



**Public Advocate for the City of New York**

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**HELP WANTED:  
DEPARTMENT OF EDUCATION MISSES  
OPPORTUNITIES TO CONNECT STUDENTS WITH  
HEALTH CARE CAREERS**

**A REPORT BY PUBLIC ADVOCATE BETSY GOTBAUM  
NOVEMBER 2006**

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# **Office of the New York City Public Advocate**

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## **EXECUTIVE SUMMARY**

The upcoming demographic shift in the age of the city's population poses a major challenge for New York City's health care industry. Aging baby boom nurses and other health care professionals are retiring at the same time as aging baby boomers are placing greater demands on the health care system. Local health care employers say that they are facing a shortage of nurses, mammographers, and other health care workers, and that high school students are not being adequately prepared for these living wage careers.

According to human resources (HR) directors, students lack academic and job readiness skills, as well as practical experience. Furthermore, according to one HR director, "when you speak to young people today, they have no idea of health care opportunities. They think you've either got to go to college or enter a low paying industry like food services."

The Office of the Public Advocate interviewed 20 human resources executives at 20 randomly selected New York City private and public hospitals and nearly a dozen job service coordinators from the 1199SEIU Training and Employment Funds to ascertain their opinions of New York City high school graduates' preparedness to enter health care careers and their knowledge and opinion of high school Career and Technical Education (CTE) programs. The Public Advocate simultaneously gathered information from the New York City Department of Education (DOE) on its health care CTE programs.

Career and Technical Education is the current name and model for high school technical and vocational education. CTE programs offer both rigorous academic and technical education programs. These programs were chosen for evaluation because they are meant to train students for employment in specific industries and, when properly implemented, have been shown to be better than standard high school programs at successfully preparing students for both employment in a career and further education or training.

The findings of the Public Advocate's research indicate that New York City's CTE programs are preparing few students for careers in the city's health services industry and that more could be done to ready high school students for promising careers in this field. The failure to train students for health services careers means that the city is missing an important opportunity to address the local shortage of health care workers and to provide thousands of young people with access to a living-wage income and a rewarding career.

Between 2002 and 2012, it is estimated that New York City will have 76,000 openings, or 7,600 openings annually, in health care positions that require an associate's degree or less. The city's CTE programs lack both the scope and capacity to prepare the young people needed to fill these openings. While CTE programs cannot be expected to fully meet the demands of the health care industry, the potential of the programs to address those demands has gone largely unrealized.

During the 2004-05 school year, only 1,254 students were enrolled in state-approved health care CTE programs. Furthermore, only 185 students, about 2% of the number of workers needed to fill the annual healthcare openings, graduated and passed the technical

assessment for jobs that the New York State Department of Labor identifies as having “very favorable” or “favorable” employment prospects.

Most of the city’s healthcare CTE programs are not properly aligned with industry labor force requirements. Of the 55 programs the DOE refers to as CTE programs in health care, only 15 have received state approval. Additionally, 39 of the 40 programs which are not state-approved have not submitted applications for approval.

The Office of the Public Advocate found that most (85%) of the HR executives surveyed were not familiar with CTE, but 90% endorsed the idea of offering more practical experience in the workplace in the form of internships, mentorships and clinical rotations, and 75% called for better alignment of high school curriculum with industry labor force requirements.

The city can and must do a better job of engaging and training students in health services careers. The more robust the CTE programs offered by the DOE, the greater the positive impact on the financial well-being of the city’s young people, as well as the health of the city’s residents.

**KEY RECOMMENDATIONS FOR THE DOE:**

- Increase the quantity of CTE graduates by expanding program capacity.
- Improve the quality of CTE programs by accelerating the process of submitting applications for state-approval.
- Better align CTE curricula with favorable employment opportunities and industry labor force requirements.
- Better connect graduates with industry career opportunities.
- Increase awareness of health care career opportunities—and of CTE programs as a way to prepare for those opportunities—among employers, unions, guidance counselors, parents, and students.

## INTRODUCTION

Health care is a large and growing industry. In 2002, there were 12.9 million jobs in the health services industry nationwide, making it one of the largest industries in the country.<sup>1</sup> Based on the number of employees living in the city's five boroughs, 10 of New York City's largest 25 employers are currently health care companies.<sup>2</sup> Fourteen of the 30 fastest-growing occupations are concentrated in health services. These positions include medical assistants (59% growth), physician assistants (49% growth), and medical records and health information technicians (47% growth).<sup>3</sup>

New York City's employers are having difficulty staffing a wide variety of living-wage<sup>4</sup> health care positions at the same time that New York City's young people are having difficulty starting living wage careers. The city reported a four-year high school graduation rate in 2005 of only 58.2%, while the state reported that the rate is actually as low as 43%.<sup>5</sup> Among out-of-school youth age 16 to 24, only 58.4% of males and 51.6% of females are employed.<sup>6</sup>

In the face of these stark numbers, the city has insisted on the necessity of a four-year college education for every young New Yorker. In a June 2006 public hearing, Bill Chong, Deputy Commissioner of Youth Services for the New York City Department of Youth and Community Development (DYCD), stated, "(w)e want young people to go to college because in today's work force if you don't have a bachelor's degree you can't get very far."<sup>7</sup>

It appears that one unfortunate consequence of the city's otherwise admirable effort to emphasize the four-year college track has been that other options available to young people have been de-emphasized. According to one human resources director in a major New York City hospital, "when you speak to young people today, they have no idea of health care opportunities. They think you've either got to go to college or enter a low-paying industry like food service. Young people may know about hospitals, but they

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<sup>1</sup> United States Department of Labor Bureau of Labor Statistics (BLS), Career Guide to Industries 2004-05, Health Services.

<sup>2</sup> Crain's New York Business, "New York City's Largest Employers," March 27 - April 2, 2006: 17-18.

<sup>3</sup> This refers to the fastest-growing occupations between 2002 and 2012. See 1.

<sup>4</sup> A "living wage" is usually considered what a full-time worker would need to earn to support a family above the poverty line. This report utilizes the definition of a living wage included in the New York City Living Wage Law (Local Law 38 of 2002), which states that "(t)he living wage shall be an hourly wage rate of ten dollars per hour" as of July 1, 2006. See also the Center for Policy Alternatives, [www.stateaction.org/issues/issue.cfm/issue/LivingWage.xml](http://www.stateaction.org/issues/issue.cfm/issue/LivingWage.xml).

<sup>5</sup> New York City Department of Education (DOE), Annual School Report Cards, 2004-2005, <http://schools.nyc.gov/daa/SchoolReports/05asr/379553.pdf>, pg. 18; New York State Education Department (NYSED), *The New York State School Report Card for School Year 2004-2005*, [www.emsc.nysed.gov/reprcd2005/](http://www.emsc.nysed.gov/reprcd2005/).

<sup>6</sup> Mark Levitan, *Out of School, Out of Work... Out of Luck?*, Community Service Society of New York, January 2005.

<sup>7</sup> Transcript of the Meeting of the Interagency Coordinating Council (ICC) on Youth, Fourth Quarter Meeting and Annual Public Hearing, New York City, June 29, 2006, pg. 23.

don't think about health care careers.”<sup>8</sup> Industry experts believe that guidance counselors, parents, and students are not properly informed about the array of health care positions available, nor the fact that those positions offer good salaries.<sup>9</sup> While all students must be given every opportunity to pursue a four-year degree, students should also be made aware of the living-wage jobs available to high school graduates and graduates of two-year associate's degree programs and should be provided with the high school education necessary to secure a full range of promising careers.

If properly designed and implemented, high school Career and Technical Education (CTE) programs can bridge this gap, connecting employers with qualified workers and providing young people with the education they need to obtain gainful employment. In July 2006, the Office of the Public Advocate initiated an assessment of the New York City Department of Education's (DOE) CTE programs, which are designed to train students for careers in the health care industry. The Office found that the city's CTE programs currently lack both the scope and capacity to prepare the young people needed to fill the openings in this growing field and that many of the programs that exist are not properly aligned with industry labor force requirements. While CTE programs cannot be expected to fully meet the demands of the health care industry, the potential of the programs to address those demands has gone largely unrealized.

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<sup>8</sup> As part of its investigation, the Office of the Public Advocate surveyed human resource (HR) executives from New York City hospitals. This comment was made by one of the HR directors included in the survey. A copy of the survey is included as Appendix A.

<sup>9</sup> As part of its investigation, in addition to interviewing HR executives, the Office of the Public Advocate surveyed 11 union job service coordinators. These individuals, and other industry executives interviewed, consistently commented on students' lack of exposure to health care professions.

## BACKGROUND

### *Industry Challenges*

The upcoming demographic shift in the age of the city's population poses a major challenge for New York City's health care industry. Aging baby boom nurses and other health care professionals are retiring at the same time as aging baby boomers are placing greater demands on the health care system. According to a report from the Greater New York Hospital Association, "we are on a collision course with what has been termed in the nursing world 'the perfect storm.'"<sup>10</sup> An affiliate of the city's largest health care union, 1199SEIU Training and Employment Funds (TEF), reports that current nurse to patient ratios—as high as 1:14—impede the delivery of adequate nursing care.<sup>11</sup> Wait times for mammogram appointments are increasing, due in part to a shortage of qualified mammogram technicians.<sup>12</sup>

The United States Department of Labor Bureau of Labor Statistics (BLS) forecasts sustained growth in health care employment not only because baby boomers are aging but also because life expectancies are rising and aging children will be less able to care for their parents.<sup>13</sup> In addition, BLS predicts that "advances in medical technology will continue to improve the survival rate of severely ill and injured patients, who will then need extensive therapy and care" and "(n)ew technologies will make it possible to identify and treat conditions that were previously not treatable," further expanding the demand for health care workers.<sup>14</sup>

A second major challenge faced by the health care industry is the lack of sufficient educational pathways into health care careers. In order to connect young people with living wage jobs in health services, it is necessary to engage young people at the appropriate age with the appropriate information, train young people adequately for a range of in-demand positions, and maintain young people in the profession.

### *Industry Opportunities*

According to the New York State Department of Labor (DOL), there are 31 "favorable" or "very favorable" health care positions in New York City that require an associate's degree or less.<sup>15</sup> These positions offer a living wage<sup>16</sup> and are projected to grow every year between 2002 and 2012.

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<sup>10</sup> Greater New York Hospital Association (GNYHA), *Survey of Nurse Staffing in GNYHA Hospitals, 2005*, April 2006.

<sup>11</sup> Norma F. Amsterdam, Executive Vice President, 1199SEIU TEF Registered Nurses Division, interview with author, August 2006.

<sup>12</sup> The Public Advocate for the City of New York, *Missing the Mark: HHC Mammogram Wait Time Off Target*, August 2006.

<sup>13</sup> BLS, *Health Care*, available at [www.bls.gov/oco/cg/pdf/cgs035.pdf](http://www.bls.gov/oco/cg/pdf/cgs035.pdf).

<sup>14</sup> *Ibid.*

<sup>15</sup> There are 20 very favorable positions and 11 favorable positions. "Favorable" refers to slow-growing occupations with a large number of annual openings; average growth occupations with a medium number of annual openings; and fast-growing occupations with a small number of annual openings. For these three groups of occupations, prospects for employment are good. A "Favorable" descriptor is also assigned to occupations with a large number of annual openings and a negative growth rate because job opportunities exist despite the employment decline. "Very favorable" refers to occupations with an average growth rate

Each position in Table 1 (below) requires a two-year associate's degree or less. On average, these positions pay \$42,522. The DOL estimates 7,600 annual openings in these positions in New York City through 2012.

**Table 1**  
**Health Care Employment Prospects in New York City for the 2002- 2012 period <sup>17</sup>**

	<b>Job Title</b>	<b>Annual Wages</b>	<b>Expected Growth Rate</b>	<b>Annual Openings</b>
1	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	\$21,210	14.70%	20
2	Cardiovascular Technologists and Technicians *	\$43,790	30.80%	80
3	Dental Assistants	\$33,170	33.70%	380
4	Diagnostic Medical Sonographers *	\$67,510	22.20%	40
5	Dietetic Technicians	\$32,360	16.70%	20
6	Emergency Medical Technicians and Paramedics	\$42,140	17.00%	120
7	Licensed Practical and Licensed Vocational Nurses	\$40,920	13.80%	590
8	Massage Therapists	\$58,180	23.80%	110
9	Medical and Clinical Laboratory Technicians *	\$39,980	9.40%	160
10	Medical Assistants	\$28,370	47.30%	570
11	Medical Equipment Preparers	\$33,770	13.40%	30
12	Medical Equipment Repairers *	\$44,500	7.90%	30
13	Medical Records and Health Information Technicians *	\$36,500	34.40%	130
14	Medical Secretaries	\$34,060	6.40%	90
15	Medical Transcriptionists	\$35,570	23.30%	40
16	Nuclear Medicine Technologists *	\$64,200	18.40%	20
17	Nursing Aides, Orderlies, and Attendants	\$31,190	16.50%	1,220
18	Occupational Therapist Aides	\$36,560	36.70%	10
19	Occupational Therapist Assistants *	\$41,750	28.00%	20
20	Pharmacy Aides	\$21,660	10.50%	30
21	Pharmacy Technicians	\$31,330	19.60%	130
22	Physical Therapist Aides	\$27,820	40.30%	40
23	Physical Therapist Assistants *	\$41,100	42.00%	80
24	Psychiatric Aides	\$32,500	7.20%	30
25	Radiation Therapists *	\$81,270	23.3%	20
26	Radiologic Technologists and Technicians *	\$58,620	17.7%	140
27	Registered Nurses *	\$71,400	23.20%	3,230
28	Respiratory Therapists *	\$58,010	29.40%	120
29	Respiratory Therapy Technicians	\$50,400	34.00%	30
30	Surgical Technologists	\$35,810	20.30%	70
	Average Annual Wages and Growth, Total Openings	\$42,522	22.73%	7,600

\* *Require an Associate's Degree.*

and a large number of total annual openings as well as fast-growing occupations that have a medium or a large number of total annual openings. These occupations offer the best prospects for employment. New York State Department of Labor (NYS DOL), *New York City Workforce and Industry Data*.

<sup>16</sup> See 4.

<sup>17</sup> Table 1 includes the Median Annual Wages (using entry and experienced level salaries), the Percent Change in Employment from 2002-2012 and the Total Annual Average Openings (including growth openings and replacement openings). NYS DOL, *Workforce & Industry Data*, [www.labor.state.ny.us](http://www.labor.state.ny.us).



### ***Youth Development Challenges***

There are three major youth development challenges facing the city. First, with an overall four-year graduation rate of between 43% and 58.2% in 2005,<sup>18</sup> the city is home to an alarmingly high number of young people who are prepared for neither college nor a career.<sup>19</sup> Second, the city is not connecting its out-of-school youth with jobs. In the recent report, “Out of School, Out of Work...Out of Luck?,” the Community Service Society of New York notes that while 72.1% of out-of-school males are in the labor force (either employed or seeking employment), only 58.4% are employed. Similarly, while 64% of out-of-school females are in the labor force, only 51.6% are employed. Third, there are currently 200,000 “disconnected youth” in New York City. Age 16 to 24, these young people are neither in school, working, nor seeking employment. “About half of the disconnected (51.9 percent of males and 47.9 percent of females) ha[ve] not completed high school or earned a GED.”<sup>20</sup>

## **A WORKFORCE DEVELOPMENT AND YOUTH DEVELOPMENT SOLUTION: HIGH SCHOOL CAREER AND TECHNICAL EDUCATION (CTE)**

### **The Health Care Industry Offers an Array of Employment Options.**

There are a variety of career tracks in the health care industry, the majority of which require an associate’s degree or less.<sup>21</sup> A high school CTE program can directly prepare young people for some in-demand health care positions like nurse assistants, licensed practical nurses, and medical billers and coders. For other in-demand positions like x-ray technicians and mammography technicians, CTE programs can prepare students to transition into two-year associate’s degree programs.

### **What is CTE?**

Introduced by the New York State Education Department (NYSED) in 2001, Career and Technical Education (CTE) is the current name and model for high school technical and vocational education. Raising the bar on academic achievement is what distinguishes today’s career and technical education programs from vocational education programs of the past. Offering both rigorous academic and technical training, the current CTE programs are designed to prepare high school students for both college and career. Graduates of CTE programs receive a “technical endorsement” on their high school diploma if they pass an industry-approved technical assessment.

CTE programs are encouraged to apply for state approval to ensure that the academic and technical curriculum will successfully prepare students for further education, training or employment in a career.<sup>22</sup> To receive state approval, each CTE program must conduct a self-study and external review process and must provide evidence of: “(1) quality technical and academic curriculum, integrated instruction; (2) faculty with qualifications

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<sup>18</sup> See 5.

<sup>19</sup> One recent effort to increase graduation rates and improve the employment prospects of some New York City students was the creation of Learning to Work, a DOE program that includes job readiness and career exploration components. This program is not evaluated in this report.

<sup>20</sup> See 6.

<sup>21</sup> See 1.

<sup>22</sup> NYSED, [www.emsc.nysed.gov/cte/ctepolicy/qanda.htm](http://www.emsc.nysed.gov/cte/ctepolicy/qanda.htm).

in academic and technical fields; (3) technical assessments that certify students meet industry standards; (4) post-secondary articulation agreements;<sup>23</sup> and (5) data on student performance.”<sup>24</sup> As the New York City Department of Education (DOE) has acknowledged,<sup>25</sup> each of these components is critical to ensure a high-quality CTE program that prepares students to meet the demands of the city’s employers and colleges.

An example of a model CTE outcome is a student who passes all five Regents exams and the State Certified Nurse Assistant (CNA) Exam. This student leaves high school prepared to work as a CNA or, having acquired the necessary prerequisites, to transition into a two- or four-year nursing program. This outcome highlights the importance of both industry-recognized technical assessments and post-secondary articulation agreements.

### **The Potential of CTE**

The CTE model has the potential to institutionalize solutions to the industry challenges and to the youth development challenges cited above. When properly designed and implemented, CTE programs can effectively engage, train, and maintain young people in health care careers: a health careers exploratory course helps to engage young people in their freshman year of high school; an industry-aligned curriculum adequately prepares high school graduates to choose between entry-level health care positions and two- and four-year health care degrees; a steady pipeline of qualified workers mitigates understaffing; and improvements in overall training help to maintain workers in the profession. With its focus on quality instruction and faculty and on industry and post-secondary alignment, CTE can prepare students for careers in health services, helping to stem the labor shortage in the health care industry.

CTE also benefits the students, particularly at-risk and low-income students. In his introduction to “Remaking Career and Technical Education for the 21<sup>st</sup> Century: What role for High School Programs?,” Richard Kazis of Jobs for the Future summarizes the value of career-focused education as follows: “Well-designed career-focused programs can improve employment, earnings, non-academic skills, and career choices, particularly for at-risk and low-income youth. These programs have positive effects without any significant negative impacts on participants’ academic or educational progress.”<sup>26</sup> Kazis also concludes that “CTE appears to help less-motivated and more at-risk students stay in high school and graduate” and that “for those who do not continue to college, jobs found with the help of career-focused programs in high-school have a significant short to mid-run labor market payoff, particularly for low-income students and those who are most at-

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<sup>23</sup> “The postsecondary agreement prepares the student for a smooth transition from high school to advanced study in a career area. Articulation agreements may allow a student to earn high school graduation credits, college credits, and/or advanced standing at a postsecondary institution.” NYSED, *Career and Technical Education (CTE) Proposal*, January 24, 2001, [www.emsc.nysed.gov/cte/ctepolicy/docs/CTEguidepostsecondaryarticulation2004.doc](http://www.emsc.nysed.gov/cte/ctepolicy/docs/CTEguidepostsecondaryarticulation2004.doc).

<sup>24</sup> James Kadamus and Katherine Oliver, “How States are Building CTE Student Success,” PowerPoint presentation.

<sup>25</sup> DOE, *Career and Technical Education, About Us*, [www.nyccte.org/aboutus.asp](http://www.nyccte.org/aboutus.asp).

<sup>26</sup> Richard Kazis, “*Remaking Career and Technical Education for the 21<sup>st</sup> Century: What Role for High School Programs?*,” April 2005, [www.ecs.org/html/Document.asp?chouseid=6159](http://www.ecs.org/html/Document.asp?chouseid=6159).

risk.”<sup>27</sup> Research has found that “taking career and technical courses in high school beyond the introductory level is a predictor of higher earnings eight years after graduation.”<sup>28</sup> This earnings differential is substantial; students who take CTE courses in high school can increase their future monthly wages by 18%.<sup>29</sup>

Students may also find a CTE program more interesting than the usual high school experience, prompting them to do better in school. In a study of 619 ninth and tenth graders in California who were deemed at-risk of falling behind academically, 73% said they could do better if they felt motivated to work harder, and 73% said the idea of a school that prepares them for college and employment is appealing. Ninety-one percent of students said they would be more motivated to work hard and do well if they attended a school where they “could take courses that they need for college but also have more opportunity to acquire skills and knowledge relevant to future careers.”<sup>30</sup>

## **REVIEW OF CTE’S PREPARATION OF FUTURE HEALTH CARE WORKERS**

In light of the city’s workforce and youth development challenges, and considering the potential for CTE programs to institutionalize solutions to both, the Office of the Public Advocate evaluated the DOE’s progress in implementing the CTE model introduced by NYSED in 2001 as it relates to the health care industry. The Office set out to answer the following questions: (1) Are the city’s high school CTE programs on track to help stem the local labor shortage in the health care industry? (2) Are these programs on track to connect students with living-wage jobs?

To answer these questions, the Office conducted a two-part investigation:

### Part I

The Office of the Public Advocate requested “CTEDS” data from the DOE for all state-approved CTE programs. CTEDS is the Career and Technical Education Data System to which all state-approved programs are required to submit student performance data. CTEDS data disaggregated by program is not readily available to the public but was provided by the DOE upon request.<sup>31</sup>

### Part II

The Office of the Public Advocate surveyed 20 human resource (HR) executives at 20

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<sup>27</sup> *Ibid.*

<sup>28</sup> Lynn Olson, “Vocational Programs Earn Mixed Reviews, Face Academic Push,” *Education Week*, May 24, 2006.

<sup>29</sup> *Ibid.*

<sup>30</sup> The James Irvine Foundation, *Report Findings, Based on a Survey Among California Ninth and Tenth Graders*, April 5, 2006, [www.connectedcalifornia.org/downloads/irvine\\_poll.pdf](http://www.connectedcalifornia.org/downloads/irvine_poll.pdf).

<sup>31</sup> The program data supplied by the DOE varies from the program data on the DOE website. See Appendix B for a more detailed explanation of the data discrepancies.

randomly selected New York City public and private hospitals.<sup>32</sup> The Office also surveyed 11 job service coordinators at 1199SEIU Training and Employment Funds.<sup>33</sup>

The purpose of the survey was to characterize the recruitment challenges in the health care industry and to assess employer awareness of, evaluation of, and participation with high school CTE programs.

Following are our findings from these inquiries:

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<sup>32</sup> There are a total of 63 public and private hospitals in New York City. We spoke with senior human resource staff in 13 private hospitals and seven public hospitals. Job titles of those interviewed varied among hospitals and included: Director of Human Resources, Vice President of Human Resources, Head of Human Resources, Recruitment and Staffing, Director of Employment Services, Director of Recruitment, Recruitment Manager.

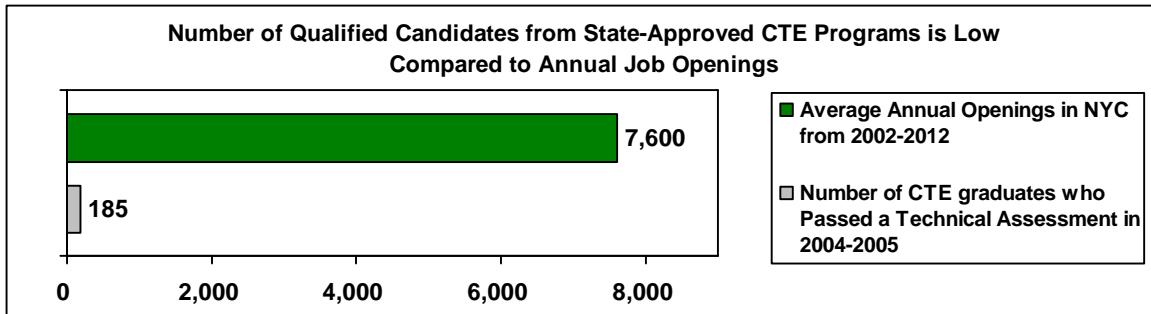
<sup>33</sup> 1199SEIU Training and Employment Funds has 13 job service coordinators in its Health & Human Services Employment Center who recruit for all union hospitals in New York City and in Long Island and Westchester. These job service coordinators place union members in one out of five vacancies in the union hospitals. Union hospitals also have their own recruiters on staff.

## FINDINGS

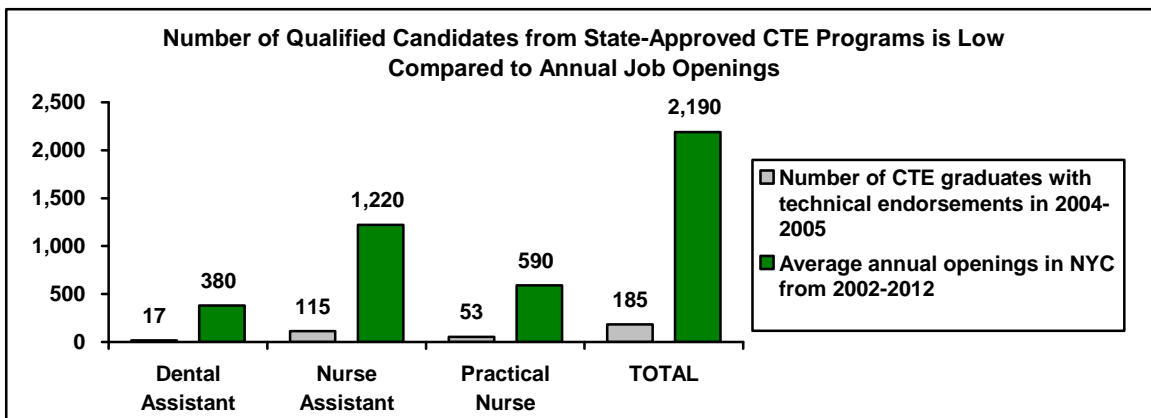
### Part I

**Last school year, only about 2% of the number of workers needed to fill the local annual health care openings completed a state-approved CTE program and passed a technical assessment.**

- In 2004-2005, only 185<sup>34</sup> students graduated from state-approved CTE health services programs and passed a technical assessment. The annual demand for health care workers in New York City who have an associate's degree or less is 7,600.<sup>35</sup>



- When compared to industry demand, only a very small number of students graduate from the city's state-approved programs that are aligned with favorable career opportunities. In 2004-2005, the number of CTE graduates who passed the technical assessment in dental assisting, nurse assisting, and licensed practical nursing represented only 4.5%, 9.4% and 9%, respectively, of industry demand.



<sup>34</sup> An additional 17 students passed the technical assessment in Vision Technology. According to the NYS DOL, Vision Technology does not have favorable employment prospects for the period 2002-2012. This program was therefore omitted from the analysis included in this report, which is focused on connecting young people with favorable employment prospects.

<sup>35</sup> This number includes only living-wage positions; home health aide jobs, for example, were excluded because the average annual wage is only \$18,310. While CTE cannot bear the full burden of the industry's workforce development needs, CTE programs are an essential pipeline for recruitment. When properly implemented, CTE programs increase the available labor pool of entry-level and higher-skilled workers.

**Most of the city’s CTE programs are not aligned with favorable opportunities in the health care industry.**

- As Table 2 (below) highlights, there were no graduates in 2004-2005 from state-approved CTE programs in 27 of the top high-growth, in-demand job categories.

**Table 2  
State-Approved CTE Programs Are Not Aligned  
With Favorable Opportunities in the Health Care Industry**

	<b>Job Titles with “Very Favorable” or “Favorable” Employment Prospects from 2002-2012</b>	<b>Annual Openings</b>	<b># of Graduates from State-Approved CTE Programs in 2004-2005<sup>36</sup></b>
1	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	20	0
2	Cardiovascular Technologists and Technicians	80	0
3	Dental Assistants	380	17
4	Diagnostic Medical Sonographers	40	0
5	Dietetic Technicians	20	0
6	Emergency Medical Technicians and Paramedics	120	0
7	Licensed Practical and Licensed Vocational Nurses	590	53
8	Massage Therapists	110	0
9	Medical and Clinical Laboratory Technicians	160	0
10	Medical Assistants	570	0
11	Medical Equipment Preparers	30	0
12	Medical Equipment Repairers	30	0
13	Medical Records and Health Information Technicians	130	0
14	Medical Secretaries	90	0
15	Medical Transcriptionists	40	0
16	Nuclear Medicine Technologists	20	0
17	Nursing Aides, Orderlies, and Attendants	1,220	115
18	Occupational Therapist Aides	10	0
19	Occupational Therapist Assistants	20	0
20	Pharmacy Aides	30	0
21	Pharmacy Technicians	130	0
22	Physical Therapist Aides	40	0
23	Physical Therapist Assistants	80	0
24	Psychiatric Aides	30	0
25	Radiation Therapists	20	0
26	Radiologic Technologists and Technicians	140	0
27	Registered Nurses	3,230	0
28	Respiratory Therapists	120	0
29	Respiratory Therapy Technicians	30	0
30	Surgical Technologists	70	0
	<b>Total Openings vs. Graduates</b>	<b>7,600</b>	<b>185</b>

- Non-approved CTE programs are aligned with only four additional high-growth, in-demand job categories: medical billers and coders, emergency medical technicians, medical technicians, and medical technologists.

<sup>36</sup> These are program completers who passed a technical assessment.

### **CTE programs do not meet NYSED quality assurance standards.**

There is considerable variation in CTE program quality. According to an independent state-wide analysis of CTE programs, “(a)pproved CTE programs that offered college-articulated and industry-accredited courses were of higher quality than non-approved CTE programs.”<sup>37</sup>

- Of the 55 programs the DOE refers to as Career and Technical Education programs in health care, only 15 (or 27%) are state-approved.<sup>38</sup>

Without state-approval, parents and students cannot be sure that a particular CTE program offers quality, integrated instruction, qualified faculty, industry-recognized technical assessments and post-secondary articulation agreements—all of which help to ensure future success in the workplace.

### **The process of seeking state approval for CTE programs is moving too slowly to help stem the labor shortage in the local health care industry.**

- 39 of the 40 CTE programs in health services that are not state-approved have not submitted applications for approval.<sup>39</sup>  
Of the 39 non-approved programs that have not submitted an application to the state:
  - Nine have no plans to seek state approval because they do not meet NYSED policy regulations.
  - Four programs in Bio-Medical and Medical Technology have not applied for approval because the field lacks an approved teacher certification and the schools have not identified an appropriate technical assessment.
  - One program in Sports Medicine needs to develop formalized curriculum.
  - One Emergency Medical Technician program may not operate this year due to low enrollment.
  - Sixteen Medical Assistant and Medical Billing and Coding programs are updating their curriculum and will begin the approval process this year.
  - Eight other programs have initiated the program approval process, or indicated that they plan to initiate the approval process this academic year.
- Individual schools are not coordinating when applying for state-approval. For example, there are currently 10 non-approved medical billing and coding programs in 10 different schools. According to the DOE, each program is updating its curriculum and planning to conduct a separate self-study and external review this academic year.
- CTE programs may lack the necessary resources to obtain state-approval in a timely fashion.
  - According to the DOE, "the majority (of not-yet-approved programs) plan to seek NYSED approval of their CTE programs. Sufficient resources,

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<sup>37</sup> MAGI, *The Face of Career and Technical Education in New York State: Year 2 Evaluation Report*, September 2005.

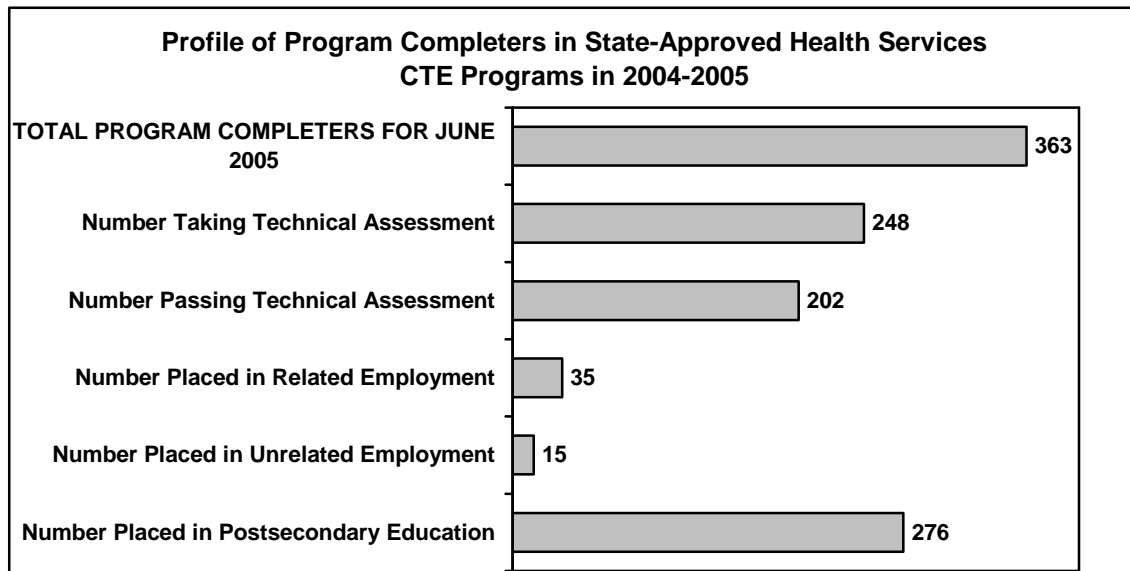
<sup>38</sup> The percentage of approved programs is even lower (24%) when using the program data listed on the DOE website. See 31.

<sup>39</sup> The data in this finding is based on information provided by the DOE to this office in August 2006.

time, and adequate staff are being identified and allocated to assist (these programs." An independent statewide analysis of CTE programs cites a lack of resources as one obstacle to state approval.<sup>40</sup>

**The majority of students who completed a state-approved health care CTE program in 2004-2005 went on to postsecondary education.**

- Of the 363 students who completed a state-approved program last year, 35 (10%) were placed in related employment, and 276 (76%) were placed in postsecondary education. The DOE data provided to this office did not indicate the area of study each student placed in postsecondary education is pursuing.



While it is impressive that students enrolled in the state-approved health services CTE programs are attending postsecondary education at such a high rate, the DOE should track these students to determine whether they seek and obtain employment in the health care industry after completing their education.

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<sup>40</sup> See 37.



## **PART II**

### **Employers cite a lack of qualified candidates in the labor force.**

According to human resource executives surveyed, there are not enough qualified candidates in the labor force for a variety of positions.<sup>41</sup>

- 100% cite a lack of qualified Registered Nurses.
- 88% cite a lack of qualified Respiratory Therapy Technicians.
- 82% cite a lack of qualified Respiratory Therapists.
- 80% cite a lack of qualified Radiologic Technologists and Technicians.
- 76% cite a lack of qualified Medical and Clinical Laboratory Technologists.

### **State-approved CTE programs are not aligned with industry demand.**

- There are no state-approved programs that prepare young people for the following positions for which employers surveyed stated they have the most difficulty recruiting: medical and clinical laboratory technologists, radiologic technologists and technicians, respiratory therapists, respiratory therapy technicians, medical billers and coders, x-ray technologists, mammographers, medical assistants, and central supply attendants.

### **Employer awareness of CTE programs is low.**

- 85% of human resource executives surveyed were unfamiliar with New York City's high school Career and Technical Education programs.
- Of the 15% who said they were familiar with New York City's high school CTE programs:
  - None could identify any of New York City's high school CTE programs in health services.
  - None were aware that students graduating from state-approved CTE programs earn a special technical endorsement on their diploma when they pass an industry-approved technical assessment.
  - None were aware that in 2001, NYSED introduced a new CTE model that raised both academic and technical standards.

### **Employers do not think New York City's high school students are being adequately prepared for careers in health services.**

- Employers and union job service coordinators surveyed expressed concern that New York City high school students lack the necessary math and science skills, reading and writing skills, overall job readiness skills and practical experience.

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<sup>41</sup> The percentages included in this finding are based upon responses from human resource executives who stated that they recruit for each of these positions.

### **Employers identify room for improvement in New York City high school education.**

- 100% of HR executives surveyed believed that improving guidance counseling would better prepare young people for careers in health services.
- 95% of HR executives surveyed believed that improving overall math and science skills would better prepare young people for careers in health services.
- 90% endorsed offering more practical experience in the workplace in the form of internships, mentorships and clinical rotations.
- 75% of HR executives also endorsed better aligning high school curriculum with industry labor force requirements.

### **Employers are willing to participate in the state-approval process.**

- 79% of HR executives would be willing to participate in an external review of a CTE program seeking state approval and in the creation of new industry technical assessments. (The remaining 21% said they would be willing to participate on the conditions that their superiors approved, that time and resources permitted, and/or that the program curriculum was relevant to their facility).
- Employers at New York City’s public and private hospitals, 1199SEIU Training and Employment Funds, and the Greater New York Hospital Association have all expressed a willingness to participate in making high school career and technical education a success.

### **Employers assign greater value to state-approved programs.**

- 55% of employers said they would prefer to hire a graduate of a state-approved CTE program (versus a non-approved CTE program).<sup>42</sup> Employers positively associated state-approved programs with “greater added value,” “more evolved curriculum” and “higher criteria.” One human resource executive commented that “State and regulatory agencies are starting to require more certification and that [state-approved CTE programs] are in keeping with the focus for the future.”
- The remaining 45% of employers said that they did not have enough information on state-approved programs and that, in the end, it all depends on the individual qualifications of each applicant.
- All of the respondents expressed support in principle for the state-approved model.

### **There is a disconnect between employer recruitment and employer volunteer centers, which typically coordinate students’ on-site learning opportunities.**

- Of the hospitals whose human resource executives said they were not familiar with CTE programs, 41% are listed as outreach partners in the New York City High School Directory for 2006-2007.<sup>43</sup>

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<sup>42</sup> Prior to asking questions about the value of state-approved CTE programs, the surveyor read employers a description of the CTE model. See page 23 for a copy of the script.

<sup>43</sup> Most outreach programs in hospitals appear to be located within a volunteer center separate from employment services.

**It is difficult for parents and students to obtain information about state-approved programs from the DOE.**

- State-approved CTE programs are not identified in the Directory of the New York City Public High Schools for 2006-2007.
- It is difficult for users to identify state-approved programs on the DOE website.
  - A “Programs > CTE Programs by Category” link leads to a list of high schools and the CTE programs within those schools.
  - To find a list of state-approved CTE programs, however, parents and students need to follow a separate “About Us > CTE Approval Process” link and then scroll to the bottom of the page.
- Identifying state-approved programs was a priority for parents at the New York City DOE Workshop Series for 8th Grade Students and Families.<sup>44</sup>

**RECOMMENDATIONS**

In order to better connect students with living wage careers and simultaneously improve the quality and quantity of workers who can fill vacancies in the health care industry, the Public Advocate makes the following recommendations to the DOE:

**Increase the number of CTE graduates trained to work in the most-needed positions within the health care industry.**

- Expand existing programs that: (1) prepare students for jobs identified as “very favorable” or “favorable” by the New York State Department of Labor; and (2) prepare young people for positions for which the industry has the most difficulty finding qualified candidates.

**Better align CTE curriculum with favorable employment opportunities and with health care industry labor force requirements.**

- Identify and implement additional CTE programs that will train students for a range of high-demand, living-wage positions in health services. Work with the city’s health care employers to prioritize the most critical CTE programs based on the most critical vacancies.

**Improve the quality of CTE graduates by accelerating the process of completing applications for state-approval.**

State approval ensures parents and students that CTE programs provide quality instruction and faculty, as well as industry and post-secondary alignment.

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<sup>44</sup> After the DOE presentation on CTE, parents expressed concern about how to distinguish between state-approved and non-approved programs. The DOE suggested looking on-line or asking school administrators at the high school fairs whether or not their CTE program was state-approved.

- The DOE should accelerate the process of applying for state-approval by providing additional resources and support. Greater completion of the approval process will improve the quality of CTE, ensuring that students are better prepared for post-secondary education and careers in health services.

**Investigate the value of centralizing CTE programs.**

- Centralizing certain programs, such as medical billing and coding, so that there is one program per borough or Region, could help ensure that more students graduate from state-approved programs with high standards.
- Centralizing programs could allow for the more efficient use of resources, including faculty salaries, faculty training funds, classroom materials, and lab equipment.

**Increase guidance counselor, parent, and student awareness of favorable employment opportunities in health care.**

- Engage industry partners to promote favorable employment opportunities at elementary school and middle school career days.
- Work with the city’s health care employers and DYCD to identify the best way to market these positions to young people.

**Increase employer awareness of—and participation in—CTE programming.**

For the new CTE model to succeed, the DOE must more effectively engage key industry stakeholders like employers and unions. Stakeholder participation is essential for aligning CTE curriculum with industry demand, which is necessary for producing qualified workers and for connecting young people with living wage jobs.

- Engage industry partners in CTE program and curriculum development.
- Engage industry to provide more work-based learning experiences in the form of internships, mentorships, and clinical rotations.
- Increase employer awareness of CTE programs—especially the credentials earned by CTE graduates.
- Encourage hospital supervisors of CTE students to share information about those students’ qualifications with hospital recruiters.

**Highlight state-approved programs in the high school directory and more effectively on the DOE website.**

**APPENDIX A**

**PHONE SURVEY**



**Office of the Public Advocate  
Policy and Research**

Date:	Phone Number:
Name:	Hospital Affiliation(s):
Title:	The Borough(s) for which you recruit:

- 1) For which allied health care positions do you have the most difficulty finding qualified candidates?
- 2) Do you think that New York City high school students are being adequately prepared for careers in health services?

Yes	No	Don't Know

Why or why not?

- 3) In which of the following ways can New York City better prepare young people for careers in health services?

Yes	No	Don't Know	
			Improve career counseling. <i>i.e. provide greater exposure to career opportunities in health care.</i>
			Better align high school curriculum with industry labor force requirements.
			Offer students more practical experience in the workplace.
			Improve overall math and science skills.
			Other

Other:

- 4) Are you familiar with New York City's old High School technical and vocational education programs?

Yes	No	Don't Know

If yes, how:

- 5) Are you familiar with New York City's new High School Career and Technical Education (CTE) programs?

Yes	No	Don't Know

If yes, how:

**If no, explain the new CTE model and skip to question 12.**

- 6) Are you familiar with any of New York City's High School CTE programs in health services?

Yes	No	Don't Know

If yes, with which programs are you familiar?

- 7) Are you aware that students graduating from state-approved CTE programs earn a special technical endorsement on their diploma when they pass an industry-approved technical assessment?

Yes	No	Don't Know

If yes, with which technical endorsement(s) are you familiar?

- 8) Are you aware that, in 2001, the New York State Education Department introduced a new Career and Technical Education (CTE) model which raised both academic and technical standards? *To receive state approval, CTE programs must meet the following five criteria: quality/integrated instruction, qualified faculty, industry-recognized technical assessments, post-secondary articulation agreements and data collection on student performance.*

Yes	No	Don't Know

- 9) Does your organization currently offer work-based learning experience to students in any CTE programs (internships, mentorships and/or job shadowing)?

Yes	No	Don't Know

If yes, for which programs?

How many hours of experience does each student typically receive?

10) Does your organization currently offer clinical rotations to students in any CTE programs (to meet a clinical requirement, ex. LPN)?

Yes	No	Don't Know

If yes, for which programs?

How many hours of experience will each student typically complete?

11) Has your organization ever participated in a self-study or external review process with a CTE program seeking state approval?

Yes	No	Don't Know

If yes, with what program(s) has your organization participated?

*Explain the new CTE model:*

*Career and Technical Education (CTE) is the new name for high school vocational education. By offering both rigorous academic and technical training, these new CTE programs are designed to prepare high school students for both college and career.*

*Graduates of CTE programs receive a technical endorsement on their high school diploma if they pass 5 Regents exams and if they pass an industry-approved technical assessment.*

*To receive state approval, CTE programs must meet the following five criteria: quality/integrated instruction, qualified faculty, industry-recognized technical assessments, post-secondary articulation agreements and data collection on student performance.*

*An example of a model CTE outcome: Student passes 5 Regents and the State Certified Nurse Assistant Exam. Student leaves high school prepared for work as a CNA or, having acquired the necessary prerequisites, to transition into a two or four-year nursing program. This outcome highlights the importance of both industry-recognized technical assessments and post-secondary articulation agreements.*

*There are currently 52 health services CTE programs in New York City. Thirteen of the 52 health services programs are currently state-approved. The 13 state-approved programs currently offer technical endorsements for Nurse Assistants, Licensed Practical Nurses and Dental Assistants.*

12) Would state-approved career and technical education programs better prepare young people for careers in the health services industry?

Yes	No	Don't Know

Why or why not?

13) Would you be willing to participate in a CTE program in any of the following capacities:

	Participating in an external review of a CTE program seeking state approval.
	Participating in the creation of new industry technical assessments.
	Providing work-based learning experience in the forms of internships or mentorships.

	Providing work-based learning experience in the form of clinical rotations.
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Why or why not?

14) Would you hire a graduate of a state-approved CTE program who has passed an industry-recognized technical assessment and who has practical experience?

Yes	No	Don't Know

15) Would you prefer to hire a graduate of a state-approved CTE program (versus a graduate of a not-yet approved CTE program)?

Yes	No	Don't Know

Why or why not?

**May I send you a one page follow-up via fax or e-mail?**

**What is your fax number or e-mail address?**



## FAX SURVEY

Please answer both questions below and **fax to 212 669 2633**. Thank you.


Date:	Phone Number:
Name:	Hospital Affiliation(s):
Title:	The Borough(s) for which you recruit:

For which positions do you recruit?		Job Title	Are there enough qualified candidates in the labor force?		
			Yes	No	N/A
Check all that apply:					
	1	Ambulance Drivers and Attendants, Except Emergency Medical Technicians			
	2	Cardiovascular Technologists and Technicians			
	3	Dental Assistants			
	4	Diagnostic Medical Sonographers			
	5	Dietetic Technicians			
	6	Emergency Medical Technicians and Paramedics			
	7	Home Health Aides			
	8	Licensed Practical and Licensed Vocational Nurses			
	9	Massage Therapists			
	10	Medical and Clinical Laboratory Technicians			
	11	Medical Assistants			
	12	Medical Equipment Preparers			
	13	Medical Equipment Repairers			
	14	Medical Records and Health Information Technicians			
	15	Medical Secretaries			
	16	Medical Transcriptionists			
	17	Nuclear Medicine Technologists			
	18	Nursing Aides, Orderlies, and Attendants			
	19	Occupational Therapist Aides			
	20	Occupational Therapist Assistants			
	21	Pharmacy Aides			
	22	Pharmacy Technicians			
	23	Physical Therapist Aides			
	24	Physical Therapist Assistants			
	25	Radiologic Technologists and Technicians			
	26	Psychiatric Aides			
	27	Radiation Therapists			
	28	Registered Nurses			
	29	Respiratory Therapists			
	30	Respiratory Therapy Technicians			
	31	Surgical Technologists			

**APPENDIX B**

**NYC HIGH SCHOOL CTE PROGRAMS IN HEALTH SERVICES<sup>45</sup>**

		Bio-Medical and Medical Technology	Dental Assistant	Dental Lab Technology	Emergency Medical Technician	First Responder	Medical Assistant	Medical Billing and Coding	Nurse Assisting	Practical Nursing	Sports Medicine	Vision Technology
1	Abraham Lincoln HS											
2	<i>Brooklyn Adult Learning Center</i>											
3	Canarsie HS											
4	Clara Barton HS											
5	Cooperative Technical Education											
6	Curtis HS											
7	DeWitt Clinton HS											
8	Far Rockaway HS											
9	<i>FDNY for Fire and Safety</i>											
10	Franklin K. Lane HS											
11	George Washington HS											
12	Grace Dodge HS											
13	Health Opportunities Secondary School											
14	Health Professions & Human Services											
15	Hillcrest HS											
16	Hostos-Lincoln Adademy											
17	Jane Addams											
18	John Adams HS											
19	Lafayette HS											
20	Louis D. Brandeis HS											
21	<i>Mid-Manhattan Adult Learning Center</i>											
22	New Utrecht HS											
23	New York Harbor HS											
24	<i>NYC Vocational Training Center</i>											
25	Office of Adult and Continuing Education											
26	Port Richmond HS											
27	Queens Gateway to Health Sciences Secondary School											
28	<i>School of Cooperative Technical Education</i>											
29	Sheepshead Bay HS											
30	Tottenville HS											
31	William H. Maxwell HS											

	<b>State-approved program</b>
	<b>Non-approved program</b>

Five institutions with programs that do not meet NYSED policy regulations because they offer either adult and/or non-school based programs are included above in italics.

This report used the following data, as provided by the DOE:

CTE programs in health services .....	55
NYSED-approved programs.....	15
% of approved programs.....	27%

The data supplied by the DOE (above) differs from the following program data on the DOE website:

CTE programs in health services .....	54 <sup>46</sup>
NYSED-approved programs.....	13 <sup>47</sup>
% of approved programs.....	24%

<sup>45</sup> As supplied by the DOE in a report to the Public Advocate on August 22, 2006.

<sup>46</sup> [www.nyccte.org/programcategory.asp?mid=3](http://www.nyccte.org/programcategory.asp?mid=3)

<sup>47</sup> [www.nyccte.org/program\\_list.asp?mid=2](http://www.nyccte.org/program_list.asp?mid=2)