



High Schools & Careers:
The New Value Proposition

An Issues Framing Paper

Preface

There is a crisis in U.S. education, not just in terms of the inadequate academic performance of a significant proportion of students, but also in terms of the growing lack of connectivity between education, the realities of the world of work and the human capital needs of leading U.S. employment sectors.

U.S. education is relentlessly geared towards student enrollment in four-year degree programs and, as a result, is increasingly neglecting legitimate education and training options at the certificate and two-year degree level. These more vocationally-oriented qualifications provide entrée to a broad variety of rewarding, family-sustaining-wage jobs, yet there is strong evidence that too few students follow, or even are informed about, these pathways.

A lack of sufficiently trained, entry-level and technical workers has an increasingly negative impact on the performance of many sectors of the U.S. economy. This includes such critically important sectors as manufacturing and health care. In health care, the largest and fastest growing sector of the national economy, the shortage of support staff, nurses and technical personnel has reached crisis proportions across the country. Health care provides a unique ladder of diverse career opportunities, yet few high school students or graduates have been exposed to, much less understand, the job opportunities and career progression that awaits them in this sector.

This framing paper forcefully illustrates problems with the current education-to-career continuum. It is designed to be provocative; to stimulate new ideas and thoughts on potential solutions to U.S. education and workforce preparation challenges. While the paper focuses on the challenges and opportunities in the healthcare sector, many of these issues are universally seen in other sectors of the U.S. economy. Using graphics, key statistics and information from leading thinkers in U.S. education reform and career training, the pages that follow challenge the reader to think about actions they can take to stimulate change in the system.

Table of Contents

Page

I.	Introduction.....	1
II.	Growing Recognition of Healthcare Workforce Challenges.....	2
III.	The U.S. Healthcare Economy.....	3
IV.	A Diversity of Employment Opportunities.....	4
V.	Jobs Across a Spectrum of Education and Training Qualifications.....	6
VI.	Health Care is a Specialized Working Environment.....	7
VII.	A Growing Demand for Healthcare Workers.....	8
VIII.	Future Healthcare Workforce Demand.....	10
IX.	Education – Supply Side Challenges to Workforce Readiness.....	12
X.	The Current System is Failing.....	15
XI.	An Education System and Workforce Demand Mismatch.....	16
XII.	An Appropriate System for Education and Workforce Delivery.....	17
XIII.	Options for Alternative Education and Training Paths.....	18
XIV.	Career Majors.....	19
XV.	Tech Prep.....	20
XVI.	Schools-Within-Schools.....	21
XVII.	Magnet Schools/Academies.....	22
XVIII.	Charter Schools.....	24
XIX.	Complementary Learning.....	25
XX.	Center for Career Learning.....	26
XXI.	Changing the System – Changing Attitudes.....	29
XXII.	Issues to be Confronted.....	30
XXIII.	Barriers to Change.....	32
XXIV.	Key Questions in Moving Forward.....	33
XXV.	Further Reading.....	34
XXVI.	About Health Careers Futures and the Jewish Healthcare Foundation.....	35

I. Introduction

Health care is the largest employment sector in the nation, providing work for 13.5 million people. Through 2014, health care will also be the leading generator of new jobs in the U.S. economy, with upwards of 3.6 million additional personnel required.

This vast and rapidly growing sector is highly labor intensive. Most of the business of health care is hands-on and people-driven and, as a result, the majority of healthcare tasks cannot be outsourced or off-shored. The sector demands a well-educated and prepared U.S.-based population to staff its positions. Indeed, without a skilled workforce it is impossible to deliver high-quality, cost-effective, modern health care. It is clear that workforce quality is key to the proper application of modern medical therapies, the deployment of advanced biomedical technologies, and the implementation of best practices and tools to ensure that patients receive the best medical care possible.

The care of peoples' health is both high-tech and high-touch – requiring an education that balances technical and interpersonal skills. Healthcare workers must be comfortable in a fast-paced, high-pressure, quality-oriented environment in which human error may exact extremely high costs. To succeed in this challenging environment, workers must be specially prepared. Indeed, work across the full spectrum of jobs in health care, whether they are in frontline clinical care or behind-the-scenes support and administrative operations, increasingly demands personnel with strong foundational learning in mathematics, science and literacy skills.

With an aging and growing population generating rapidly increasing demand for healthcare services, the need for a well-educated, work-ready population to staff new positions is of critical importance to the nation. Unfortunately, it is increasingly apparent that traditional education systems and career pathways in the U.S. are failing to deliver the prepared population required.

This framing and discussion paper outlines key issues, challenges and opportunities facing workforce development for the U.S. healthcare sector. Its purpose is twofold:

- 1) Raise awareness and promote dialogue on healthcare workforce education, training and supply issues.
- 2) Set the stage for discussion relating to alternative models for career-oriented education and other approaches aimed at increasing the nation's base of work-ready, high school graduates.

This framing and discussion paper is designed to begin the conversation and outline some of the critical issues facing education and workforce development for the healthcare sector. Key topics addressed include:

- The structure and importance of the healthcare economy
- The diversity of healthcare employment opportunities
- The growing demand for workers
- The broad range of education and training requirements for healthcare careers
- The specialized working environment of health care
- Current challenges in healthcare workforce education
- Vocational education and training options for health careers
- Model systems for education reforms and workforce delivery

II. Growing Recognition of Healthcare Workforce Challenges

“The shortage of nurses and other health professionals continues to be the dominant story in the healthcare industry. Unfortunately, it’s likely to remain that way for at least the next decade. As the demand for health services increases, the supply of healthcare workers is simply not keeping up. We’re now calling it a shortage, but in a few years, it will be a public health crisis.”

Sandra Feldman, Past President – American Federation of Teachers

“Some 126,000 nursing positions in the United States are unfilled and the lack of staff is putting patients' health in grave danger. The report found that nursing shortages are responsible for 19 percent of medical errors resulting in death or serious injury, and that more than 90 percent of nursing homes lack a sufficient number of healthcare workers to provide even the most basic care.”

Joint Commission on Accreditation of Healthcare Organizations

“Between now and 2015, the nation will likely need more than three million additional work-ready personnel within the healthcare sector. Where they will come from nobody knows. We continue to recommend four-year college to almost everyone while high-quality healthcare jobs, with family-sustaining wages, needing only high school diplomas, certificates or two-year degrees are sitting unfilled across our nation.”

Karen Wolk Feinstein, President and Chief Executive Officer – Jewish Healthcare Foundation

Health care is the largest sector of the U.S. economy and growing fast.

III. The U.S. Healthcare Economy

Health care is the largest employment sector in the nation – employing 13.5 million people. It is also the leading creator of new U.S. jobs, with 3.6 million new positions projected to be generated between 2004 and 2014.

Distributed across 545,000 establishments, health care provides employment in every state in the nation. Healthcare establishments exist in diverse geographic settings ranging from small rural communities to the largest urban centers, with a major concentration of advanced specialty care institutions located in the United States’ inner-city urban cores. The importance of the distributed structure of healthcare employment is punctuated by the fact that it is often the leading employer in small U.S. towns and cities, and is a key economic engine in diverse inner-city communities.

Establishment Type	Percent of Establishments	Percent of Employment
Hospitals (public and private)	2	41
Nursing and residential care facilities	12	21
Offices of physicians	37	16
Offices of dentists	21	6
Home healthcare services	3	6
Offices of other healthcare practitioners	19	4
Outpatient care centers	3	3
Other ambulatory healthcare services	2	2
Medical and diagnostic laboratories	1	1

Although they comprise less than 2% of all healthcare establishments, hospitals represent the single largest employer group within the sector (accounting for 41% of healthcare jobs). Nursing and residential care facilities also constitute a major employment category, accounting for 21% of sector employment (and likely to grow significantly). The offices of healthcare practitioners (including doctors, dentists and other healthcare providers) together account for 25% of employment positions.

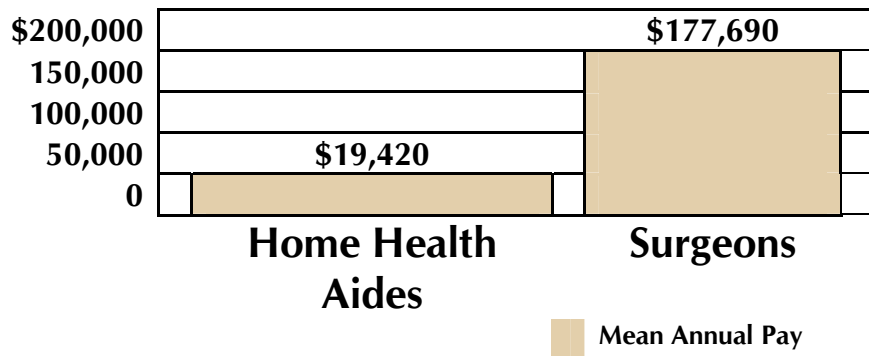
The sector provides diverse jobs for people from all socio-economic groups.

IV. A Diversity of Employment Opportunities

With jobs ranging from janitorial staff to the most highly-skilled surgeons, from secretarial personnel to senior health system administrators, from parking lot attendants to helicopter pilots, no other sector of the economy provides such diverse and broadly distributed employment opportunities. Healthcare occupations provide a range of wage and salary positions supporting families across the U.S. socio-economic, educational and geographic spectrum.

Macro Occupation Category	Employment	Mean Annual Pay
All U.S. Occupations	130,307,840	\$37,870
Healthcare Practitioner and Technical Occupations	6,547,350	59,170
Healthcare Support Occupations	3,363,800	23,850
Community and Social Services Occupations	1,692,950	37,530
Medical and Health Services Managers	230,130	77,140

Diverse Compensation Levels in Health Care



The sector provides diverse jobs across a broad range of pay scales.

Selected Healthcare Occupations	Employment	Mean Annual Pay
Surgeons	53,000	\$177,690
Family and General Practitioners	112,000	140,370
Dentists, General	86,000	133,680
Pharmacists	230,000	88,650
Physician Assistants	63,000	71,070
Physical Therapists	151,000	65,350
Radiation Therapists	14,000	63,620
Dental Hygienists	161,000	60,620
Nuclear Medicine Technologists	18,000	60,530
Registered Nurses	2,368,000	56,880
Radiologic Technologists and Technicians	1845,000	47,010
Respiratory Therapists	95,000	46,270
Licensed Practical and Licensed Vocational Nurses	710,000	36,210
Surgical Technologists	84,000	35,920
Medical and Clinical Laboratory Technicians	142,000	33,170
Medical Records and Health Information Technicians	160,000	28,720
Emergency Medical Technicians and Paramedics	197,000	28,440
Pharmacy Aides	47,000	20,310
Home Health Aides	663,000	19,420

More than 78% of U.S. healthcare jobs require less than a bachelor's degree.

V. Jobs Across a Spectrum of Education and Training Qualifications

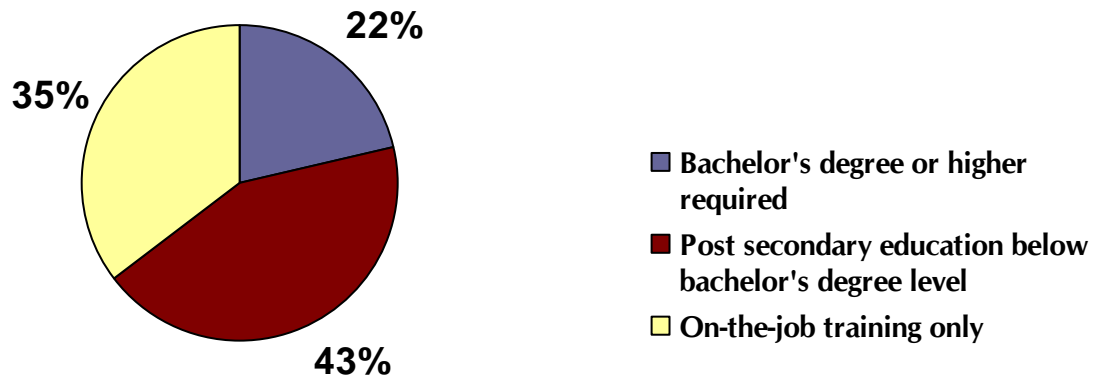
Education and training demands for healthcare careers are split into three main categories: jobs requiring on-the-job training only; jobs requiring postsecondary education below the bachelor's degree level; and jobs requiring a bachelor's degree or higher.

Of these, the jobs requiring a bachelor's degree or higher form a comparatively small component of total demand. **Indeed, more than 78% of all healthcare jobs do NOT require a bachelor's degree.**

Instead, it is clear that postsecondary education and training, below the bachelor's degree level, is of critical importance in assuring that the workforce needs of the healthcare sector are met. Similarly, the production of work-ready, high school graduates is critical to efficient and productive operation of our healthcare system.

**Training Requirements for Healthcare Occupations:
Percent of Trained Workers Required by Training Level for
Projected National Workforce Increase 2004 – 2014**

Healthcare Occupation Training Requirement	Percent	Number
First professional degree	5.5	165,000
Doctoral degree	0.3	9,000
Master's degree	5.7	170,000
Bachelor's or higher degree, plus work experience	2.6	79,000
Bachelor's degree	7.4	222,000
Associate's degree	27.4	823,000
Postsecondary vocational training	15.6	468,000
High school + moderate-term, on-the-job training	10.8	325,000
High school + short-term, on-the-job training	24.6	737,000



VI. Health Care is a Specialized Working Environment

The healthcare sector imposes unique demands for trained, work-ready personnel with the capabilities, characteristics and work skills required to operate in a high-tech, high-touch environment. Among the specialized labor characteristics of the sector are:

- **A substantial demand for persons in positions requiring significant levels of specialized education and occupational training.** The delivery of clinical healthcare services, in particular, is highly specialized and stratified, requiring the acquisition of specific skills and credentials.
- **A strong “service jobs” orientation.** The majority of personnel are engaged in the delivery of frontline clinical services or tasks in support of healthcare provision. Both technical and soft (human interaction and communication) skills are required across the majority of healthcare jobs.
- **A quality-oriented environment.** With frontline responsibility for patient care of Americans ranging from prenatal infants to senior citizens, the healthcare workforce has to strive to provide care of the highest quality within what is often a high-pressure, high-stress delivery environment. Patient safety and individual lives are placed in the hands of the healthcare system every day, creating an environment in which quality control, attention to detail and observance of established protocols are absolutely critical.
- **A cost-pressured environment.** Healthcare institutions and providers must work to accomplish quality outcomes in a cost-constrained environment. The cost of health care, health insurance, prescription drugs and other associated costs are regularly highlighted in the U.S. media and healthcare providers understand the delicate balance that needs to be struck in providing high-quality care within an increasingly cost-conscious delivery system.
- **A litigious environment.** With patient health and safety on the line daily, it is perhaps not surprising that the healthcare sector operates within a highly litigious environment. The high risks and costs associated with lawsuits place additional pressure for performance on clinical staff and administrators.
- **A personal risk environment.** Frontline clinical personnel are at risk of Occupational Injury and Illness (OII) as they come in contact with infectious diseases and other hazards on the job. The incidence of OII within hospitals, for example, is 8.7 cases per 100 workers (versus 5.0 within private industry as a whole).
- **A changing environment.** Healthcare personnel have to operate within a dynamic system comprising technological, scientific, best practice and environmental changes. This changing environment places a demand on much of the healthcare workforce for continuing education, skills enhancement and training in new technologies, procedures and practices. The healthcare sector thus places special demands on its human resources and requires that the U.S. labor market supply a well-educated, adaptable, work-ready populace for absorption into the complex healthcare system.
- **A higher than average requirement for round-the-clock, 24/7 service delivery.** Frontline jobs within health care are seldom “9 - 5” positions. There is a distinct need for shift work and atypical working schedules across multiple staffing positions.

There is substantial growth taking place in the healthcare sector, causing a pressing demand for more workers.

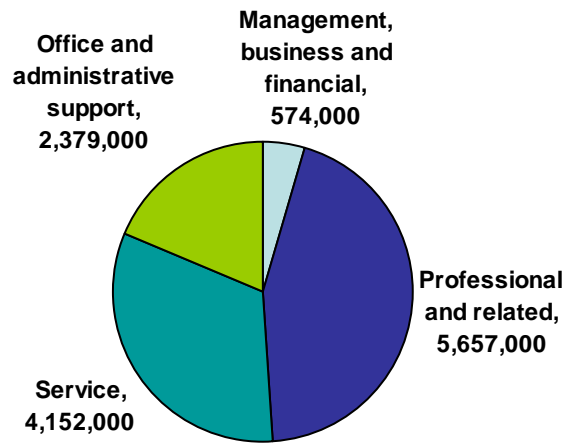
VII. A Growing Demand for Healthcare Workers

2004 - 2014 projections by the Bureau of Labor Statistics indicate dramatic increases needed for many categories of healthcare workers.

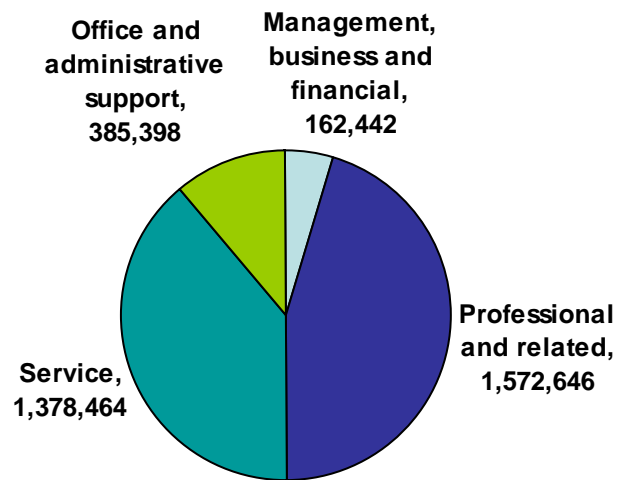
Occupation	Projected Jobs Increase 2004 - 2014
Total, all Occupations	3,566,000
Professional and related Occupations	1,573,000
Registered Nurses	606,000
Physicians and Surgeons	120,000
Therapists	117,000
Licensed Practical and Licensed Vocational Nurses	83,000
Diagnostic-related Technologists and Technicians	71,000
Dental Hygienists	67,000
Clinical Laboratory Technologists and Technicians	58,000
Social Workers	50,000
Counselors	48,000
Health Diagnosing and Treating Practitioner Support	41,000
Medical Records and Health Information Technicians	40,000
Social and Human Service Assistants	38,000
Emergency Medical Technicians and Paramedics	34,000
Physician Assistants	29,000
Dentists	18,000
Pharmacists	11,000
Chiropractors	10,000
Psychologists	9,000
Dieticians and Nutritionists	6,000
Optometrists	5,000
Health Educators	5,000
Podiatrists	2,000
Service Occupations	1,378,000
Housekeeping	75,000
Food Preparation and Serving-related Occupations	58,000
Physical Therapist Assistants and Aides	39,000
Home Health Aides	304,000
Nursing Aides, Orderlies and Attendants	273,000
Medical Assistants	194,000
Personal and Home Care Aides	189,000
Medical Transcriptionists	18,000
Dental Assistants	112,000
Office and Administrative Support Occupations	385,000
Medical Secretaries	60,000
Billing and Posting Clerks and Machine Operators	20,000
Receptionists and Information Clerks	110,000
Management, Business and Financial Occupations	162,000
Medical and Health Services Managers	46,000
Top Executives	34,000

Additional workers will be needed across a broad range of healthcare job classifications.

2004 Distribution of the Healthcare Workforce



2004 - 2014 Additional Healthcare Personnel Required



The majority of occupations in health care is growing faster or much faster than the national average.

VIII. Future Healthcare Workforce Demand

Most healthcare occupations are growing faster than other careers.

Occupational Information Network (O*Net) High-Growth Occupations Projected for the Healthcare Sector 2004 - 2014

Occupation	Growth 2004 - 2014	Projected Need
Home Health Aides	MUCH FASTER THAN AVERAGE	431,000
Personal and Home Care Aides		400,000
Medical Assistants		273,000
Dental Assistants		189,000
Dental Hygienists		82,000
Physical Therapists		72,000
Physician Assistants		40,000
Physical Therapist Assistants		36,000
Registered Nurses		1,203,000
Nursing Aides, Orderlies and Attendants	FASTER THAN AVERAGE	516,000
Pharmacy Technicians		107,000
Medical and Health Services Managers		105,000
Pharmacists		101,000
Radiologic Technologists and Technicians		76,000
Medical and Clinical Laboratory Technicians		76,000
Emergency Medical Technicians and Paramedics		74,000
Medical and Clinical Laboratory Technologists		74,000
Medical Records and Health Information Technicians		69,000
Rehabilitation Counselors		61,000
Respiratory Therapists		57,000
Mental Health and Substance Abuse Social Workers		51,000
Mental Health Counselors		48,000
Medical and Public Health Social Workers		48,000
Medical Transcriptionists		44,000
Occupational Therapists		43,000
Massage Therapists		42,000
Substance Abuse and Behavioral Disorder Counselors		39,000
Medical Scientists, except Epidemiologists		37,000
Surgical Technologists		36,000
Cardiovascular Technologists and Technicians		23,000
Diagnostic Medical Sonographers	23,000	
Physical Therapist Aides	22,000	
Chiropractors	22,000	
Occupational Therapist Assistants	10,000	
		4,530,000

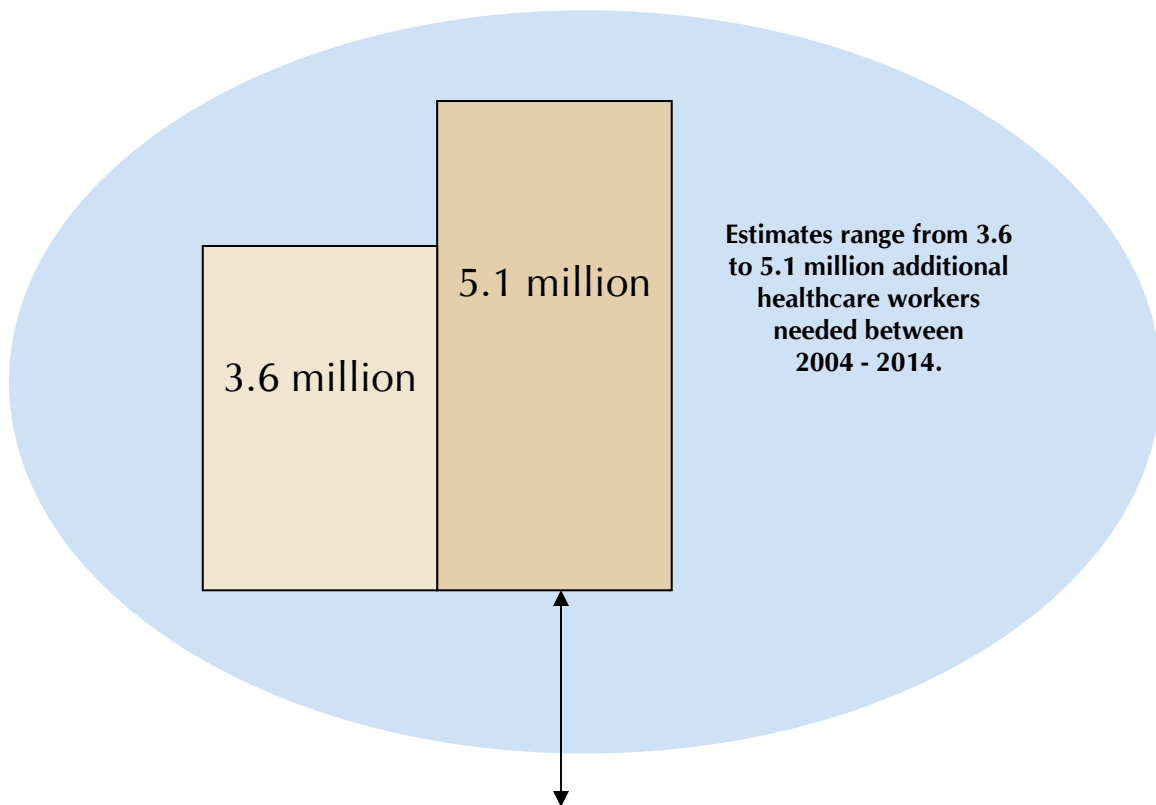
Health care may require between 3.6 and 5.1 million additional workers between 2004 - 2014.

In addition to these “faster than average growth” occupations, O*Net projects increasing demand for multiple other categories of healthcare workers (albeit categories growing only at the national average rate).

These include some job categories with some **very large increases** projected, including:

- Licensed Practical and Licensed Vocational Nurses (**282,000**)
- Medical Secretaries (**135,000**).

In total, O*Net anticipates the total healthcare workforce in the U.S. expanding by 5.1 million personnel between 2004 - 2014.



To put 5.1 million additional healthcare jobs in perspective – this is more than the entire existing employment in major sectors of the U.S. economy, such as:

- Telecommunications (1.1 million)
- Legal Services (1.8 million)
- Architecture and Engineering (2 million)
- Hotels and Motels (1.2 million)
- U.S. military (2.1 million)

The nation's education system is not keeping pace with occupational demand, and is not structured to do so.

IX. Education – Supply Side Challenges to Workforce Readiness

Data show that only 22% of healthcare occupations require training comprising a bachelor's degree or higher. Thus, by far the greatest workforce demands within the sector are for persons educated below the bachelor's level (78% of the healthcare workforce).

It is clear that the U.S. education and workforce preparation system needs to be providing an appropriately educated and trained populace across a wide range of education levels. However, just as this demand for a broadly-tiered, multi-level system of appropriate educational attainment has come to the fore in health care (and in many other sectors of the U.S. economy), education and training opportunities within the nation have instead compacted and narrowed. The U.S. educational system has largely put its collective faith in a “one way to win” philosophy, whereby the vast majority of “training” is assumed to occur through the pursuit of a four-year bachelor's degree.

The idea that the only way to be successful and get ahead in life is to get a bachelor's degree – and to pursue that degree immediately after completing high school – has become frighteningly reflexive, generating almost no critical questioning. Within two years of graduating from high school, 72% of graduates are enrolled in higher education with 95% saying they are doing so to earn a bachelor's degree. Only 4% of U.S. high school graduates indicate that they plan to study in technical areas at the pre-bachelor (one or two-year) level¹ and then move into the workplace.

While the pursuit of a bachelor's degree in general, and immediately after high school in particular, may be the appropriate path for many students, there is sufficient evidence that this path is a poor investment for many who embark upon it to prompt a critical look at the policies that promote it as the only legitimate path.

Perhaps one of the most important critiques of the “one way to win” approach is that three out of every four students admitted to four-year degree programs effectively fail – either by failing to graduate or by failing to find employment upon graduation that requires a four-year degree. The vast majority of enrollees are also targeting jobs in “the professions,” yet such jobs represent only 20% of U.S. occupations and the competition is so intense that most jobseekers will not get them – least of all the academically average and those from less-prestigious, open-enrollment colleges or universities.

The significance of this mismatch is highlighted further by the fact that, as healthcare sector data show, the largest occupational demands (today and into the future) are for workers qualified with certificates or two-year degrees – exactly the alternative postsecondary pathways to work that the education system is increasingly ignoring. However, even jobs requiring four-year degrees are often unfilled: there is a considerable skills mismatch between the good technical and vocational opportunities going unfilled in the workforce and the skills/credentials, or lack thereof, of the large volumes of students who do graduate with liberal arts, humanities and social science degrees. Only 12% of degrees awarded in the U.S. are in technical fields.

¹ Kenneth C. Gray and Edwin L. Herr. “Other Ways to Win: Creating Alternatives for High School Graduates.” Second Edition. California, Corwin Press, Inc. 2000.

Compounding national education and career training issues are other serious policy challenges:

- Open university enrollments and the widespread availability of student aid (almost always in the form of debt/loans) means that almost anybody can get into a four-year degree program, no matter how poorly prepared they are academically.
- The push to send students to four-year college has diluted the quality of high school education and drives grade inflation because schools are evaluated based on the percentage of their graduating class admitted to four-year colleges. Ninety percent of incoming freshman in 1998 reported a “B” average or better, a significant rise over previous decades, despite the fact that national standardized test scores were stagnant or declining.
- The “one way to win” mentality creates perceived “second-class” citizens of those who do not pursue a four-year degree. It effectively devalues legitimate alternatives that can lead to high-skill/high-wage employment in health care and other careers that require a one- or two-year technical certificate, associate’s degree or on-the-job training.
- Enrollment in vocational programs within high schools has dramatically declined, causing the closure of many programs or their shift to serving only special needs populations.
- The concentration of students and resources within four-year institutions has reduced resources for, and enrollment in, the vocational and technical training programs from which health care and other industries require graduates. Vacancies in technical schools and vocational programs are left unfilled, even though there is a significant demand for successful graduates from most of these programs.

There are clearly multiple problems associated with the “one way to win” pathway. Combating the “one way to win” philosophy is not going to be easy, but it is a task of national strategic importance and must be done.

Evidence suggests that it is incorrect to assume that employers will provide occupational training if high schools do not. Only one in five workers ever receives any training from their employers during their career. Those who do are usually middle- or upper-level managers, not hourly wage personnel.² This lack of substantive training is occurring despite the fact that there is a clear need for it:

- A 1994 study by the National Center for Education Statistics found that 48% of the population volunteered that they did not feel they had adequate literacy skills to perform their job.
- In a 1991 Harris Poll, only one-third of national employers reported that recent high school graduates had sufficient reading comprehension skills and only 25% had sufficient math skills.
- Thurow³ reports that 63% of American employers say that high school graduates have not learned the basic skills needed to succeed at work, and only 4% of these employers say that graduates are good in writing and 5% say they are good at math.

² Carnivale, A; Gainer, L. and Villet, J. “Training in America: The Organization and Strategic Role of Training.” California, Jossey-Bass. 1990.

³ Lester C. Thurow. “Building Wealth: The New Rules for Individuals, Companies, and Nations in a Knowledge-Based Economy.” New York, Harper Collins Publishers. 1999.

- The bottom 25% of the graduating high school classes in Japan and Korea score above the American high school median.

Economic trends are pointing to demand for a highly occupationally-skilled workforce at a time when vocational education and training is experiencing enrollment decline. Numerous reports indicate that workers in the future will need higher levels of skills, particularly in mathematics, science, and reading comprehension, as well as new decision-making and teamwork skills. These are not, however, the skills being taught to the vast majority of high school graduates upon their entry to higher education. In addition, workplace literacy will increasingly require “self directed learning” – whereby one teaches oneself new occupational skills – yet few observers predict that the average high school graduate from the lower 2nd, 3rd or 4th quartiles of their class will be so equipped.

There is also evidence that four-year college is now, for many students, simply a pathway to remedial education – a very expensive means for gaining the education they should have received in high school. According to the U.S. Department of Education, “forty percent of college students have to take at least one remedial education course and most are unprepared for college-level math and science.”⁴

A picture emerges of a system that is “passing the buck.” With four-year degrees the default goal for everyone, high schools simply teach academic classes and ignore vocational and career education. This simplifies the curriculum and makes vocational and career education “someone else’s problem.” High school counselors simply advise students on which colleges to apply to, while career and vocational counseling falls by the wayside. Anyone can get into college, so high schools get away with moving their substandard graduates out to remedial education programs at colleges and universities.

What emerges is an immensely wasteful and expensive system – a system that fails to provide tangible benefits for a substantial majority of participants, and generates poor economic and social returns for U.S. society.

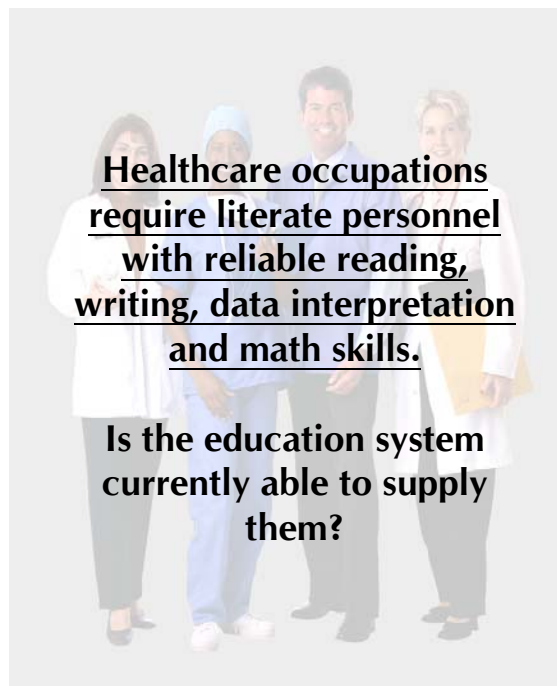
⁴ U.S. Department of Education. “Transforming Higher Education: Access and Affordability for All Students.” March 2007.

Far too many high school graduates lack the basic skills to be employable in health care.

X. The Current System is Failing to Meet U.S. Needs at Both the National and Local Levels

Education and training is a significant issue facing Southwestern Pennsylvania, for example. Survey research performed among employers by the Pittsburgh Technology Council found that:

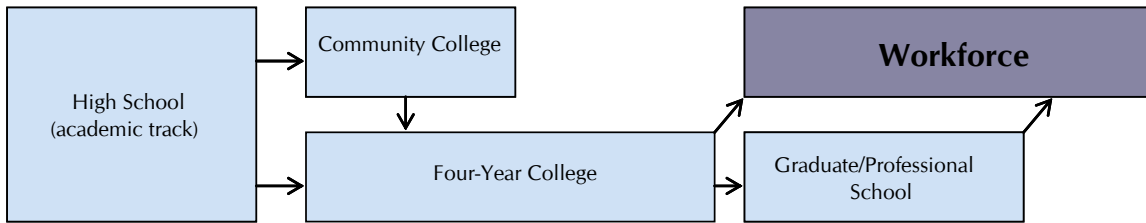
- Forty percent of all high school seniors lack the applied math skills to be well prepared for a lifetime of learning.
- Forty-three percent of seniors receive reading scores that may limit them to jobs that pay less than \$20,000 a year.
- Ninety-one percent of students lack the skills in interpreting graphs needed for professional occupations such as teaching and accounting.
- On average, one-third of all applicants for local jobs are rejected because of inadequate reading or writing skills.



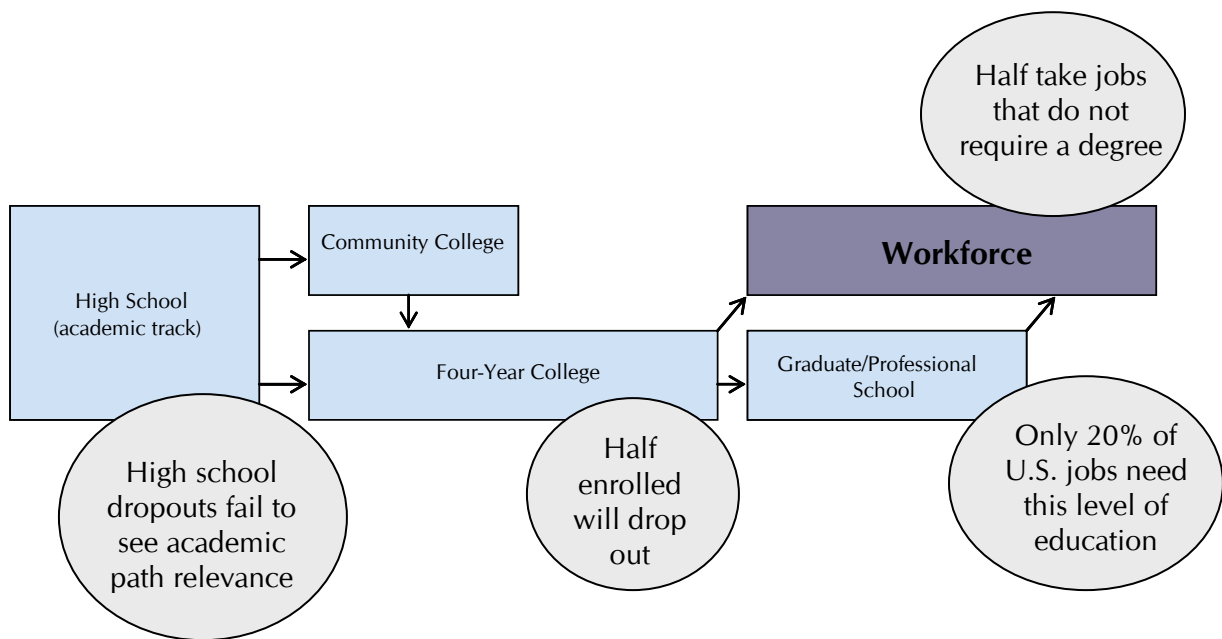
Children and youth are being given the wrong message and pushed along an inflexible pathway.

XI. An Education System and Workforce Demand Mismatch

Education in the U.S. is increasingly geared to a one-path option, which may be simplified to this:



In reality, this extremely linear and overly simplistic “one way to win” system fails a large majority of people. Students drop out or fail out of the system because they are not academically prepared, or they fail to get a job in the end that needs or requires the qualifications they earned.



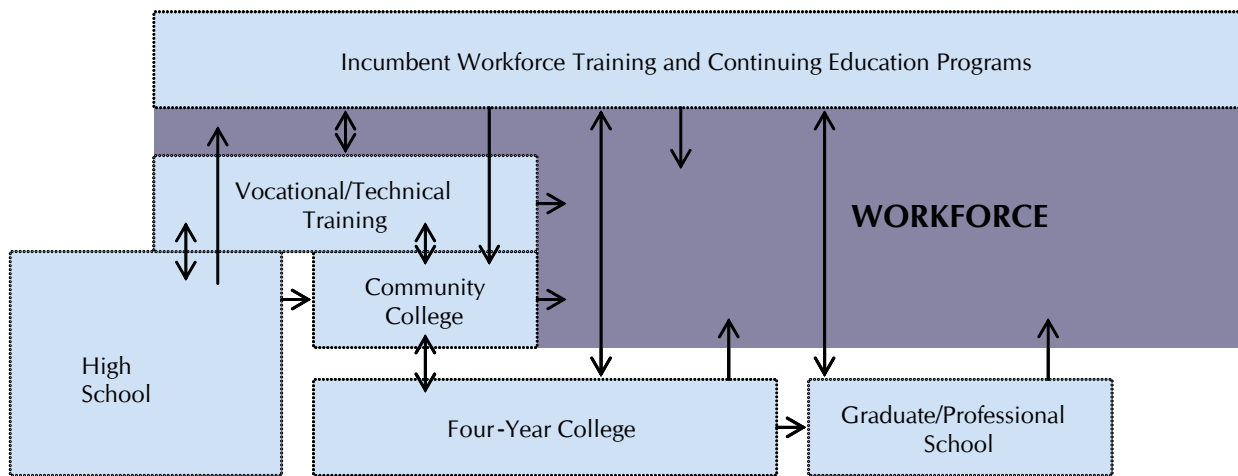
“Pursuing the “one way to win” plan is very costly. First of all, it is expensive to students, parents and taxpayers. Second, three out of four who try the plan FAIL; either they fail to graduate or they fail to find employment commensurate with their degree. Finally, there are the economic development costs that result from a mismatch between good opportunities in the workforce and the skills/credentials, or lack thereof, of today’s young adults.”

Kenneth Gray and Edwin Herr. “Other Ways to Win: Creating Alternatives for High School Graduates.”

A new impetus for life-long learning and educational connectivity must be established to meet U.S. labor demand.

XII. An Appropriate System for Education and Workforce Delivery

What is really required is a system of interconnected education, training and work experience “building blocks” that provide mechanisms for continuous learning and career/education progression. Entry to and exit from this continuum of education and training should be available at multiple points, providing opportunities for all students at various levels of educational attainment and career progression. Persons leaving this system are not “drop outs” since they should be prepared for work at their progression skill level and should be connected to potential avenues of work via the experiential, work-based and collaborative learning opportunities in which they have participated. In fact, persons do not leave the system, since work is part of a life-long learning continuum connecting work and learning opportunities throughout their educational and working life.



An effective system must have multiple characteristics:

- It must provide cost-effective pathways towards rewarding occupations for all secondary education students regardless of academic ability.
- It must provide education and training re-entry opportunities to facilitate life-long learning and skills enhancement.
- It must provide opportunities for people to continue their pursuit of higher levels of education when their desires, interests or career needs dictate it.
- It must provide connections to career exposure opportunities and work exploration and experience during the education and training process.
- It must be relevant and provide an impetus to help students remain engaged in their studies and work.
- It should be a flexible system, supporting multiple modes of learning, rather than traditional classroom-only pedagogy.

There are existing models and systems of career-oriented education that are adaptable to meet needs.

XIII. Options for Alternative Education and Training Paths

Forward-thinking education leaders in many parts of the U.S. have developed and refined alternative educational pathways that may deliver the appropriately educated, work-ready population our nation needs.

Career Majors	Combinations of existing high school courses relevant to students with an interest in particular career clusters. Counselors direct students to take the courses appropriate to their career interest.
Tech Prep	Formal, government-funded programs linking academic and vocational education to specific career clusters. Requires engagement of secondary and postsecondary educators in forming structured articulation agreements.
Schools-Within-Schools	Career-oriented academies located within existing schools that bring cohorts of students together who have interest in similar careers. Typically have a curriculum comprising core academic courses and specialized courses with career-relevant content.
Magnet Schools/ Academies	Usually freestanding schools dedicated to a specific career cluster or subject matter context. Typically provide services to a larger geographic area than other local schools; operate an integrated curriculum; may have formal articulation agreements with higher education.
Charter Schools	Independent, non-profit schools operated as alternatives to public schools. Usually created with an express purpose or philosophy and, as such, may be similar to magnet schools.
Complementary Learning	Community-based, extracurricular, career and work readiness-oriented programs and activities. Typically designed to link students to employers for internships and work experience, and to instill relevance to in-school learning.

Career majors are relatively simple to implement within an existing school curriculum.

XIV. Career Majors

“Career major programs are combinations of existing courses within a high school that are recommended for students interested in a particular career cluster. The recommended programs of study for those interested in particular careers are used as counseling guides for course selection. There is no expectation that the courses will be integrated, or that there will be a body of students identified to be educated as a cohort. The career major program strategy can be used by a school to try to make a student’s education more relevant without the need to make changes within the courses themselves.”⁵

Advantages	Disadvantages
<ul style="list-style-type: none"> • Simple to implement • No requirement to integrate courses into formal career curriculum • Individualizable to multiple students and student interests • Provides student with career path focus • A first step on pathway to more robust reform • Suitable for small schools with limited resources • No special infrastructure or resources required 	<ul style="list-style-type: none"> • Curriculum content not customized to career relevance • No cohort of students with whom to identify and move forward • Little career articulation from one course to another • Low level of opportunity for industry engagement in curriculum and education experience • Limited opportunities for internships, work experience or other similar career links

Healthcare Example / Case Study

1998 legislation introduced in the State of Kentucky required that “beginning with the graduating class of 2002, each student in a common school shall complete an Individual Graduation Plan (IGP) which incorporates emphasis on career development.” The “career major” is the central focus for developing IGPs, selecting high-level academic and career-related courses, and identifying work-based learning experiences that prepare students for transitioning to postsecondary education or work.

Kentucky operates a career cluster/major in “Health” designed to prepare students to apply technical knowledge and skills for maintenance of health, prevention of illness and care of the ill. To gain a career major certificate students must:

- Successfully complete all high school graduation requirements including four career-related credits.
- Undertake work-based learning in the specific major, using exploratory avenues such as job shadowing, internships or cooperative education.
- Conduct a “culminating project” in the major including a writing assignment describing the relationship between the project performed and the student’s future educational and career plans.

⁵ David J. Pucel. “Beyond Vocational Education: Career Majors, Tech Prep, Schools Within Schools, Magnet Schools and Academies.” Eye on Education, Larchmont, NY. 2001.

Tech Prep formally links secondary and postsecondary education with a career emphasis.

XV. Tech Prep

Tech Prep (initiated through the Federal Perkins Act) works with the goal of teaching rigorous applied academics together with relevant career competencies. Tech Prep is focused on specific clusters of occupations likely to be relevant to a broad range of students. Federal funds apply if the programs bring both academic and vocational educators together to form integrated career major curricula. Tech Prep is also intended to include articulation agreements between high schools and postsecondary education institutions to provide for a seamless transition from one education and training level to another and then on into work.⁶

Advantages	Disadvantages
<ul style="list-style-type: none"> • Consortium-focused, helping to align secondary and postsecondary curricula • Customized curriculum developed to match education with relevant career-oriented topics • Designed to serve a broad cohort of students with similar career field interests • External funding available to support program development • Employers and community parties typically engaged in advisory and support capacities 	<ul style="list-style-type: none"> • Requires joint planning and agreement across multiple institutions • Requires resources to design and administer customized curriculum • Not necessarily structured to provide direct work experience for students, although most include community-based experiences within the program

Healthcare Example / Case Study

In the Syracuse City School District in New York, the “health careers” Tech Prep program operates from 9th through 12th grades with integration of college level courses, electives and work internships.

In Illinois, tech prep for healthcare careers represents an educational path designed to emphasize the applicability of learned material to occupational skills by integrating college preparatory coursework with rigorous technical education. The sequence of courses, both technical and academic, begins in 9th grade and is articulated with a postsecondary experience leading to an associate's degree. Because tech prep prepares students for a lifetime of learning, it can also allow students to segue to advanced education such as a four-year bachelor’s degree.

⁶ See David J. Pucel. “Beyond Vocational Education: Career Majors, Tech Prep, Schools Within Schools, Magnet Schools and Academies.” Eye on Education, Larchmont, NY. 2001.

A school within a school brings together students of like career interest into an integrated curriculum.

XVI. Schools-Within-Schools

Schools-Within-Schools take the form of career-oriented academies located within existing high schools. The schools are structured to enroll a group of students focused on a specific set of careers or academic content. Most such schools develop integrated instruction across different subject matter courses and require students to take specialized career courses and be exposed to career-related community experiences as components of the curriculum. To the extent that they may have integrated curricula tied to broad career opportunities, schools-within-schools are similar to Tech Prep, Academies and Magnet Schools.

Advantages	Disadvantages
<ul style="list-style-type: none"> • May have a consortium focus, helping to align secondary and postsecondary curricula • Customized curriculum developed to match education to relevant career-oriented topics • Designed to serve a broad cohort of students with similar career field interests • External funding available to support program development • Employers and community parties typically engaged in advisory and support capacities • Able to leverage resources of the larger school in which it is contained 	<ul style="list-style-type: none"> • Administration typically also engaged with general student population, not just career majors • May not be structured to meet Tech Prep funding guidelines • Less unique in identity versus standalone schools • Enrolled students potentially distracted by activities of the larger school and general school population

Healthcare Example / Case Study

The Pre-Medicine & Allied Health program in the Medical Sciences Academy at Lake Worth Community High School (Lake Worth, Florida) is designed to encourage and prepare students for entry into allied health professions. The Medical Sciences Academy provides students with the opportunity to explore careers in Allied Health Assisting, Nurse Assisting, Practical Nursing, Dental Aide, EKG, Home Health Aide, Emergency Medical Technician and Pharmacy Technician. These programs provide students with a skill-based curriculum that equips them with job-specific medical skills, certification or licensure, as well as appropriate credentials to enter and succeed in college.

Lake Worth Community High School’s Pre-Medicine & Allied Health program, one of the largest Medical Choice programs in the United States, received a Certificate of Recognition from Magnet Schools of America and the Career Academy Award of Excellence exceeding the National Career Academy Standards of Practice, as well as recognition from the National Career Academy Coalition and ACTE as an exemplary program.

Magnet schools and academies can draw students from a wide area for specialized study.

XVII. Magnet Schools/Academies

Magnet Schools tend to be free-standing schools governed by their own administration and typically serve a larger geographic area than general high schools; bringing in students from across a large school district, multiple districts, or even a state. Instruction is typically dedicated to a specific career cluster, with an integrated curriculum designed to address academic content within an applied, career-oriented context.

Career-oriented magnet schools tend to address career majors beyond those traditionally addressed by vocational education and emphasize technical and professional career areas.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Consortium-focused, helping to align secondary and postsecondary curricula • Customized curriculum developed to match education to relevant career-oriented topics • Designed to serve a broad cohort of students with similar career field interests • Employers and community parties typically engaged in advisory and support capacities • Dedicated resources and infrastructure for career-oriented learning • Strong identity with employers 	<ul style="list-style-type: none"> • Requires access to significant financial resources to develop the school. May require expensive, specialized infrastructure and resources • Requires joint planning and agreement across multiple institutions for articulation agreements and work exposure and experience

Healthcare Example / Case Study

The Francisco Bravo Medical Magnet Senior High School, operated by the Los Angeles Unified School District (LAUSD), is a comprehensive high school with a special focus on health and medical careers.

Bravo began operations in 1981 as a magnet school contained within Lincoln High School about a mile north of the present-day Bravo campus. In 1990 the school moved to its own specialized campus located adjacent to the University of Southern California (USC) Health Sciences Campus and Los Angeles County General Hospital. This close proximity to leading medical institutions was a deliberate decision and provides Bravo students with opportunities to participate in cooperative programs with USC, its hospitals and other institutions. The school places a curricular emphasis on science, math and language arts skills as they relate to health and medical disciplines, ensuring relevance and connectivity to surrounding employment opportunities.

As a magnet school, Bravo has no test prerequisites for attendance. Any student residing within the LAUSD boundaries who submits an application on time is eligible to attend. Of the 700 applicants who tried for the fall 1999 freshman class, 450 were chosen at random. The remaining students were put on a waiting list.

Newsweek characterizes Bravo as one of the top high schools in the state of California, and ranks the school 192nd in the nation.

USC Trojan Family magazine discusses the Francisco Bravo Medical Magnet Senior High School in its Winter 1999 edition:

Bravo's uniqueness has a lot to do with USC's willingness to get involved. It started in 1981, when the LA County USC Medical Center officially adopted the magnet school. Thanks to the Adopt-A-School agreement, Bravo students can take advantage of USC personnel and site resources, participating in on-site experiences at the medical facilities planned through their classes. Students routinely use the medical center's labs and gain experience as hospital volunteers. Other connections include a guest speakers program, hospital tours and the Shadow-a-Professional program.

In addition to this relationship with LAC + USC Medical Center, the University and Bravo have established several other programs together. A sampling:

- *The USC Health Sciences Campus Schools Partnership. This effort provides educational, cultural and developmental opportunities for approximately 2,600 children and youth who attend Bravo High School and nearby Murchison Street Elementary School. The program was implemented as part of USC's Children and Family University Community Initiative.*
- *USC University Hospital. Bravo students benefit from a relationship with this state-of-the-art teaching hospital through the Hospital Occupations class, which allows students to learn all about the health sciences while gaining experience on the floor working with patients and professionals. Bravo students are also encouraged to participate in the volunteer program at the hospital.*
- *Community Scholars. Funded by the Community Health Foundation of East Los Angeles, Inc. and the Keck School of Medicine at USC, this program targets high-risk students from East Los Angeles schools like Bravo. The effort seeks to help students develop the prerequisite skills, academic competence and motivation to pursue a career as a health professional.*
- *Medical Counseling, Organizing and Recruitment Program. Designed for Bravo students who have demonstrated an interest in attending college and ultimately gaining entry into a health career, this Saturday tutorial program emphasizes support in math, science and English. Tutors – mostly USC undergraduates – work in small groups with Bravo students, some of whom also gain summer work-study experience in a healthcare facility.*
- *Howard Hughes Medical Institute Grant. A five-year grant enabled the Keck School to expand its partnership with Bravo. It has provided instructional materials, support for Bravo's annual science fair, additional training, and even stipends for Bravo students who perform lab work.*
- *USC Health Consultation Center. Through the Center's preceptor program, Bravo students are assigned to a specific site to gain work experience and knowledge about the health sciences professions.*

Charter schools can be built to function much like magnet schools or freestanding academies.

XVIII. Charter Schools

A public charter school is a publicly funded school that, in accordance with an enabling state statute, has been granted a charter exempting it from selected state or local rules and regulations. A charter school may be newly created, or it may previously have been a public or private school; it is typically governed by a group or organization (e.g., a group of educators, a corporation, or a university) under a contract or charter with the state. In return for funding and autonomy, the charter school must meet accountability standards. A school's charter is reviewed (typically every 3 to 5 years) and can be revoked if guidelines on curriculum and management are not followed or the standards are not met.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Typically organized around specific subject matter or educational philosophy • Customized curriculum developed to match education to specific subject matter • Designed to serve students with similar interests • Multiple community parties typically engaged in advisory, support and governance capacities • Dedicated resources and infrastructure provided by charter with state/local school district(s) • Independent identity 	<ul style="list-style-type: none"> • Controversial with public school systems in some jurisdictions causing ill will and lack of collaboration • Requires access to significant financial resources to develop the school. May require expensive, specialized infrastructure and resources • Requires resources to design and administer customized curriculum • Not necessarily structured to provide direct work experience for students, although most include community-based experiences within the program

Healthcare Example / Case Study

The Memphis Academy of Science and Engineering (MASE) was founded in 2003 as the first charter school in the State of Tennessee. The school is closely affiliated with multiple healthcare and biomedical science organizations, including the University of Tennessee Health Sciences Center, Baptist Memorial Health Care Corporation and the Memphis Bioworks Foundation (which founded MASE).

Operating both a middle school and high school, MASE is located in the Midtown Medical District of Memphis. MASE facilitates collaborative relationships and career exploration at medical and biotechnology institutions.

MASE specifically targets the enrollment of students who attend schools that are failing to make Adequate Yearly Progress as determined by the state's accountability standards. MASE also targets students who are in "at-risk" situations as defined by the Tennessee Charter School Act of 2002.

After three years of measurable results, MASE is recognized by Memphis City Schools as the number one academically performing middle school in the district. MASE has a current enrollment of over 550 students in grades 6 through 10. Grade 11 enrolled in 2007 and Grade 12 will enroll in 2008, at which time the school will house over 900 students.

XIX. Complementary Learning

Complementary Learning, a term coined at the Harvard University School of Education, promotes educational partnerships between schools and non-school organizations to increase learning opportunities and engagement for children and youth. Complementary learning advocates for a variety of learning supports to be in place around school-age children. These supports, which must reach beyond school, should be linked and work toward consistent learning and developmental outcomes for children from birth through adolescence. Examples of non-school learning supports include early childhood programs, families, after-school programs, libraries, and other community-based institutions.

Advantages	Disadvantages
<ul style="list-style-type: none"> • High degree of flexibility for innovation and change • Does not require changes in school district curricula • May leverage capabilities of existing community-based organizations • Less formal, out-of-school activities, not constrained by typical school rules and curriculum mandates • May form multiple small programs to meet specific workforce needs and career niches • Distributed system able to serve multiple neighborhoods 	<ul style="list-style-type: none"> • Not typically integrated with K-12 school curricula • Does not influence standard school curricula • Adds length to students' "working day" and may interfere with school homework and extracurricular activities • Challenging to arrange transportation for participants • May not lead to any formally recognized qualifications or "transcript" improvements • At risk of being overtly steered by narrow employer participant interests

Healthcare Example / Case Study

Complementary Learning in Pittsburgh, Pennsylvania

Many community-based organizations and schools throughout the U.S. are engaged in partnership programs and initiatives to provide complementary learning experiences for students. Some examples within the Greater Pittsburgh region include:

- Urban Youth Action (UYA) serves over 1,500 students by giving them positive life and leadership skills and connecting learning to the world of work and the pursuit of postsecondary education.
- Career Connections Charter High School has over 300 students participating in an interdisciplinary curriculum with innovative teaching and hands-on work opportunities that prepare students to make informed career choices by graduation.
- Carrick High School operates a rigorous health technology program for 200 students that focuses on health career training through the development of leadership skills, self-confidence, commitment to family, school and community, and people-oriented skills.

XX. Center for Career Learning Pittsburgh, Pennsylvania

“Career Learning,” a term coined by Health Careers Futures in Pittsburgh, describes a system that will integrate the best elements of the many different approaches to career awareness, career exploration, vocational education, higher education and linkages to the workplace.

Focused initially on aspects of education for careers in the healthcare sector, the Center for Career Learning (CCL) is working towards development of a vertically integrated, multiple education-pathway system. The goal is the formation of an articulated system among schools, community-based organizations, higher education providers and employers to best meet the career aspirations of youth.

Center for Career Learning

MISSION

CCL's mission is to advance, among employers, schools and community organizations, strategic collaborations that build career awareness and enhance student preparation for work in the regional healthcare industry.

Center for Career Learning

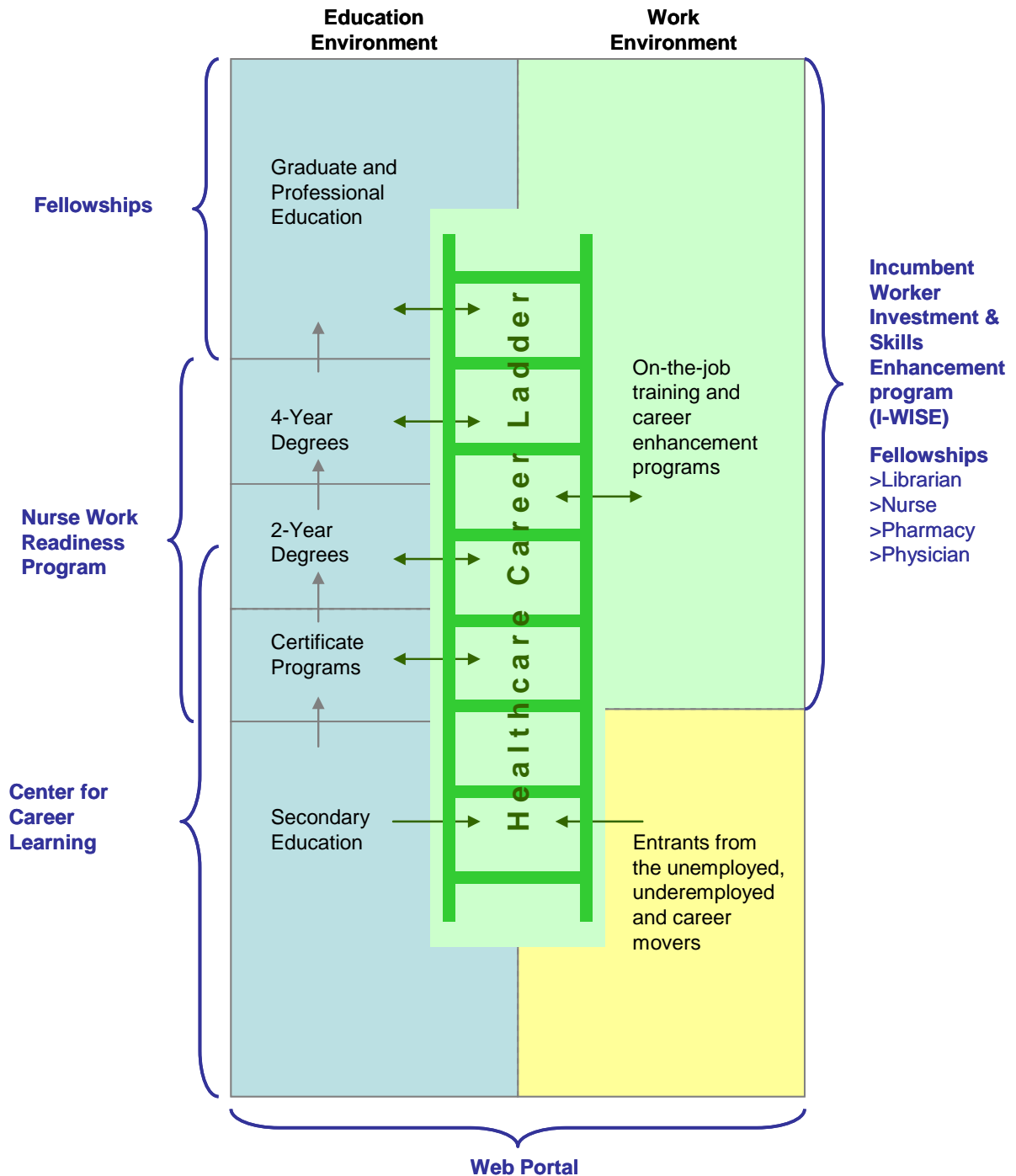
Health Careers Futures and the Jewish Healthcare Foundation – Pittsburgh, Pennsylvania

Health Careers Futures (HCF) is a nonprofit organization working to align the regional supply of, and demand for, healthcare workers. The organization is structured to work with key stakeholders to attract, support and retain healthcare workers and support the long-term regional economic development of Southwestern Pennsylvania.

Health Careers Futures has placed a distinct emphasis on career learning as a means to leverage existing organizations in order to build a collaborative model for enhancing student engagement in education relevant to future careers in health care. The mission of HCF's Center for Career Learning is to advance, among employers, schools and community organizations, strategic collaborations that will build career awareness and enhance student preparation for employment in the regional healthcare industry.

Preliminary CCL activities are being endorsed by the City of Pittsburgh School District and leading hospitals and health systems within the City to facilitate awareness and career exploration for high school youth. Programs will include job shadowing, internships, career fairs and curriculum integration.

Proactive career learning activities support the work of the formal education system in developing a career-ready population. Health Careers Futures in Pittsburgh, a supporting organization of the Jewish Healthcare Foundation, is deploying multiple programs, initiatives and tools to address health career pathways. This is being accomplished through the Center for Career Learning.



Health Careers Futures' Programs and Initiatives include:

- **Center for Career Learning**
CCL identifies practices connecting academic principles to applications in health care; provides health careers literacy, vocational and job readiness tools; and facilitates – with schools, community-based organizations, and employers – student placement in healthcare settings.
- **Health Careers Futures Web Portal**
A highly informative website that educates middle and high school students about health careers in Southwestern Pennsylvania. It provides health careers exploration and matching; resources for finding health careers; interviews with regional healthcare professionals about their career paths; and digital and print outputs for student use. (www.abouthealthcareers.org)
- **Incumbent Worker Investment & Skills Enhancement (I-WISE) program**
Provides free training in soft skills (communication, conflict management, team building, problem solving, and change management) for frontline support and managerial staff in long-term and acute-care settings. Participants may receive certificates of attendance, completion and continuing education credits.
- **Fellowships**
Through supported fellowships, graduate students and professionals gain access to outstanding training, content and leaders who shape health practice, policy and discovery. Fellows learn in multi-disciplinary teams and are challenged to think, learn, apply critical concepts and perform at the healthcare frontier. Current fellowships include:
 - Patient Safety: fosters leadership skills through team-based problem solving
 - Salk Health Sciences: confronts healthcare dilemmas from bioethical and religious perspectives
 - Nurse Navigator: increases RNs' capacity to collect and apply data at the point of care
 - Librarian: refines librarians' health information management skills to meet users' needs; completion yields eligibility for Consumer Health Information Specialist
- **Nurse Work Readiness Program**
Provides instruction in soft skills, work design, systems thinking, outcome measurement and problem solving for nursing students in their final year of diploma, associate, bachelor's, or second-degree programs. Program effectiveness is based on content assessment and evaluation, and participants' success during job orientation compared to their counterparts.

Career-oriented education is too seldom recommended to children and youth.

XXI. Changing the System – Changing Attitudes

Providing More Education Options will Require a Change in Attitudes Across Multiple Groups

As we have seen, the “one way to win” paradigm increasingly dominates modern U.S. education and the thinking of its stakeholders. Achieving acceptance for alternative school structures, different modes of learning and new vocational education pathways will require a reversal of thought across multiple audiences, particularly groups that make education and training recommendations for youth. **Data produced by the U.S. Department of Education illustrate the challenge. The chart below shows dramatic increases from the 1980’s to the 1990’s in the percent of advisors counseling high school students to attend college, regardless of their academic aptitude, interests or college readiness.**

Percent of Advisors Counseling High School Students to Attend College

	Father 1980s	Father 1990s	Mother 1980s	Mother 1990s	Guidance Counselor 1980s	Guidance Counselor 1990s	Teachers 1980s	Teachers 1990s
Total	59%	77%	65%	83%	32%	65%	32%	66%
Male	56%	74%	62%	81%	32%	64%	32%	64%
Female	64%	80%	69%	85%	33%	66%	33%	67%
Student Test Quartile								
Lowest	40%	60%	48%	65%	26%	56%	28%	57%
Second	50%	72%	56%	79%	26%	61%	27%	61%
Third	64%	83%	69%	90%	31%	66%	30%	66%
Highest	80%	91%	85%	96%	43%	74%	42%	75%

Source: Gray & Herr, “Other Ways to Win.” Compiled from National Center for Education Statistics (U.S. Department of Education) longitudinal student survey data.

It is important to note that:

- Substantial increases are observable for all categories of advisors to students.
- The growth in the percentage of parents recommending college increased fastest among students with the lowest academic ability.
- Less than half of students, even in the highest quartile of academic ability, reported that their teachers or guidance counselors recommended college in the 1980’s. By the 1990’s this rose to more than half for the LOWEST quartile of students.

XXII. Issues to be Confronted

Those seeking to confront the challenge of preparing our nation's youth for the modern workplace will have to tackle many issues:

- Many high school graduates do not have high school-level skills, and hundreds of thousands of students entering postsecondary education require remedial education to prepare them for college-level work. (Kirst, 2007)
- Vocational education has declined in the U.S.'s K-12 system. High school students' participation in occupationally-specific courses dropped 14% between 1982 and 1994. During the 1990s, vocational and technical credits continued to represent a declining share of the total high school credits that graduates earned. (U.S. Dept. of Education, 2000)
- As reformers in the 1990's worked on increasing the number of internships, they often found that it was easier to find employers willing to take interns than to find interns willing to fill those slots. (Hughes, 1998)
- Many K-12 educators and parents disapprove of work-based learning as "inferior" to standard academics; however, it is an accepted standard within graduate and post-graduate education. Doctors, architects and attorneys, for example, require work-based learning, so why is this methodology thought to be unsuitable for persons in the broader world of education? (Bailey, Hughes and Moore, 2004)
- Most educators agree that work-based learning can be useful as a last educational step (once a career has been selected). However, work-based learning advocates argue that the approach is suited not only as a means to transition into work once an occupation is chosen, but also as an effective means for exploring career opportunities and imparting relevance to academic courses. (Bailey, Hughes and Moore, 2004)
- As the movement of students into academic tracks in preparation for college has greatly increased, vocational programs have often become initiatives reserved for special needs populations. Vocational education has, as a result, acquired an unwarranted and harmful stigma.
- The default fallback of recruiting healthcare workers from overseas is increasingly challenging in the post 9/11 immigration environment. There are also ethical issues attached to this practice when workers come from developing countries that lose their desperately needed frontline healthcare workers.

The workforce education and training challenge goes far beyond health care. It is a challenge facing the nation as a whole and almost every sector of the U.S. economy.

In *“Tough Choices or Tough Times: The Report of the New Commission on the Skills of the American Workforce”* (produced by the National Center on Education and the Economy) the challenges faced are clearly expressed:

“For most of the 20th century, the United States could take pride in having the best educated workforce in the world. That is no longer true.”

“While our international counterparts are increasingly getting more education, their young people are getting a better education as well. American students and young adults place anywhere from the middle to the bottom of the pack in all three continuing comparative studies of achievement in mathematics, science, and general literacy in the advanced industrial nations.”

“The core problem is that our education and training systems were built for another era, an era in which most workers needed only a rudimentary education. It is not possible to get where we have to go by patching that system. There is not enough money available at any level of our intergovernmental system to fix this problem by spending more on the system we have. We can get where we must go only by changing the system itself.”

XXIII. Barriers to Change

Multiple barriers will need to be removed or bypassed to achieve meaningful and sustainable change:

- High schools increasingly judge themselves by the percent of students enrolling in four-year higher education upon graduation. They express little desire to be judged on other outcome measures.
- Parents, guidance counselors, teachers, school administrators and peers each reinforce the message that it is “best to go to four-year college.” It has become a default message, provided with little thought or analysis as to whether it is the right message for the majority of students hearing it.
- With 1,700 four-year, degree-granting colleges and universities in the U.S., there is tremendous pressure on college and university admissions staff to fill enrollment quotas. Increasingly, open admissions and the availability of student loans make it easy to gain entry to bachelor’s degree programs (whether the student is suited or not). The four-year college industry spends millions annually on advertising, college fairs and other promotions aimed at high school students.
- The introduction of programs such as enhanced vocational education programs, career exploration initiatives, and internships requires schools, perhaps reluctantly, to take on an additional role. Developing and managing meaningful programs in these areas requires dedicated resources and levels of community and employer engagement that are not typical.
- Revising current and developing new curricula take time and resources. Applied and vocational education may also need specialized infrastructure and equipment that support hands-on training. These resources may be difficult to acquire for cash-strapped school districts.
- Teachers’ unions have a vested interest in maintaining the status quo of their membership, because that membership works in a system increasingly dedicated to an academic-track paradigm.
- A misinformed public equates a “knowledge economy” with only college and university-acquired knowledge. There is little understanding that, in the economy of the 21st century, knowledge and skills need to be applied across the skills and career continuum, at all levels of work, and that there are multiple paths available for acquiring technical skills and training outside of the traditional postsecondary, four-year college curriculum.

XXIV. Key Questions in Moving Forward

Those in the U.S. seeking to match workforce demand with work-ready, high school graduates will need to address many questions:

- What are the key barriers to building increased participation in career learning, work-based learning and vocational skills development programs?
- At what point in a child's educational development should complementary learning relevant to careers and work be introduced?
- If work-based learning improves academic skills, what skills are improved and how is improvement to be measured?
- Is career learning and work-based education primarily targeted at general youth skills development, specialized subject-matter education, career exploration, or creating a workforce to meet employer demands?
- What are the operational, budgetary and programming implications for secondary institutions seeking to become engaged in career learning and enhanced vocational education initiatives?
- How can the cost, career preparation and quality-of-life advantages of alternative education and training pathways be communicated to populations that are currently convinced that four-year college is the only way to win?
- What model programs and initiatives are proving to be successful in meeting the needs of students, society and the economy?
- What are the comparative advantages and disadvantages of various experience-generating systems, such as apprenticeships, internships and job shadowing?
- What form of education and skills development is best suited to preparing workers for healthcare occupations, such as frontline care positions, administrative and clerical positions and other key occupations in health care?

A CALL TO ADDRESS THE ISSUES

Health Careers Futures Web Portal

If you have read this far then clearly you have an interest in these issues and likely will want to be more engaged in developing solutions to the U.S.'s healthcare workforce challenge. We invite you to an ongoing discussion of health careers issues at our web portal, online at www.abouthealthcareers.org

At the *Center for Career Learning*, we will be capturing input and building a clearinghouse for information on innovative solutions to workforce preparation challenges and career education for health care and other sectors.

XXV. Further Reading

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XXVI. About Health Careers Futures, the Jewish Healthcare Foundation and Key Partners in Education and Training

Health Careers Futures (HCF) aligns the regional supply of and demand for healthcare workers. HCF collaborates with all stakeholders to attract, support and retain healthcare workers and support the long-term regional economic development of Southwestern Pennsylvania.

Health Careers Futures develops and implements initiatives that increase information about the healthcare industry and strengthen the health workforce pipeline. HCF leads research on career choice and pathways, advocacy for patient safety principles in regional healthcare curricula, and projects aimed at recruiting and retaining quality healthcare workers through better work design.

HCF is a nonprofit supporting organization of the Jewish Healthcare Foundation.

Allegheny Conference on Community Development (ACCD). ACCD and its Affiliates work in collaboration with public and private sector partners to stimulate economic growth and enhance the quality of life in Southwestern Pennsylvania. ACCD is a private sector leadership organization with over 300 Regional Investors. Regional Investors – all heads of the region’s employers – provide civic leadership to execute a focused agenda for regional improvement.

Jewish Healthcare Foundation (JHF) is a not-for-profit public charity that supports healthcare services, education, and research to encourage medical advancement and protect vulnerable populations. The mission of JHF is to support and foster the provision of healthcare services, healthcare education, and, when appropriate, medical and scientific research, and to respond to the health-related needs of elderly, underprivileged, indigent and underserved persons in both the Jewish and general community throughout Western Pennsylvania.

The Jewish Healthcare Foundation was established in 1990 with proceeds from the sale of Montefiore Hospital, a high-quality teaching healthcare institution founded by Pittsburgh's Jewish community.

United Way of Allegheny County. As the community’s fundraiser, United Way of Allegheny County streamlines the process of getting dollars to agencies that are impacting critical community needs. Each year, thousands of individuals in hundreds of workplace campaigns find or give help through United Way. United Way ensures maximum community impact and optimal donor value through high standards of organizational excellence and efficiency, expertise in identifying and addressing community needs, and rigorous review and monitoring of nonprofit partners.

By investing in prevention strategies and addressing the root cause of current and emerging needs for at-risk children and youth, troubled teens, struggling families and individuals, and older seniors, United Way impacts what matters in the community and creates lasting change in people’s lives.

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