almost half of the demand indicators rank high.
- Employment of nursing assistants is projected to grow about the same as the average for all middle-skill occupations in New York City.
- As the baby-boom population ages, nursing assistants will be needed to assist and care for elderly patients in long-term care facilities, such as nursing homes.
- Demand for nursing assistants may be constrained by the fact that many nursing homes rely on government funding. Cuts to programs, such as Medicare and Medicaid, may affect patients' ability to pay for nursing home care.
- Shifts in federal and state funding are increasing the demand for home and community-based long-term care, which might lead to increased opportunities for nursing assistants in home health and community rehabilitation services.

NURSING ASSISTANTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, average 2011-15	
Associate degrees, 2015	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

OCCUPATIONAL THERAPY AIDE

INDETERMINATE SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Occupational therapy aides	-	-	$21,230	$28,960
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Under close supervision of an occupational therapist or occupational therapy assistant, perform delegated, selected, routine tasks. These duties include preparing patient and treatment room.

OTHER TITLES

Rehabilitation Aide, Rehabilitation Technician

IN-DEMAND SKILLS

Rehabilitation, Patient Transportation and Transfer, Patient Care, Therapy, Clerical Duties, Taking Messages, Data Entry, Cleaning, Repair, Physical Therapy, Patient Preparation, Activities of Daily Living (ADLS)

IN-DEMAND CERTIFICATIONS

First Aid CPR/AED, Certified HIPAA Professional, Certified Nursing Assistant

TOP ADVERTISING EMPLOYERS

Northwell Health, Kindred Healthcare Incorporated, New York Presbyterian Hospital, Goodwill, HealthPRO Heritage, Montefiore Medical Center, Archcare, Catholic Charities, Catholic Health Services

KEY FINDINGS

- There are no indicators of supply, which may mean that there are an insufficient number of programs to train workers or that proprietary schools mainly fill this role. It is also possible that programs that prepare individuals to be occupational therapy assistants may overlap with this occupation.
- All available demand indicators are low.
- Employment of occupational therapy aides is projected to grow more than twice as fast as the average for all middle-skill occupations in New York City. Because it is a relatively small occupation, the fast growth will result in the addition of a small number of jobs.
- Demand for occupational therapy overall is likely to grow over the coming decade in response to the health needs of the aging baby-boom generation.
- Older adults are more prone than younger people to conditions and ailments such as arthritis and stroke. These conditions can affect one's ability to perform a variety of everyday activities. Occupational therapy assistants and aides will be needed to help occupational therapists caring for these patients.
- Occupational therapy will also continue to be used to treat children and young adults with developmental disabilities, such as autism.

OCCUPATIONAL THERAPY AIDE

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

OCCUPATIONAL THERAPY ASSISTANTS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Occupational therapy assistants	670	28%	$50,300	$61,830
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Assist occupational therapists in providing treatments and procedures. May, in accordance with State laws, assist in development of treatment plans, carry out routine functions, direct activity programs, and document the progress of treatments. This is a licensed profession in New York State.

OTHER TITLES

Certified Occupational Therapy Assistant, ABA Therapist, Neurofeedback Therapist

IN-DEMAND SKILLS

Occupational Therapy, Rehabilitation, Patient Treatment, Therapy, Treatment Planning, Instruction, Scheduling, Patient/Family Education and Instruction, Patient Care, Customer Billing

IN-DEMAND CERTIFICATIONS

Certified Occupational Therapy Assistant (COTA), American Occupational Therapy Assistant (AOTA), National Board for Certification in Occupational Therapy (NBCOT), First Aid CPR/AED, Basic Cardiac Life Support Certification, Basic Computer Skills, Certified HIPAA Professional, Board Certified Behavior Analyst, American Heart Association

TOP ADVERTISING EMPLOYERS

Theracare, Metropolitan Jewish Health, Winthrop University Hospital, Kindred Healthcare Incorporated, Lutheran Healthcare Group, NYU Langone Medical Center

KEY FINDINGS

- This occupation ranks low in both supply and demand, indicating balance in this occupation's labor market.
- All supply indicators are low with the exception of the change in the number of associate degrees conferred from 2011 to 2015 (moderate) and the change in unemployment insurance claimants between 2011 and 2015 (high).
- All demand indicators are low except the projected percent change in jobs between 2012 and 2022.
- According to the New York State Department of Education's Office of Licensed Professions, there is currently one school in New York City registered to offer programs that lead to this license.
- Although projected to grow, this will amount to a small number of new jobs.
- Growth is mainly attributable to the aging baby-boom generation. Older adults are more prone to conditions and ailments such as arthritis and stroke. These conditions can affect one's ability to perform a variety of everyday activities. Occupational therapy assistants and aides will be needed to help occupational therapists.
- Occupational therapy will also continue to be used to treat children and young adults with developmental disabilities, such as autism.
- Healthcare providers (especially long-term care facilities, such as nursing homes) may employ more assistants to reduce the cost of occupational therapy.

OCCUPATIONAL THERAPY ASSISTANTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

OPHTHALMIC MEDICAL TECHNICIANS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Ophthalmic medical technicians	300	30%	$34,560	$41,830
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Assist ophthalmologists by performing ophthalmic clinical functions. Administer eye exams and medications, and instruct the patient in care and use of corrective lenses.

OTHER TITLES

Ophthalmic Technician, Surgical Coordinator, Ophthalmology Technician, Ophthalmic Aide, Ophthalmic Dispensing Trainee/Optical Assistant Split, Vision Screening Assistant, Volunteer Screening Coordinator, Ophthalmic Coordinator, Ophthalmic Dispensing Trainee/ Contact Lens Assistant, Medical Technician

IN-DEMAND SKILLS

Ophthalmology, Patient/Family Education and Instruction, Tonometry, Scheduling, Patient Care, Appointment Setting, Surgery, Refraction, Intraocular Pressure, Medical Terminology

IN-DEMAND CERTIFICATIONS

Certified Ophthalmic Assistant, Certified Ophthalmic Technician, First Aid CPR/AED, Optician, Basic Computer Skills, Medical Billing and Coding Certification, Basic Life Support Certification, CDL Class A, Certified Medical Assistant

TOP ADVERTISING EMPLOYERS

Northwell Health, AdvantageCare Physicians, Montefiore Medical Center, Mount Sinai Medical Center, NYU Langone Medical Center, Visionworks, NYC Department of Health and Mental Hygiene, Hospital For Special Surgery, Weill Cornell Medical College

KEY FINDINGS

- This occupation ranks low in supply and demand, suggesting a balance in the labor market for ophthalmic medical technicians.
- All available supply indicators rank low with the exception of the change in the number of associate degrees conferred from 2011 to 2015 (moderate).
- All demand indicators are low with the exception of the projected percent change in jobs between 2012 and 2022.
- Employment of ophthalmic laboratory technicians is projected to grow more than twice as fast as the average for all middle-skill occupations in New York City.
- Most people need vision correction at some point in their lives. As the population continues to grow and age, more people will need more vision aids, such as glasses and contact lenses, and this need will increase demand for ophthalmic laboratory technicians.

OPTHALMIC MEDICAL TECHNICIANS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

OPTICIANS, DISPENSING

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Opticians, dispensing	500	18%	$27,700	$49,040
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Design, measure, fit, and adapt lenses and frames for client according to written optical prescription or specification. Assist client with inserting, removing, and caring for contact lenses. Assist client with selecting frames. Measure customer for size of eyeglasses and coordinate frames with facial and eye measurements and optical prescription. Prepare work order for optical laboratory containing instructions for grinding and mounting lenses in frames. Verify exactness of finished lens spectacles. Adjust frame and lens position to fit client. May shape or reshape frames. This is a licensed profession in New York State.

IN-DEMAND SKILLS

Customer Service, HIPAA, Product and Service Information, Ophthalmology, Sales, Retail Setting, Dispensing Patients Medication, Inspection

IN-DEMAND CERTIFICATIONS

National Opticianry Competency

TOP ADVERTISING EMPLOYERS

Visionworks, Eye Care Centers of America, Metro Optics Eyewear

KEY FINDINGS

- Dispensing opticians rank low in both supply and demand, suggesting a balance in the labor market at this time.
- All available supply indicators rank low except the change in the number of associate degrees conferred from 2011 to 2015 (moderate) and the change in unemployment insurance claimants between 2011 and 2015 (high).
- All demand indicators are low except the projected percent change in jobs between 2012 and 2022.
- According to the New York State Department of Education, Office of Licensed Programs, there is currently one school in New York City registered to offer programs that lead to this license.
- Employment of opticians is projected to grow somewhat faster than all middle-skill occupations in New York City.
- The growth in the older population is anticipated to lead to greater demand for eye care services because people usually have more eye problems as they age.
- Increasing rates of chronic diseases that cause vision problems, like diabetes, may also increase demand for opticianry services.
- Optometrists and ophthalmologists are increasingly offering glasses and contact lenses to their patients as a way to expand their businesses, leading to a greater need for opticians in those settings.
- Employment growth may be constrained by increases in productivity that allow opticians to serve more customers.

OPTICIANS, DISPENSING

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

PHARMACY TECHNICIANS

MODERATE SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Pharmacy technicians	6,310	27%	$23,590	$34,820
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Prepare medications under the direction of a pharmacist. May measure, mix, count out, label, and record amounts and dosages of medications according to prescription orders.

OTHER TITLES

Certified Pharmacy Technician, Pharmacy Coordinator, Medication Coordinator, Patient, Service Representative, Pharmacy Automation Coordinator, Pharmacy Pre-authorization Coordinator

IN-DEMAND SKILLS

Labeling, Retail Setting, Pharmacist Assistance, Customer Service, Inventory Control, Inventory Management, HIPAA, Customer Billing, Scheduling

IN-DEMAND CERTIFICATIONS

Certified Pharmacy Technician, Pharmacy Technician Certification Board (PTCB), Pharmacy Technology, Basic Computer Skills, First Aid CPR/AED, Security Clearance, Certified Occupational Therapy Assistant (COTA), Certified Professional Coder

TOP ADVERTISING EMPLOYERS

CVS Health, Northwell Health, New York Presbyterian Hospital, NYU Langone Medical Center, Memorial Sloan Kettering Cancer Center, Rite Aid Corporation, Mount Sinai Medical Center, New York Methodist Hospital, EmblemHealth

KEY FINDINGS

- This occupation ranks moderate in supply and low in demand, indicating an imbalance in the labor market at this time.
- All supply indicators are low except CUNY certificate recipients (average completions between 2011-2015, completions in 2011 and 2015) and the change in the number of associate degrees conferred from 2011 to 2015.
- All demand indicators were low except the projected percent change in jobs (moderate).
- Employment for pharmacy technicians is projected to grow twice as fast as all middle-skill occupations in New York City.
- The population is aging, and older people typically use more prescription medicines than younger people.
- Higher rates of chronic disease among all age groups also will lead to increased demand for prescription medications.
- Advances in pharmaceutical research will allow for more prescription medications to be used to fight diseases.
- Pharmacy technicians may be needed to take on a greater role in pharmacy operations because pharmacists are increasingly performing more patient care activities like giving flu shots. Technicians will need to perform tasks including collecting patient information, preparing more types of medications, and verifying the work of other technicians—tasks formerly carried out by pharmacists.

PHARMACY TECHNICANS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

PHLEBOTOMISTS

MODERATE SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Phlebotomists	1,590	26%	$30,640	$43,110
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Draw blood for tests, transfusions, donations, or research. May explain the procedure to patients and assist in the recovery of patients with adverse reactions.

OTHER TITLES

Phlebotomy Services Representative, Phlebotomy Technician, Phlebotomy Coordinator, Phlebotomy Supervisor, Phlebotomy Department Service Representative, Venipuncture Technician, Laboratory Aide-Phlebotomy

IN-DEMAND SKILLS

Phlebotomy, Venipuncture, Labeling, Specimen Collection, Customer Service, Blood Draws, Blood Collection, Interaction with Patients, Data Entry, Microsoft Office

IN-DEMAND CERTIFICATIONS

Phlebotomy Certification, American Society for Clinical Pathology (ASCP) Certification, Certified Medical Assistant, Certified Nursing Assistant, First Aid CPR/AED, Basic Cardiac Life Support, Certified Coding Specialist, Registered Health Information Technician/Administrator

TOP ADVERTISING EMPLOYERS

Laboratory Corporation of America, Quest Diagnostics Incorporated, Fresenius, Northwell Health, Memorial Sloan Kettering Cancer Center, Mount Sinai Medical Center, BioReference Laboratories, NYU Langone Medical Center, Biolaboratories, New York Presbyterian Hospital

KEY FINDINGS

- This occupation ranks moderate in supply and low in demand, suggesting a slight imbalance. However, a phlebotomy certification is required to qualify for many other positions.
- Phlebotomists typically work in a diagnostic laboratories. People with a phlebotomy certification tend to work in other healthcare settings. A search of online job ads from 2011 to 2015 reveals that, in addition to phlebotomists, a large number of employers prefer or require nursing assistants, medical assistants, registered nurses, and licensed practical nurses—among other occupations—to have this credential.
- All of the occupation's supply indicators were in the moderate or high range with the exception of citywide employment, the number of associate degrees conferred in 2011 and 2015, the average conferred, and training provider class size.
- All demand indicators were low except the projected percent change in jobs.
- Employment of phlebotomists is projected to grow almost twice as fast as the average for all middle-skill occupations.
- Blood analysis remains an essential function in medical laboratories and hospitals. Barring any technological advances that might preclude the need for these specialized skills, demand for phlebotomists is expected to remain high as doctors and other healthcare professionals require bloodwork for analysis and diagnosis.

PHLEBOTOMISTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

PHYSICAL THERAPIST AIDES

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Physical therapist aides	1,460	37%	$21,740	$23,890
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Under close supervision of a physical therapist or physical therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing the patient and the treatment area.

OTHER TITLES

Rehabilitation Attendant, Therapy Aide

IN-DEMAND SKILLS

Patient Transportation and Transfer, Patient Care, Patient Preparation, Rehabilitation, Taking Messages, Surveillance, Exercise Programs

IN-DEMAND CERTIFICATIONS

First Aid CPR/AED

TOP ADVERTISING EMPLOYERS

NYU Langone Medical Center, All Sports Physical Therapy, Northwell Health, Englinton Medical PC, Hospital for Joint Diseases, Lawrence Hospital Center, AdvantageCare Physicians, ArchCare

KEY FINDINGS

- This occupation ranks low in both supply and demand, indicating a balance in the labor market at this time.
- All of the available supply indicators were low except the change in CUNY certificate completions between 2011 and 2015 (moderate), the change in the number of associate degrees conferred from 2011 to 2015 (moderate), and the change in unemployment insurance claimants between 2011 and 2015 (high).
- All of the demand indicators were low except the projected percent change in jobs.
- Employment of physical therapist aides is projected to grow almost three times faster than the average for all middle-skill occupations in New York City.
- Demand for physical therapy services is expected to increase in response to the health needs of an aging population.
- Older people are vulnerable to a number of chronic and debilitating conditions that require therapeutic services. These patients often need additional help in their treatment, making the roles of physical therapist aides vital.
- More physical therapist aides will be needed to manage the effects of chronic conditions like diabetes and obesity and help patients maintain their mobility.
- Medical and technological developments should permit an increased percentage of trauma.

PHYSICAL THERAPIST AIDES

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	Low
CTE schools offering certification	
CUNY certificate completers, average 2011-15	Low
CUNY certificate completers, 2011	Low
CUNY certificate completers, 2015	Low
CUNY certificate completers, change 2011-15	Moderate
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	Moderate
Training provider class size, 2015	
Unemployment insurance claimants, 2011	Low
Unemployment insurance claimants, 2015	Low
Unemployment insurance claimants, change 2011-15	High
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	Low
Ad volume, 2015	Low
Ad volume change, 2011-15	Low
Average annual openings, 2012-22	Low
Average ad postings, 2011-15	Low
Long-term projection, #	Low
Long-term projection, %	High

PHYSICAL THERAPIST ASSISTANTS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Physical therapist assistants	1,200	32%	$39,420	$57,360
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Assist physical therapists in providing treatments and procedures. May, in accordance with State laws, assist in the development of treatment plans, carry out routine functions, document the progress of treatment, and modify specific treatments in accordance with patient status and within the scope of treatment plans established by a physical therapist. This is a licensed profession in New York State.

OTHER TITLES

Certified Physical Therapist Assistant (CPTA)

IN-DEMAND SKILLS

Treatment, Treatment Planning, Rehabilitation, Instruction, Scheduling, Patient Care, Therapeutic Exercise, Cardiopulmonary Resuscitation (CPR)

IN-DEMAND CERTIFICATIONS

American Physical Therapy Association (APTA), First Aid CPR/AED, Basic Cardiac Life Support, Certified HIPAA Professional, Direct Care, American Speech-Language Hearing Association, Certified Physical Therapy Assistant

TOP ADVERTISING EMPLOYERS

NYU Langone Medical Center, Northwell Health, Mount Sinai Medical Center, Continuum Health Partners, Memorial Sloan Kettering Cancer Center, Visionworks, Healthpro Rehabilitation, Kindred Healthcare Incorporated

KEY FINDINGS

- This occupation ranks low in both supply and demand, indicating balance in the labor market at this time.
- All of the available supply indicators were low except the change in the number of associate degrees conferred from 2011 to 2015 (moderate) and the change in unemployment insurance claimants between 2011 and 2015 (high).
- All of the demand indicators were low except the projected percent change in jobs (high).
- There are currently two schools in New York City registered to offer programs that lead to this license.
- Employment of physical therapist assistants is projected to grow twice as fast as the average for all middle-skill occupations.
- Demand for physical therapy services is expected to increase in response to the needs of an aging population. Older people are vulnerable to a number of conditions that require therapeutic services. These patients often need additional help in their treatment, making the roles of physical therapist assistants vital.
- More physical therapist assistants will be needed to manage the effects of chronic conditions like diabetes and obesity and help patients maintain their mobility.
- Medical and technological advances should permit an increased percentage of trauma victims and newborns with birth defects to survive, creating added demand for therapy and rehabilitative services.

PHYSICAL THERAPIST ASSISTANT

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

PSYCHIATRIC TECHNICIANS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Psychiatric technicians	550	3%	$35,850	$45,000
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Care for individuals with mental or emotional conditions or disabilities, following the instructions of physicians or other health practitioners. Monitor patients' physical and emotional well-being and report to medical staff. May participate in rehabilitation and treatment programs, help with personal hygiene, and administer oral or injectable medications.

OTHER TITLES

Mental Health Technician, Behavioral Health Associate, Mental Health Worker, Dispensary Technician, Behavioral Health Technician, Psychiatric Technician Behavioral Services Unit

IN-DEMAND SKILLS

Mental Health, Life Support, Behavioral Health, Activities of Daily Living (ADLS), Crisis Intervention, Psychology, Bathing, Patient Assistance, Patient Bathing

IN-DEMAND CERTIFICATIONS

Basic Cardiac Life Support, Certification, Emergency Medical Technician (EMT), Direct Care

TOP ADVERTISING EMPLOYERS

New York Presbyterian Hospital, Northwell Health, Bowery Residents Committee, Montefiore Medical Center, Bayley Seton Hospital, Kingsbrook Jewish Medical Center, NYC Health and Hospitals

KEY FINDINGS

- This occupation ranks low in supply and demand, indicating a balance in the labor market for psychiatric technicians at this time.
- All of the available supply indicators are low with the exception of the change in the number of associate degrees conferred from 2011 to 2015 (moderate).
- All of the available demand indicators are low.
- Employment of psychiatric technicians and aides is projected to grow more slowly than the average for all middle-skill occupations in New York City.
- Cognitive mental disorders, such as Alzheimer's disease and dementia, are more likely to occur among older persons. As the nation's population ages and people live longer, demand for psychiatric technicians and aides in residential facilities is expected to rise so that these workers can care for patients affected by such disorders.
- Psychiatric technicians and aides also will be needed in correctional facilities, to care for the aging prisoner population.
- More psychiatric technicians and aides will be needed in residential treatment facilities and in outpatient care centers to care for patients with developmental disabilities, mental illness, and substance abuse problems. There is a long-term trend toward treating psychiatric patients in community-based settings.

PSYCHIATRIC TECHNICIANS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, average 2011-15	
Associate degrees, 2015	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

RADIATION THERAPISTS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Radiation therapists	690	26%	$65,020	$94,880
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Provide radiation therapy to patients as prescribed by a radiologist according to established practices and standards. Duties may include reviewing prescription and diagnosis; acting as liaison with physician and supportive care personnel; preparing equipment, such as immobilization, treatment, and protection devices; and maintaining records, reports, and files. May assist in dosimetry procedures and tumor localization.

OTHER TITLES

CT Therapist, Dosimetrist

IN-DEMAND SKILLS

Radiation Therapy, Radiation Oncology, Staff Management, Radiology, Calculation, Appointment Setting, Patient Treatment, Treatment Planning, Brachytherapy, Customer Billing

IN-DEMAND CERTIFICATIONS

American Registry of Radiologic Technologist (ARRT), Registered Radiologic Technologist

TOP ADVERTISING EMPLOYERS

Mount Sinai Medical Center, Vantage Oncology Centers Of New York, Memorial Sloan Kettering Cancer Center, New York Treatment Centers in Brooklyn, New York Treatment Centers in Queens, Weill Cornell Medical Center

KEY FINDINGS

- This occupation ranks low in both supply and demand, indicating balance in the occupation's labor market at this time.
- All of the available supply indicators are low except the change in the number of associate degrees conferred from 2011 to 2015 (moderate).
- All of the demand indicators are low except except the projected percent change in jobs (moderate).
- Employment of radiation therapists is projected to grow almost twice as fast as average for all middle-skill occupations in New York City. However, because it is a small occupation, the fast growth will result in only a small number of new jobs.
- The risk of cancer increases as people age, so an aging population may increase demand for radiation therapists.
- Continued advancements in the detection of cancer and the development of more sophisticated treatment techniques may also lead to greater demand for radiation therapy.

RADIATION THERAPIST

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, average 2011-15	
Associate degrees, 2015	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

RADIOLOGIC TECHNOLOGISTS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Radiologic technologists	5,110	17%	$54,510	$72,880
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Take X-Rays and CAT scans or administer nonradioactive materials into patients' blood stream for diagnostic purposes. Includes technologists who specialize in other scanning modalities. This is a licensed profession.

OTHER TITLES

CT Technologist, Mammography Technologist, Radiology Technician, Diagnostic Radiologic Technologist, Imaging Specialist, Dental Radiographer, Technologist A, Interventional Radiological Technologist

IN-DEMAND SKILLS

Radiologic Technology, Radiology, X-Rays, Scanners, Computed Tomography (CT), Patient Positioning, Patient Care, Radiography Equipment, Patient Preparation

IN-DEMAND CERTIFICATIONS

American Registry of Radiologic Technologists (ARRT), Registered Radiologic Technologist, Basic Cardiac Life Support, First Aid CPR/AED, American Registry for Diagnostic Medical Sonography (ARDMS), Security Clearance, Advanced Cardiac Life Support (ACLS) , Pediatric Advanced Life Support (PALS), Applied Science, IV Certification

TOP ADVERTISING EMPLOYERS

Northwell Health, New York Presbyterian Hospital, NYU Langone Medical Center, US Department of Veterans Affairs, American Radiology Services Incorporated, DaVita Incorporated, Westmed Medical Group, Memorial Sloan Kettering, Continuum Health Partners, Fresenius

KEY FINDINGS

- This occupation ranks low in supply and demand, indicating a balance in the labor market for radiologic technologists at this time.
- All of the available supply indicators were low with the exception of the change in the number of associate degrees conferred from 2011 to 2015 (moderate).
- All of the demand indicators were low except the projected percent change in jobs.
- According to the New York State Department of Education, Office of Licensed Professions, there are currently six schools in New York City that are registered to offer programs that lead to this license.
- Employment of radiologic technologists is projected to grow slightly faster than the average for all middle-skill occupations in New York City.
- As the population grows older, there will be an increase in medical conditions, such as cancer and Alzheimer's disease, which require imaging as a tool for making diagnoses.
- However, employment growth of radiologic may be constrained, as many medical facilities and third-party payers encourage the use of less costly, noninvasive imaging technologies, such as ultrasound.

RADIOLOGIC TECHNOLOGISTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, average 2011-15	
Associate degrees, 2015	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

RESPIRATORY THERAPISTS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Respiratory therapists	2,460	14%	$69,580	$76,050
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Assess, treat, and care for patients with breathing disorders. Take responsibility for all respiratory care, including supervising respiratory therapy technicians. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment. This is a licensed profession in New York State.

OTHER TITLES

Respiratory Care Practitioner, Supervisor Respiratory Therapy, Registered Respiratory Therapist, Respiratory Care Practitioner

IN-DEMAND SKILLS

Respiratory Therapy, Advanced Cardiac Life Support (ACLS), Ventilation, Cardiopulmonary Resuscitation (CPR), Pulmonary Function, Patient Care, Respiratory Care, Pediatric Intensive Care Unit (PICU)

IN-DEMAND CERTIFICATIONS

Registered Respiratory Therapist, Basic Cardiac Life Support, Certified Respiratory Therapist, First Aid CPR/AED, Advanced Cardiac Life Support (ACLS), Registered Polysomnographic Technologist, Neonatal Resuscitation, Pediatric Advanced Life Support (PALS)

TOP ADVERTISING EMPLOYERS

New York Presbyterian Hospital, NYU Langone Medical Center, Memorial Sloan Kettering, Mount Sinai, Apria, Hospital for Special Surgery, Northwell Health

KEY FINDINGS

- This occupation ranks low in both supply and demand, indicating balance in this occupation's labor market.
- All of the available demand and supply indicators were low.
- There are currently three programs in New York City registered to offer a program that leads to this license.
- Employment of respiratory therapists is projected to grow about the same as all middle-skill occupations in New York City.
- Growth in the middle-aged and elderly population will lead to an increased incidence of respiratory conditions and other disorders that can damage the lungs or restrict lung function.
- The aging population will in turn lead to an increased demand for respiratory therapy services and treatments, mostly in hospitals.
- In addition, a growing emphasis on reducing readmissions in hospitals may result in more demand for respiratory therapists in nursing homes and in doctors' offices.
- Advances in preventing and detecting disease, improved medications, and more sophisticated treatments will also increase the demand for respiratory therapists. Other conditions affecting the general population, such as respiratory problems due to asthma, smoking and air pollution, along with respiratory emergencies, will continue to create demand for respiratory therapists.

RESPIRATORY THERAPISTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

RESPIRATORY THERAPY TECHNICIANS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Respiratory therapy technicians	-	-	$46,930	$62,810
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Provide respiratory care under the direction of respiratory therapists and physicians. This is a licensed profession in New York State.

OTHER TITLES

Registered Respiratory Therapy Technician, Respiratory Fit Testing Technician, Respiratory Care Equipment Technician, Equipment Technician, Medical Technician, Certified Respiratory Therapy Technician

IN-DEMAND SKILLS

Respiratory Therapy, Peak Flow Measurements, Physical Therapy, Mechanical Ventilators, Emergency Care, Pulmonary Function, Rehabilitation, Treatment Explanation

IN-DEMAND CERTIFICATIONS

Certified Respiratory Therapist Assistant, Registered Respiratory Therapist, Basic Cardiac Life Support Certification, Certified Respiratory Therapist

TOP ADVERTISING EMPLOYERS

Northwell Health, New York Presbyterian Hospital, Mount Sinai Medical Center, Memorial Sloan Kettering Cancer Center

KEY FINDINGS

- This occupation ranks low in both supply and demand, indicating balance in this the labor market at this time.
- All of the available supply indicators were low with the exception of the change in the number of associate degrees conferred from 2011 to 2015 (moderate).
- All of the available demand indicators were low.
- According to the New York State Education Department's Office of Licensed Professions, currently, there are no schools in New York State registered to provide a program that leads to this license.
- The demand for respiratory therapy technicians is projected to decrease dramatically on a national level (data are not available for New York City). Because of the relatively small number of people in this position, however, the loss will be limited to a small number of jobs.
- Technicians are not generally involved in creating treatment plans for patients. This relatively limited scope of practice technicians may be driving a lower demand for their services.

RESPIRATORY THERAPY TECHNICIANS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

SURGICAL TECHNOLOGISTS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Surgical technologists	2,650	17%	$40,070	$56,160
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Assist in operations, under the supervision of surgeons, registered nurses, or other surgical personnel. May help set up operating room; prepare and transport patients for surgery; adjust lights and equipment; pass instruments and other supplies to surgeons and surgeon's assistants; hold retractors; cut sutures; and help count sponges, needles, supplies, and instruments.

OTHER TITLES

Operating Room Technician, Operating Room Surgical Technologist, Scrub Technician

IN-DEMAND SKILLS

Surgical Technology, Patient Care, Surgical Procedure, Inspection, Aseptic Techniques, Surgical Instruments, Labeling

IN-DEMAND CERTIFICATIONS

Certified Surgical Technologist, Certified Surgical Technician, Basic Cardiac Life Support, Operating Room Technician, Certified Scrub Technician, First Aid CPR/AED, Certified First Assistant

TOP ADVERTISING EMPLOYERS

Northwell Health, NYU Langone Medical Center, New York Presbyterian Hospital, Memorial Sloan Kettering Cancer Center, Hospital For Special Surgery, Montefiore Medical Center, Fresenius, New York Methodist Hospital, Mount Sinai Medical Center

KEY FINDINGS

- Surgical technologists rank low in both supply and demand, indicating balance in this occupation's labor market.
- All of the available supply indicators were low except for the change in the number of associate degrees conferred from 2011 to 2015 (high) and the change in unemployment insurance claimants between 2011 and 2015 (high).
- All of the demand indicators were low except the projected percent change in jobs.
- Employment of surgical technologists is projected to grow slightly faster than the average for all middle-skill occupations in New York City.
- Advances in medical technology have made surgery safer, and more operations are being done to treat a variety of illnesses and injuries.
- The aging of the population is expected to increase the need for surgical technologists, because older people usually require more operations.

SURGICAL TECHNOLOGISTS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	Low
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	Low
Associate degrees, 2015	Low
Associate degrees, average 2011-15	Low
Associate degrees, change, 2011-15	High
Training provider class size, 2015	
Unemployment insurance claimants, 2011	Low
Unemployment insurance claimants, 2015	Low
Unemployment insurance claimants, change 2011-15	High
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	Low
1199SEIU placements, 2015	Low
Ad volume, 2011	Low
Ad volume, 2015	Low
Ad volume change, 2011-15	Low
Average annual openings, 2012-22	Low
Average ad postings, 2011-15	Low
Long-term projection, #	Low
Long-term projection, %	Moderate

VETERINARY TECHNOLOGISTS AND TECHNICIANS

LOW SUPPLY-LOW DEMAND

OCCUPATION	2017 EMPLOYMENT	PROJECTED EMPLOYMENT CHANGE	ANNUAL WAGE	
			ENTRY	MEDIAN
Veterinary technologists and technicians	1,270	22%	$31,390	$43,320
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

WHAT THEY DO

Perform medical tests in a laboratory environment for use in the treatment and diagnosis of diseases in animals. Prepare vaccines and serums for prevention of diseases. Prepare tissue samples, take blood samples, and execute laboratory tests, such as urinalysis and blood counts. Clean and sterilize instruments and materials and maintain equipment and machines. May assist a veterinarian during surgery. This is a licensed profession in New York State.

OTHER TITLES

Animal Technician, Animal Science Technician, Animal Health Technician I, Animal Health Technician II

IN-DEMAND SKILLS

Anesthesiology, Animal Health, Euthanasia, Surgery, Scheduling, Animal Care, Patient Care, Injections, Postoperative Care, X-Rays

IN-DEMAND CERTIFICATIONS

Veterinary Technician, Laboratory Animal Technician, Certified Veterinary Technician, Animal Science, Laboratory Animal Technologist, Certified Euthanasian Technician, American Association for Laboratory Animal Science (AALAS)

TOP ADVERTISING EMPLOYERS

ASPCA, Cornell University Hospital for Animals, Rockefeller University, Weill Cornell Medical College, York University, Banfield Pet Hospital, NYU Langone Medical Center, Montefiore Medical Center, Northside Veterinary Clinic, Clinton Hill Animal Clinic

KEY FINDINGS

- Veterinary technologists and technicians rank low in both supply and demand, indicating balance in this occupation's labor market.
- All supply indicators were low except for the change in the number of associate degrees conferred from 2011 to 2015 (moderate) and the change in unemployment insurance claimants between 2011 and 2015 (high).
- All demand indicators were low except the projected percentage job change between 2012 and 2022.
- According to the New York State Department of Education, Office of Licensed Professions, there are two schools in New York City that are registered to offer programs that lead to this license.
- Employment of veterinary technologists and technicians is projected to grow faster than the average for all middle-skill occupations. in New York City. However, because this is a relatively small occupation, there will be a small number of added jobs.
- Clinics and animal hospitals are increasingly using veterinary technologists and technicians to provide more general care and perform more laboratory work, allowing them to operate more efficiently. Veterinarians are expected to continue to prefer higher skilled veterinary technologists and technicians over veterinary assistants for more complex work.

VETERINARY TECHNOLOGISTS AND TECHNICIANS

SUPPLY AND DEMAND INDICATORS

KEY							
Low		Moderate		High		Indeterminate	

SUPPLY INDICATORS	
Citywide employment, 2015	
CTE schools offering certification	
CUNY certificate completers, average 2011-15	
CUNY certificate completers, 2011	
CUNY certificate completers, 2015	
CUNY certificate completers, change 2011-15	
Licenses issued, 2017	
Associate degrees, 2011	
Associate degrees, 2015	
Associate degrees, average 2011-15	
Associate degrees, change, 2011-15	
Training provider class size, 2015	
Unemployment insurance claimants, 2011	
Unemployment insurance claimants, 2015	
Unemployment insurance claimants, change 2011-15	
Wage change, 2011-15	
Workforce providers certifications, 2015	
ACS occupational employment, 2011	
ACS occupational employment, 2015	

DEMAND INDICATORS	
1199SEIU placements, 2011	
1199SEIU placements, 2015	
Ad volume, 2011	
Ad volume, 2015	
Ad volume change, 2011-15	
Average annual openings, 2012-22	
Average ad postings, 2011-15	
Long-term projection, #	
Long-term projection, %	

THE SUPPLY OF AND DEMAND FOR OTHER MIDDLE-SKILL OCCUPATIONS IN NEW YORK CITY

Table 4 shows the rankings for 12 other occupational groups that included occupations qualifying as middle-skill. The findings are presented in aggregate expressed as an average of all occupations included in the group. So, for example, the results for Personal Care occupations show the supply and demand ratings for embalmers; funeral attendants; morticians, undertakers, and funeral directors; and residential advisors collectively, relative to the other major occupational groups. It is important to note that there may be variations in the supply and demand rankings of individual occupations within a major occupational group. These variations would be masked by the average score. For example, Installation, Maintenance and Repair occupations are in moderate supply overall. But within this group, electronic equipment installers and repairers (motor vehicles) are in high supply; automotive service technicians and mechanics; first-line supervisors of mechanics, installers, and repairers; and heating, air conditioning, and refrigeration mechanics and installers are in moderate supply; and the other occupations are in low supply.

Occupation groups that are in balance between supply and demand appear in the shaded boxes that appear on the diagonal from the upper right to the lower left corner of the figure.

The major takeaway from these findings is labor supply and demand are imbalanced in half of the 12 occupational groups. Occupation groups for which supply appears to exceed demand—risking an oversupply of candidates for the available jobs —include Installation, Maintenance, and Repair; Personal Care and Service; Protective Service; and Transportation and Material Moving. Two occupation groups—Office and Administrative Support and Sales and Related —appear to be slightly undersupplied. While demand for Office and Administrative occupations seems robust, some caution should be warranted as clerical functions are increasingly being automated. The Sales and Related occupations group only included one occupation—telemarketers.

The following section contains a list of occupations in each of the 12 other groups, along with labor market information including current employment in New York City, projected growth from 2012 to 2022, and entry and median wages.

Table 4. The Supply of and Demand for Middle-Skill Occupations in Other Occupational Groups

		DEMAND		
		LOW	MODERATE	HIGH
SUPPLY	HIGH			COMPUTER AND MATHEMATICAL EDUCATION AND LIBRARY
	MODERATE	INSTALLATION, MAINTENANCE, AND REPAIR PERSONAL CARE AND SERVICE PROTECTIVE SERVICE TRANSPORTATION AND MATERIAL MOVING	CONSTRUCTION AND EXTRACTION	
	LOW	ARCHITECTURE & ENGINEERING LIFE, PHYSICAL, AND SOCIAL SCIENCE PRODUCTION	OFFICE AND ADMINISTRATIVE SUPPORT SALES AND RELATED	

ARCHITECTURE AND ENGINEERING

LOW SUPPLY-LOW DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Aerospace engineering and operations technicians	-	-	-	-
Civil engineering technicians	690	1.8%	$34,070	$58,580
Electrical and electronics engineering technicians	-	-2.8%	-	-
Electro-mechanical technicians	-	-	-	-
Environmental engineering technicians	400	39.3%	$34,670	$45,880
Industrial engineering technicians	-	-	$28,690	$31,200
Mechanical engineering technicians	-	18.5%	$37,770	$60,430
Engineering technicians, except drafters, all other	590	6.7%	$43,370	$58,800
Surveying and mapping technicians	-	-	$27,680	$36,780
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

COMPUTER AND MATHEMATICAL

HIGH SUPPLY-HIGH DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Computer User Support Specialists	18,780	21.9%	$38,040	$57,910
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

CONSTRUCTION AND EXTRACTION

MODERATE SUPPLY-MODERATE DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Construction and building inspectors	2,390	9.1%	$48,140	$68,850
Electricians	20,000	18.4%	$44,070	$85,470
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

EDUCATION AND LIBRARY

HIGH SUPPLY-HIGH DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Teacher assistants	41,790	8.0%	$20,430	$28,230
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

INSTALLATION, MAINTENANCE AND REPAIR

MODERATE SUPPLY-LOW DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Aircraft mechanics and service technicians	1,810	1.9%	$48,710	$61,650
Automotive service technicians and mechanics	8,030	4.3%	$21,070	$34,130
Computer, automated teller, and office machine repairers	2,240	6.7%	$25,700	$39,120
Electric motor, power tool, and related repairers	-	-	$52,260	$57,900
Electrical and electronics repairers, commercial and industrial equipment	480	-	$35,770	$56,020
Electronic equipment installers and repairers, motor vehicles	-	-	$20,960	$27,350
First-line supervisors of mechanics, installers, and repairers	9,790	5.5%	$56,110	$82,970
Heating, air conditioning, and refrigeration mechanics and installers	4,850	13.6%	$37,960	$62,020
Home appliance repairers	1,250	20.4%	$21,750	$34,260
Industrial machinery mechanics	930	26.1%	$38,170	$53,950
Medical equipment repairers	660	26.5%	$47,010	$63,190
Millwrights	-	14.3%	$84,780	$96,640
Radio, cellular, and tower equipment installers and repairs	-	-	-	-
Security and fire alarm systems installers	1,770	16.4%	$27,740	$45,550
Telecommunications equipment installers and repairers, except line installers	5,880	1.5%	$41,800	$75,900
Telecommunications line installers and repairers	5,810	-7.8%	$38,650	$82,540
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

LIFE, PHYSICAL, AND SOCIAL SCIENCES

LOW SUPPLY-LOW DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Chemical technicians	820	14.8%	$39,160	$48,700
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

OFFICE AND ADMINISTRATIVE SUPPORT[1]

LOW SUPPLY-MODERATE DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Court, municipal, and license clerks	2,410	2.6%	$45,060	$73,360
Dispatchers, except police, fire, and ambulance	4,920	9.9%	$28,760	$47,980
File clerks	5,010	-3.0%	$21,080	$28,130
Hotel, motel, and resort desk clerks	4,260	34.9%	$24,050	$35,920
Insurance claims and policy processing clerks	3,150	-5.6%	$36,980	$52,210
Interviewers, except eligibility and loan	6,890	7.3%	$24,930	$40,590
Loan interviewers and clerks	3,310	3.5%	$30,230	$40,890
Police, fire, and ambulance dispatchers	420	4.0%	$34,070	$45,780
Postal service clerks	2,050	-32.2%	$41,230	$58,120
Postal service mail carriers	8,480	-27.2%	$38,640	$60,670
Postal service mail sorters, processors, and processing machine operators	4,470	-30.1%	$43,480	$58,070
Reservation and transportation ticket agents and travel clerks	9,350	-16.7%	$22,830	$33,910
Secretaries and administrative assistants, except legal, medical, and executive	83,060	14.8%	$29,310	$42,070
Switchboard operators, including answering service	2,800	-11.6%	$23,670	$35,220
Word processors and typists	2,210	-25.5%	$24,740	$38,150
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

PERSONAL CARE

MODERATE SUPPLY-LOW DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Embalmers	-	-	-	-
Funeral attendants	-	-	-	-
Morticians, undertakers, and funeral directors	-	13.0%	-	-
Residential advisors	1,770	15.3%	$23,610	$31,800
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

1 Medical secretaries were excluded from this section and evaluated with the healthcare occupations.

PRODUCTION

MODERATE SUPPLY-LOW DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Chemical plant and system operators	-	-	-	-
Gas plant operators	-	-	-	-
Petroleum pump system operators, refinery operators, and gaugers	-	-	-	-
Plant and system operators, all other	-	-	-	-
Prepress technicians and workers	-	-	-	-
Tool and die makers	-	0.0%	$35,190	$51,110
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

PROTECTIVE SERVICE

MODERATE SUPPLY-LOW DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Bailiffs	2,020	-2.4%	$53,290	$69,540
Correctional officers and jailers	9,010	-0.1%	$48,520	$68,730
Fire inspectors and investigators	-	2.0%	$44,780	$50,940
Firefighters	-	1.6%	-	-
First-line supervisors of correctional officers	1,130	0.9%	$72,500	$86,710
First-line supervisors of firefighting and prevention workers	-	-	-	-
First-line supervisors of police and detectives	6,850	1.2%	$83,690	$99,780
Forest fire inspectors and prevention specialists	-	-	-	-
Police and sheriff's patrol officers	27,700	1.4%	$43,680	$68,690
Transit and railroad police	-	-	-	-
Transportation security screeners	-	4.0%	-	-
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

SALES AND RELATED

LOW SUPPLY-MODERATE DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Telemarketers	3,180	7.1%	$18,920	$24,780
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

TRANSPORTATION AND MATERIAL MOVING

MODERATE SUPPLY-LOW DEMAND

OCCUPATIONS	2017 EMPLOYMENT	2012-22 PROJECTED EMPLOYMENT CHANGE	ANNUAL SALARY	
			ENTRY	MEDIAN
Locomotive engineers	-	0.0%	-	-
Locomotive firers	-	-	-	-
Rail yard engineers, dinkey operators, and hostlers	-	-	-	-
Railroad brake, signal, and switch operators	-	-	-	-
Railroad conductors and yardmasters	-	-	-	-
Subway and streetcar operators	-	-	-	-
Traffic technicians	1,080	10.5%	$31,310	$68,910
Transportation workers, all other	600	-	$26,750	$32,110
All middle-skill occupations	355,360	14%	$28,700	$43,510

SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections 2012-2022.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

HEALTHCARE

Healthcare is the largest sector in New York City, employing over 700,000 workers. Healthcare jobs are not as sensitive to the business cycle as overall industries, gaining jobs at the height of the recession (Figure 1).

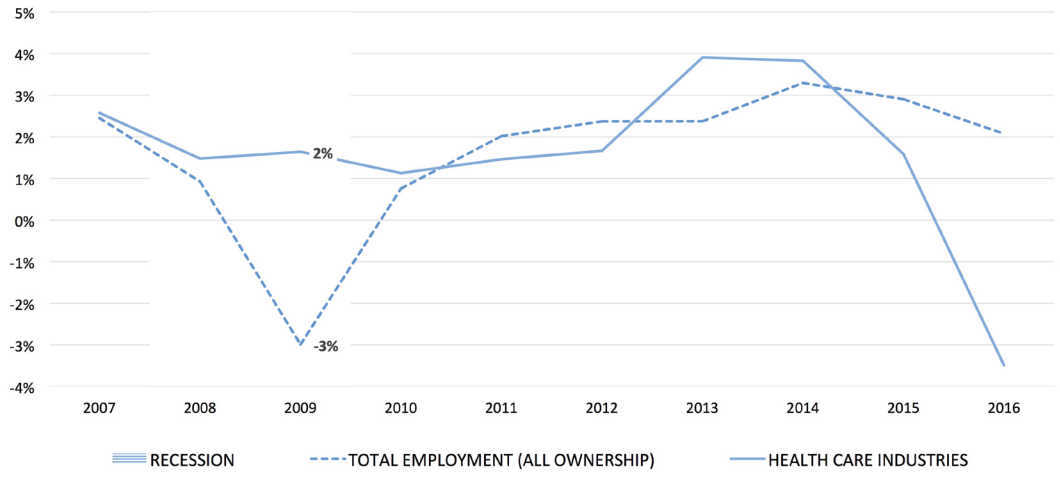
Healthcare occupations are growing and are expected to add close to 80,000 jobs by 2022. The job with the largest predicted growth (over 41,000 net jobs) is home health aides, an occupation that requires a high school diploma and pays well below the citywide median (Figure 2). In comparison, the top two middle-skill occupations predicted to add the most jobs—licensed practical and licensed vocational nurses (which pay above the median for the City) and medical assistants (which pays below), will add just 2,840 and 2,670 jobs respectively. Nonetheless, over half of the healthcare occupations predicted to add the most jobs are middle-skill. Educators and policymakers should continue to monitor demand to ensure they are not preparing too many workers.

Overall, middle-skill healthcare occupations are in balance—the relative supply of individual occupations—whether high, moderate, or low—matches employer demand. It appears that education and training providers are operating in balance with labor market demand.

There are a few instances where labor supply appears to exceed demand, namely for medical assistants, dental assistants, emergency medical technicians, pharmacy technicians, and phlebotomists. The oversupply of phlebotomists may be due to the requirement for other titles to have phlebotomy certification. One occupation appears to be undersupplied—health technologists and technicians (all other), which may reflect the need for more dialysis technicians due to the increasing incidence of kidney disease and related illnesses such as hypertension and diabetes.

However, any reforms to the ACA may change the future demand for middle-skill healthcare

Figure 1. Year Over Year Employment Change in Healthcare and the Private Sector as a Whole in New York City



SOURCE | New York State Department of Labor, Quarterly Census of Employment and Wages.

occupations. Other trends may have an impact, including new technologies that may advance patient care and an increasing focus on disease prevention.

OTHER OCCUPATIONS

Half of the other middle-skill occupation groups appear to be in balance. Occupation groups for which supply appears to exceed demand—risking an oversupply of candidates for the available jobs—include Installation, Maintenance, and Repair; Personal Care and Service; Protective Service; and Transportation and Material Moving. Two occupation groups—Office and Administrative Support and Sales and Related—appear to be slightly undersupplied. The Sales and Related occupations group only included one occupation—telemarketers. While demand for Office and Administrative occupations seems robust, some caution should be warranted as clerical functions are increasingly being automated.

RECOMMENDATIONS

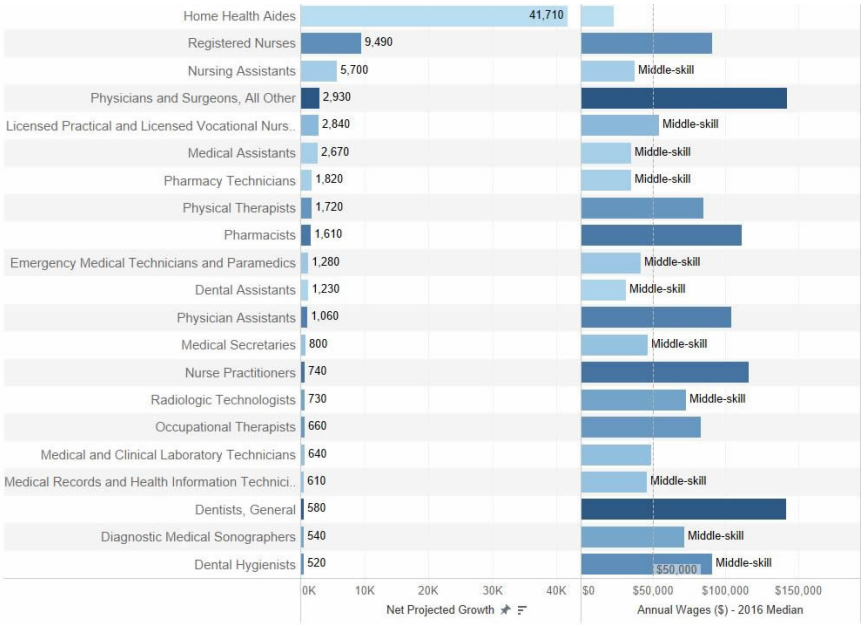
These findings suggest that education and training providers pare down or at least refrain from expanding training medical assistants, cardiovascular technologists and technicians, dental assistants, emergency medical technicians, and pharmacy technicians.[1] Similarly, providers preparing people for some positions in the Installation, Maintenance and Repair; Personal Care and Service; Production; Protective Service; and Transportation and Material Moving occupation groups should at least refrain from expanding their training programs.[2]

Conversely, the findings suggest that there are unexplored opportunities to prepare individuals in the "other" health technologists and technicians fields. According to O*NET Online, this classification encompasses neurodiagnostic and ophthalmic medical technologists, radiologic technicians, and surgical assistants. The search of "real-time" labor market information undertaken for this study indicated that there are yet unmined opportunities for hemodialysis technicians. In the non-healthcare occupations, there appears to be unmet

1 While the findings also suggest that there is an oversupply of phlebotomists, this is probably the result of industry requirements for people in other positions to hold a phlebotomy certification.

2 Additional detail on the non-healthcare occupations is available from the authors upon request.

Figure 2. Top 20 Healthcare Occupations Projected to Add the Most Jobs by 2022



SOURCE | New York State Department of Labor, Occupational Employment Statistics and Long-Term Projections.

demand for individuals with sales skills and training.[3]

Gather Workforce Intelligence. Although these findings are based on a robust methodology, they must be validated by a range of employers before education and training providers—or the funders and agencies who support them—make decisions about decreasing or increasing program enrollments. Employer interviews will shed light on their real-world experiences finding qualified candidates for those occupations in which supply and demand are out of balance.

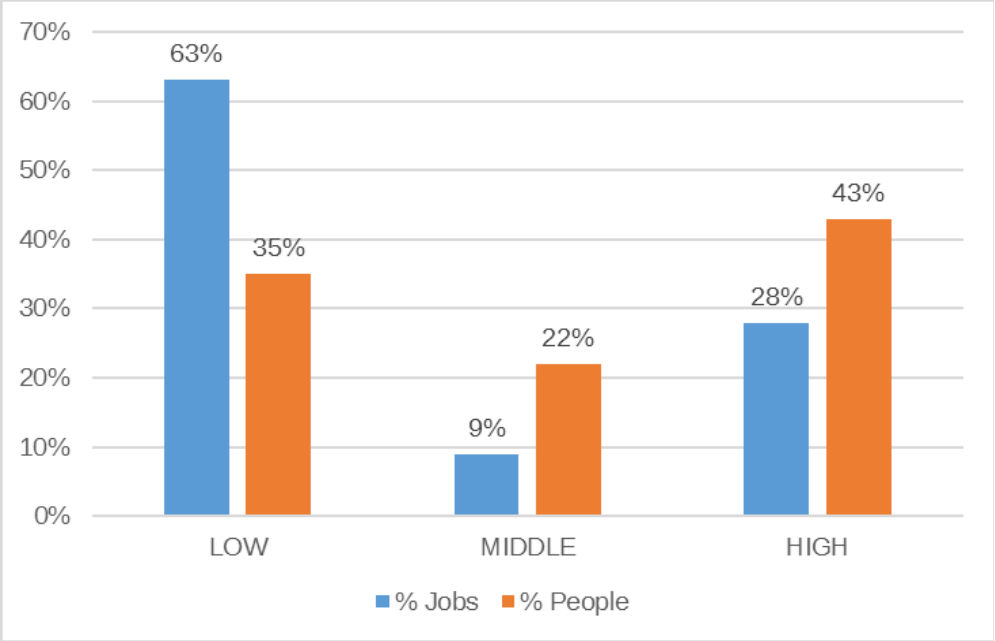
Review Skill and Credential Alignment. In addition, training providers and educational institutions should review their program offerings to ensure that they meet employers' specific certification and skill needs.

3 Office and administrative occupations also appeared to be undersupplied. While there are still many administrative job opportunities, some caution should be exercised as many of these jobs are vulnerable to offshoring and automation.

For example, a majority of New York City employers advertising for medical assistants request some certification. Most do not specify which one. Among those who specify a preferred certification, the American Association of Medical Assistants (AAMA) Certified Medical Assistant credential (CMA) is the overwhelming preference. Because the AAMA accreditation process is lengthy, rigorous, and relatively expensive, there only five accredited programs in New York City, three of which are in proprietary schools. This type of information should certainly be factored in before making any decisions to expand, contract or cease offering occupational training programs.

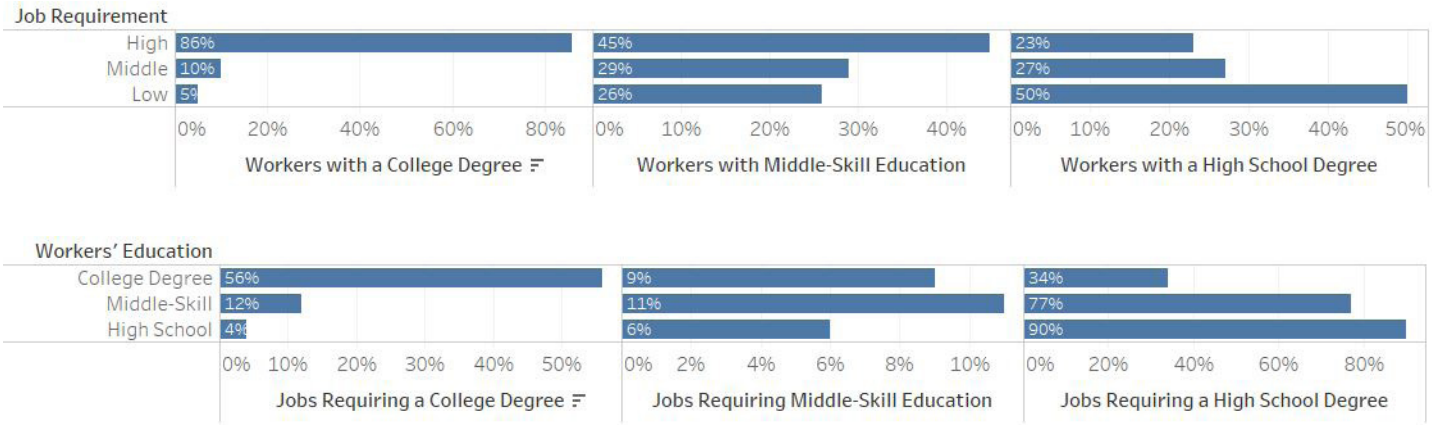
Invest in Data Collection. Some sources of supply data were unavailable or incomplete. Many providers did not record the data because they lacked the resources to collect the information. Much of the data needed on graduates from proprietary institutions was also unavailable due to lack of capacity. Licensing data are not available on a year by year basis.

Figure 3. Comparison of the Educational Attainment of the Workforce with Educational Requirements of Jobs



SOURCE | U.S. Census Bureau, American Community Survey Public Use Microdata Sample, 2015

Figure 4. Comparison of the Educational Requirements of New York City Jobs with the Educational Attainment of the Labor Force



SOURCE | U.S. Census Bureau, American Community Survey Public Use Microdata Sample, 2015

This study points to the need for improved data—accurate records of the number of individuals who obtain training, certifications, and—most importantly—employment. Government agencies and private foundations that support providers' education and training programs should provide sufficient funding to enable providers to collect accurate, meaningful data. The New York State Department of Education's offices responsible for overseeing professional licensing and proprietary schools, respectively, should be sufficiently well staffed and funded to maintain and make these data publicly available.

Target Economic Development to Industries with Middle-Skill Jobs. Of further concern is the current composition of the labor market. In New York City, the majority of jobs (63 percent) require a high school diploma or less (Figure 3). Just nine percent of jobs are middle-skill and the rest (28 percent) require a bachelor's degree or more. In contrast, only 35 percent of the workforce aged 25 and over has a high school diploma or its equivalent, 22 percent fall into the middle-skill category, and 43 percent have a college degree.

Many workers with a college degree enter middle-skill occupations, at least in part because of the lack of relevant jobs (Figure 4). Almost half of middle-skill jobs (45 percent) are held by individuals with a college degree, 29 percent are held by those with middle-skill education, and 23 percent by those with a high school diploma. This leaves middle-skill workers at a disadvantage—77 percent are in jobs requiring just a high school diploma or its equivalent.

Considering the mismatch of the current, "barbell shaped economy" and the City's labor force, efforts should be made to give priority to firms and industries with middle- as well as high-skill jobs.

Encourage Skills-Based Recruitment and Hiring. Employers in many sectors often use evidence of a four-year college degree as a first-round screening mechanism. Yet, some jobs can be done as well or better by someone with fewer years of postsecondary education. There is a growing interest in employers selecting candidates based on skill and the alignment of his or her education and training to their staffing needs. This is particularly applicable in tech-heavy industries that need web, mobile, and software developers and people skilled at network administration and information security. New efforts can draw inspiration from such initiatives as Skillful, a joint initiative of the Markle Foundation and Microsoft and the US Department of Labor-funded TechHire projects.

APPENDIX A. SUPPLY AND DEMAND INDICATORS BY DATA SOURCE

HEALTHCARE SUPPLY INDICATORS

U.S. Census Bureau 2011-2015, American Community Survey

- Wage Change, 2011-2015
- ACS Employment, 2011
- ACS Employment, 2015

New York City Department of Education Career and Technical Education, 2017

- Career and Technical Education (CTE) High Schools Offering Certification

New York State Department of Labor, Eligible Training Provider List (ETPL)

- Training Provider Class Size, 2015

New York State Department of Labor, Occupational Employment Statistics, Citywide Employment, 2015 (three-year data)

- Citywide Employment, 2015

New York State Department of Labor, Unemployment Insurance

- Unemployment Insurance Beneficiaries, 2011
- Unemployment Insurance Beneficiaries, 2015
- Unemployment Insurance Beneficiaries, Change, 2011-2015

New York State Education Department, Office of Licensed Professions, 2017

- Licenses Issued as of 2017

NYCLMIS survey of CUNY Continuing Education Programs, 2011-2015

- CUNY Certificate Recipients, 2011
- CUNY Certificate Recipients, 2015
- CUNY Certificate Recipients, Average 2011-2015
- CUNY Certificates, Change 2011-2015

NYCLMIS Survey of Workforce Providers, 2011-2015

- Workforce Provider Certifications, 2015

US Department of Education, Integrated Postsecondary Education Database (IPEDS), 2011-2015

- Associate Degrees, 2011
- Associate Degrees, 2015
- Associate Degrees, Average 2011-2015
- Associate Degrees, Change 2011-2015

HEALTHCARE DEMAND INDICATORS

1199SEIU Training and Upgrading Fund, 2011-2015

- 1199 Union Placements, 2011
- 1199 Union Placements, 2015

Burning Glass Technologies Labor Insights (TM)

- Ad Volume, 2011
- Ad Volume, 2015
- Ad Volume Change, 2011-2015

NYS Department of Labor, Long-term Occupational Projections, 2022

- Average Annual Openings
- Long-Term Projection, Number
- Long-Term Projection, Percentage

APPENDIX B. OCCUPATIONAL PERFORMANCE ON MIDDLE-SKILL DESIGNATION CRITERIA[1]

OCCUPATION	% MIDDLE-SKILL US	BLS ASSIGNMENT	% MIDDLE-SKILL NYC	O*NET EMPLOYERS	O*NET JOB ZONE	TIEBREAKER
ARCHITECTURE AND ENGINEERING						
Aerospace engineering and operations technicians	■	■	■			
Civil engineering technicians	■	■	■	■	■	
Electrical and electronics engineering technicians	■	■	■	■	■	
Electro-mechanical technicians	■	■	■	■	■	
Engineering technicians, except drafters, all other	■	■	■		■	
Environmental engineering technicians	■	■	■			
Industrial engineering technicians	■	■	■	■	■	
Mechanical engineering technicians	■	■	■	■	■	
Surveying and mapping technicians	■		■	■	■	
COMMUNITY AND SOCIAL SERVICE						
Community health workers						
COMPUTER AND MATHEMATICAL						
Computer user support specialists	■	■			■	
CONSTRUCTION AND EXTRACTION						
Construction and building inspectors	■			■	■	■
Electricians	■		■	■	■	
EDUCATION AND LIBRARY						
Teacher assistants	■	■	■	■	■	
HEALTHCARE PRACTITIONERS AND TECHNICAL						
Cardiovascular technologists and technicians	■	■	■	■	■	
Dental hygienists	■	■	■	■	■	
Diagnostic medical sonographers	■	■	■	■	■	
Dietetic technicians	■	■	■		■	
Emergency medical technicians and paramedics	■	■	■	■	■	
Health technologists and technicians, all other	■			■	■	■
Licensed practical and licensed vocational nurses	■	■	■	■	■	
Magnetic resonance imaging technologists	■	■	■	■	■	
Medical records and health information technicians	■	■	■	■	■	
Nuclear medicine technologists	■	■	■	■	■	

1 Community health workers and computer user support specialists were included at the special request of Stakeholder Advisory Board members.

OCCUPATION	% MIDDLE-SKILL US	BLS ASSIGNMENT	% MIDDLE-SKILL NYC	O*NET EMPLOYERS	O*NET JOB ZONE	TIEBREAKER
Ophthalmic medical technicians	■	■	■	■	■	
Opticians, dispensing	■		■	■	■	
Pharmacy technicians	■		■		■	
Psychiatric technicians	■	■	■		■	
Radiologic technologists	■	■	■	■	■	
Radiation therapists	■	■	■	■	■	
Respiratory therapy technicians	■	■	■	■	■	
Surgical technologists	■	■	■	■	■	
Veterinary technologists and technicians	■	■	■	■	■	
HEALTHCARE SUPPORT						
Dental assistants	■	■	■	■	■	
Medical assistants	■	■	■	■	■	
Nursing assistants	■	■			■	■
Occupational therapy aides	■		■	■	■	
Occupational therapy assistants	■	■	■	■	■	
Phlebotomists	■	■	■	■	■	
Physical therapist aides	■		■		■	
Physical therapist assistants	■	■	■	■	■	
INSTALLATION, MAINTENANCE AND REPAIR						
Aircraft mechanics and service technicians	■	■	■	■	■	
Automotive service technicians and mechanics		■		■	■	■
Computer, automated teller, and office machine repairers	■	■	■	■	■	
Electric motor, power tool, and related repairers	■	■	■		■	
Electrical and electronics repairers, commercial and industrial equipment	■	■		■	■	■
Electronic equipment installers and repairers, motor vehicles		■	■	■	■	
First-line supervisors of mechanics, installers, and repairers	■			■	■	■
Heating, air conditioning, and refrigeration mechanics and installers	■	■		■	■	■
Home appliance repairers			■	■	■	
Industrial machinery mechanics	■			■	■	■
Medical equipment repairers	■	■		■	■	
Millwrights	■		■		■	

OCCUPATION	% MIDDLE-SKILL US	BLS ASSIGNMENT	% MIDDLE-SKILL NYC	O*NET EMPLOYERS	O*NET JOB ZONE	TIEBREAKER
Radio, cellular, and tower equipment installers and repairs	■	■	■	■	■	
Security and fire alarm systems installers	■			■	■	■
Telecommunications equipment installers and repairers, except line installers	■	■	■	■	■	
Telecommunications line installers and repairers	■		■		■	
LIFE, PHYSICAL, AND SOCIAL SCIENCES						
Chemical technicians		■	■	■	■	
OFFICE AND ADMINISTRATIVE						
Court, municipal, and license clerks	■		■		■	
Dispatchers, except police, fire, and ambulance	■		■		■	
File clerks	■		■		■	
Hotel, motel, and resort desk clerks	■		■		■	
Insurance claims and policy processing clerks	■		■		■	
Interviewers, except eligibility and loan	■		■		■	
Loan interviewers and clerks	■		■	■	■	
Medical secretaries	■			■	■	■
Police, fire, and ambulance dispatchers	■		■		■	
Postal service clerks	■		■		■	
Postal service mail carriers	■		■		■	
Postal service mail sorters, processors, and processing machine operators	■		■		■	
Reservation and transportation ticket agents and travel clerks	■		■		■	
Secretaries and administrative assistants	■			■	■	■
Switchboard operators, including answering service	■		■		■	
Word processors and typists	■		■		■	
PERSONAL CARE						
Embalmers	■	■	■	■	■	
Funeral attendants	■		■		■	
Morticians, undertakers, and funeral directors	■	■	■	■	■	
Residential advisors	■		■		■	
PRODUCTION						
Chemical plant and system operators	■		■		■	
Gas plant operators	■		■		■	

OCCUPATION	% MIDDLE-SKILL US	BLS ASSIGNMENT	% MIDDLE-SKILL NYC	O*NET EMPLOYERS	O*NET JOB ZONE	TIEBREAKER
Petroleum pump system operators, refinery operators, and gaugers	■		■		■	
Plant and system operators, all other	■		■		■	
Prepress technicians and workers		■	■	■	■	
Tool and die makers	■		■	■	■	
PROTECTIVE SERVICE						
First-line supervisors of correctional officers	■		■		■	
First-line supervisors of police and detectives	■		■		■	
First-line supervisors of firefighting and prevention workers	■	■	■		■	
Firefighters	■	■	■	■	■	
Fire inspectors and investigators	■	■	■	■	■	
Forest fire inspectors and prevention specialists	■		■		■	
Bailiffs	■		■		■	
Correctional officers and jailers	■		■		■	
Police and sheriff's patrol officers	■		■		■	
Transit and railroad police	■		■	■	■	
Transportation security screeners	■		■		■	
SALES AND RELATED						
Telemarketers	■		■		■	
TRANSPORTATION						
Locomotive engineers	■		■		■	
Locomotive firers	■		■		■	
Rail transportation workers, all other	■		■		■	
Rail yard engineers, dinkey operators, and hostlers	■		■		■	
Railroad brake, signal, and switch operators	■		■		■	
Railroad conductors and yardmasters	■		■		■	
Subway and streetcar operators	■		■		■	
Traffic technicians	■		■		■	
Transportation workers, all other	■		■		■	

APPENDIX C. CUNY CONTINUING ED SURVEY INSTRUMENT

DATA YOU WILL NEED

To complete your form, please have the following information available about each of your training programs at your fingertips for the calendar years (January-December) 2011-2015:

- Number of participants enrolled
- Number of participants who completed training
- Number of placements for participants

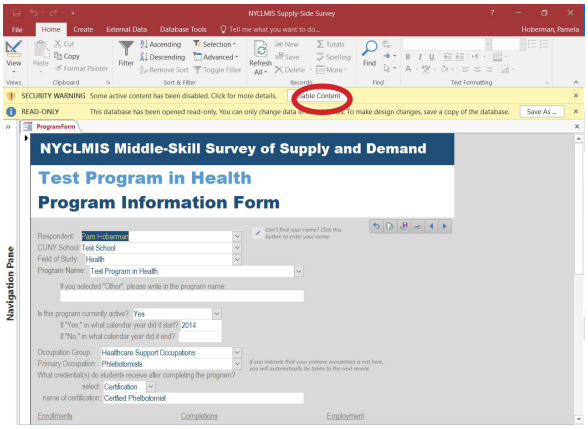
OPENING AND SAVING THE DOCUMENT

When you open the document for the first time, you will see likely see two yellow bars at the top that are prompts for you to take action. In order for your form to work properly, follow these steps:

For the prompt that reads: SECURITY WARNING: This has to do with the security settings on your computer. There is no risk in opening this document. Please click the "ENABLE CONTENT" button.

a. For the prompt that indicates this document is "READ-ONLY": Please click on "SAVE AS" and save the form in an appropriate location outside your "Downloads" folder. In order for us to receive your responses, we will need you to save this form to your computer first.

b. A dialogue box will appear asking if this is a trusted document. Click the "Yes" button to continue



ENTER PROGRAM INFORMATION

CUNY School, Field of Study and Program Name have been pre-populated in each record provided. There is one record for each middle-skill-oriented program NYCLMIS identified. Please review the list on the website (along with alternate or "lay" titles) to see the occupations we are studying. At the bottom of the screen, the word "record" will show the number programs (or records) we have created for your school.

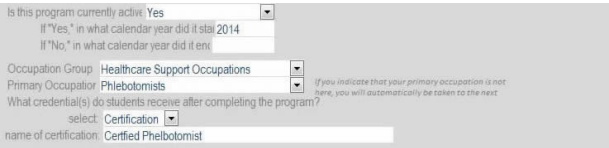
If you do not agree with the pre-populated information, simply click the drop down menu in each field to examine your options and then select an answer that better fits or describes your program.

If there is a pre-populated program that your school does not actually offer, select "We do not offer this program" from the field that asks, Is this program currently active? If you offer other relevant programs not captured in the pre-populated records, follow the instructions to create a new record.

PROGRAM INFORMATION

- Is the program currently active? Use the drop-down menu to select "yes" or "no"
- If Yes" enter the calendar year start date
  - If "No" please enter the calendar year end date
- Occupation Group—Please select the occupation group that is most relevant for this program
- Occupations—Please select the occupation that is most relevant for that program
  - Note: If the pre-populated program does NOT prepare students for any of the occupations listed, select, "My occupation is not here" from the drop down list. Upon making this selection, you will be immediately taken to the next record to complete.

Credentials—please select if the program awards a certification to the participants. If there is another type of award they receive, please type this in the "name of certification" box.



ENROLLMENTS, COMPLETIONS, AND EMPLOYMENT

Definitions

Enrolled. Number of students who were admitted to and started the program.

Completions. Number of students who finished all program activities.

Employment within 90 days. Number of students who obtained relevant employment within 90 days of completing the program.

What to enter:

Please enter data by calendar years (January-December). This may mean translating academic year information into calendar year information.

- Please use your best estimate even if you do not know the exact number.

Please enter whole numbers (e.g. 0, 100).

- Enter "N/A" if you did not enroll any students that year or if the category does not apply.

If the information is missing or unknown, please enter "Unavailable" or "U" for short. Again, please do your best to estimate a number.

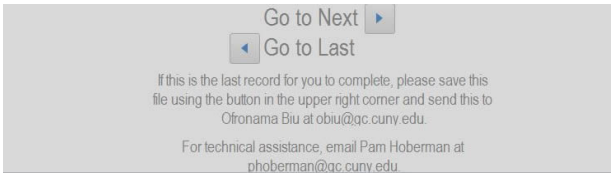
SAVING THE FORM

To ensure you do not lose your work, please remember to save before exiting the document. If you have already saved this document by following the instructions on the first page, to save your work, simply click on the "save" icon at the top.

ADVANCING TO THE NEXT PROGRAM

Click on the right-facing arrow at the bottom or top of the form to advance to the next pre-populated program. If you need to revisit a program you already completed, use the left-facing arrow to review the records you have completed so far.

If you have already cycled through all pre-populated programs/records you will see a blank record next. You are welcome to enter information on additional programs there. If you have no additional program information to enter into these blank forms, simply save this document and then send it to Ofronama Biu using the instructions provided at the very bottom of the screen.



ADDING PROGRAMS

If you want to add a program that we did not list and was offered at some point between from 2011-2015, please click on the "Add Record" record button (circled below) or go to the end of the form. Once you are in a new record, use the drop downs to enter program information in that new record. If your program does not belong to any of the Fields of Study identified, select "Other" for the Field of Study and "Other" for the Program Name and type in the program name in the field provided.

APPENDIX D. WORKFORCE PROVIDER SURVEY

STUDY OF THE SUPPLY OF AND DEMAND FOR MIDDLE-SKILL WORKERS: WORKFORCE EDUCATION AND TRAINING PROVIDER SURVEY

INTRODUCTION

The purpose of this first annual survey is to determine how well New York City's workforce and education system is meeting the demands of the labor market for middle-skill workers. Are we preparing enough candidates, too many, or just the right amount? And, are we preparing them with in-demand credentials?

You will need to have the following information about your training programs at your fingertips.

- Number enrolled
- Number completed training
- Typical demographics
- Typical target populations
- Types of partner involvement
- Typical cost per student to the organization
- Typical cost to the student

The information you provide is confidential and results will only be published in aggregate. The amount of time this survey will take will depend on the number of "middle-skill" programs you are running. If you have the information listed above handy, it should take no longer than 10 minutes per program. If you have multiple programs you will be looped through the same set of questions for each program.

You can save this survey at any point and come back again to complete it. We just ask that you submit your complete survey by MONTH DAY, 2016.

SECTION I. YOUR ORGANIZATION AND ROLE

Organization name:

1. What is your primary function within your organization?
   i. Executive leadership (i.e., overseeing multiple organizational departments)
   ii. Job development and/or account management
   iii. Education and/or training
   iv. Grants and contracts
   v. Other:

If other, please enter:

2. What title listed below is the closest to yours?
   i. Executive Director
   ii. Director
   iii. Manager/Coordinator
   iv. Direct Service/Line Staff/Educator
   v. Other:

If other, please enter:

3. Which of the following best describes your organization?
   i. Public college
   ii. Private nonprofit college
   iii. Private for-profit college
   iv. Non-profit training/workforce institution
   v. For-profit training/workforce institution
   vi. Other:

If other, please enter:

4. How long has your organization provided workforce training?
   i. 1-3 years
   ii. 4-6 years
   iii. 7-10 years
   iv. 11-15 years
   v. More than 15 years

5. Please identify all of the occupational groups for which you provide training. If you are not sure which occupational group or groups best match your programs, please click on the links below to see the descriptions and then select the one(s) that best match your program. (Select all that apply)

Note: A popup listing the occupations and a brief description of each occupation group will appear.

If "none of the above" is selected, go to section IV.

SECTION II. MIDDLE-SKILL OCCUPATIONAL TRAINING PROGRAMS

Respondents will be directed to the first occupational group indicated in Section I, and then sent through occupational selection and program detail. The survey loops through this pattern for every occupational group they select in Section I.

6. The list below includes all of the middle-skill occupations within the (NAME OF OCCUPATIONAL GROUP) occupational group that we are studying. Please select all of the occupations that you train your students for. If you are not sure which occupation(s) to select, click on the links to see the descriptions and select the one(s) that most closely describe your program. SELECT ALL THAT APPLY

Brief pop-up description of each occupation.

a. HEALTHCARE TECHNICIANS AND PRACTITIONERS and COMMUNITY AND SOCIAL SERVICE OCCUPATIONS

If anything but "None of the above," go to Section III-A. If "None of the above" go to next occupational group or to the optional questions at the end.

b. ARCHITECTURE & ENGINEERING OCCUPATIONS

If answer, yes to any of the above, take to Section III-B. Program Specific Questions. Otherwise, send to next occupation group. If no other occupation groups, send to optional questions at end.

c. COMPUTER AND MATHEMATICAL OCCUPATIONS

If answer, yes to any of the above, take to Section III-B. Program Specific Questions. Otherwise, send to next occupation group. If no other occupation groups, send to optional questions at end.

d. CONSTRUCTION AND EXTRACTION OCCUPATIONS

If answer, yes to any of the above, take to Section III-B. Program Specific Questions. Otherwise, send to next occupation group. If no other occupation groups, send to optional questions at end.

e. EDUCATION & LIBRARY OCCUPATIONS

If other than "None of the above," take to Section III-B. Otherwise, send to next occupation group. If no other occupation groups, send to optional questions at end.

f. INSTALLATION, MAINTENANCE AND REPAIR OCCUPATIONS

If answer, yes to any of the above, take to Section III-B. Otherwise, send to next occupation group. If no other occupation groups, send to optional questions at end.

g. LIFE, PHYSICAL, AND SOCIAL SCIENCE OCCUPATIONS

If other than "None of the above," take to Section III-B. Otherwise, send to next

occupation group. If no other occupation groups, send to optional questions at end

h. OFFICE & ADMINISTRATIVE OCCUPATIONS

If answer, yes to any of the above, take to Section III-B. Otherwise, send to next occupation group. If no other occupation groups, send to to optional questions to optional questions at end.

i. PERSONAL CARE AND SERVICE OCCUPATIONS

If answer, yes to any of the above, take to Section III-B. Otherwise, send to next occupation group. If no other occupation groups, send to optional questions at end.

j. PRODUCTION OCCUPATIONS

If answer, yes to any of the above, take to Section III-B. Otherwise, send to next occupation group. If no other occupation groups, send to optional questions at end.

k. PROTECTIVE SERVICE OCCUPATIONS

If answer, yes to any of the above, take to Section III-B. Otherwise, send to next occupation group. If no other occupation groups, send to optional questions at end.

l. SALES AND RELATED OCCUPATIONS

If other than "None of the above," take to Section III-B. Otherwise, send to next occupation group. If no other occupation groups, send to optional questions at end.

m. TRANSPORTATION OCCUPATIONS

If other than "None of the above," take to Section III-B. Otherwise, send to next occupation group. If no other occupation groups, send to optional questions at end.

SECTION IIIA. HEALTHCARE OCCUPATIONAL PROGRAM QUESTIONS QUESTIONS

Start loop to repeat as many times as the number of occupations selected in SECTION II

7. Over the past five years, how many concurrent OCCUPATION NAME training programs do you typically operate? (# programs)

Questions through 9 through 14 have slots for the # of programs identified here.

8. What are the names of your programs for OCCUPATION NAME (e.g. Medical Assisting, Radiology)?

a. PROGRAM 1

b. PROGRAM 2

c. PROGRAM 3, etc.

Questions 10 through 14 are automatically pre-populated with program names.

9. Please answer the following information for all of the programs related to OCCUPATION NAME.

a. Please indicate whether each program is a single class or a multiple class program? PROGRAM TYPE (single or multiple class)

   i. PROGRAM NAME1

   ii. PROGRAM NAME 2

   iii. PROGRAM NAME 3, etc.

10. What credential do students attain when they complete the program? (certificate or completion, occupational certificate non-credit bearing, occupational certificate credit-bearing, associate degree, something else)

   i. PROGRAM NAME 1

   ii. PROGRAM NAME 2

   iii. PROGRAM NAME 3, etc.

a. How many hours must students complete

to meet program completion requirements for OCCUPATION NAME training? Please enter zero ("0") if there is no requirement for any of the categories (classroom, lab, internship, practicum, other/write in):

i. PROGRAM NAME 1

ii. PROGRAM NAME 2

iii. PROGRAM NAME 3, etc.

b. Do your OCCUPATION NAME programs explicitly prepare students for a licensing examination (yes/no)

i. PROGRAM NAME 1

ii. PROGRAM NAME 2

iii. PROGRAM NAME 3, etc.

In the previous question, you indicated that you prepare students for a licensing examination for OCCUPATION NAME. Please indicate below the name of the license(s). (write-in)

11. For each OCCUPATION NAME program, please complete the information below for each CALENDAR YEAR. If you need to stop and get the information before filling in this question, please SAVE your answers and come back when you have the information. If you do not know the exact number please estimate. Enter zero ("0") if you did not enroll any students that year (for 2011 through 2015: number enrolled, number of program completions, number who obtained employment within 90 days - indicate if #s are estimates)

REMEMBER: This data will only be reported in aggregate across training providers!

i. PROGRAM NAME 1

ii. PROGRAM NAME 2

iii. PROGRAM NAME 3, etc.

PLEASE ANSWER THE FOLLOWING QUESTIONS ABOUT ALL OF YOUR PROGRAMS. IF THERE ARE DIFFERENCES BETWEEN PROGRAMS, PLEASE ENTER THEM IN THE COMMENTS.

12. What is the typical program enrollment by race/ethnic background? Please enter percentages and estimate if unsure.

i. African-American/Black non-Hispanic/Latino

ii. Latino/Hispanic (any race)

iii. White non-Hispanic/Latino

iv. Asian and Pacific Islander

v. Other : _____

Ensure adds to 100%.

vi. COMMENTS ABOUT VARIATION BETWEEN PROGRAMS: _____

13. What is the typical program enrollment by gender? Please enter estimated percentages.

i. Male (including transgender males):

ii. Female (including transgender females)

iii. Gender non-conforming

Ensure adds to 100%.

iv. COMMENTS ABOUT VARIATION BETWEEN PROGRAMS: _____

14. Does your program have special target populations? (Select all that apply)

i. Young people under 18

ii. Young adults

iii. Older adults

iv. Under- or unemployed

v. Low income individuals (income cutoff or public assistance)

vi. Veterans

vii. Immigrants

viii. Formerly incarcerated individuals/re-entering individuals

ix. Individuals with disabilities

x. LGBTQ individuals

xi. Men

xii. Women

xiii. Other:

If other, please indicate: _____

No special target populations

xiv. COMMENTS ABOUT VARIATION BETWEEN PROGRAMS: _____

15. What is the average cost per student TO YOUR ORGANIZATION of each student (in 2015)? _____

    i. COMMENTS ABOUT VARIATION BETWEEN PROGRAMS: _____

16. What is the TYPICAL COST TO EACH STUDENT (regardless where the funds come from, such as financial aid), including tuition and fees only (in 2015)? _____

Remember: This data is only reported in aggregate.

    i. COMMENTS ABOUT VARIATION BETWEEN PROGRAMS: _____

17. Please check all of the ways you typically work with the following types of people and organizations for your OCCUPATION NAME programs. (Select all that appy: serves on advisory committee, refers participants to your program, provides input on curriculum design, advises on occupational requirements, provides job search assistance, guest lectures or presentations, hosts internships, recruits for employment, employs graduates)

    i. Employers

    ii. Industry Associations

    iii. Labor Unions

    iv. Other workforce providers

    v. Other social service providers

SECTION IIIB. OCCUPATIONAL TRAINING PROGRAMS (NON HEALTHCARE)

YOU INDICATED THAT YOU PREPARE STUDENTS FOR EMPLOYMENT AS [LIST OF OCCUPATION NAMES] WITHIN THE [OCCUPATIONAL GROUP NAME] OCCUPATIONAL GROUP.

PLEASE ANSWER THE FOLLOWING QUESTIONS ABOUT ALL OF YOUR OCCUPATIONAL GROUP NAME OCCUPATIONAL GROUP PROGRAMS.

This section repeats questions 8-17 above for each occupational group selected in question 6.

SECTION IV. OPTIONAL COMMENTS

18. Do you have any comments about this survey or any of the topics within it?

19. Comments on how your programs have changed over the years or will in the future.

20. How, if at all, has funding influenced the data reported?

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