Closing the Health Workforce Gap in California: The Education Imperative

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HEALTH WORKFORCE SOLUTIONS

The Campaign for College Opportunity

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Executive Summary

California's population is growing, aging and becoming increasingly diverse. These compounding factors will increase demand for all types of health care services, placing a corresponding demand on allied health professionals and leading to the need for more trained professionals. In California, employment demand for allied health workers is expected to grow by 26% in less than a decade, while overall employment is expected to grow by 16%.

Major recent studies have shown that California is projected to have a significant shortage of college-educated workers in comparison to the needs of the economy. Studies also show that it is unlikely for California to import these workers from other states and countries.

The allied health workforce comprises 60% of healthcare occupations. Representing more than 200 occupations, allied health professionals utilize a wide range of highly specialized technical skills to provide diagnostic, therapeutic, and informational and support services directly and indirectly to patients in health care delivery settings. Examples of allied health occupations include Dental Hygienists, Respiratory Therapists, and Pharmacy Technicians. This study focuses on this major section of the healthcare workforce, which has received little attention to date. The study also includes an analysis of nursing. Although nursing is typically not considered part of the allied health workforce, we include nursing because of the recent focus on nursing shortages in California and the important role nurses occupy in the healthcare workforce.

California is currently undersupplied in its levels of allied health professionals. All but one of the 15 health professions profiled in this study lagged the nation in the rate of health professionals to the general population. Projected workforce shortages were also found in nine of the twelve professions where data was available. Combining projected employment demand data with supply estimates based on recent graduation data, we were able to estimate annual shortfalls in workforce supply. With a median of 79%, the estimated shortages ranged from 11% to 559%. That means that the supply of those professions must be increased by 11% to 559% to meet projected health care needs. Additionally, interviews with educators, health care providers, and other stakeholders yielded strong testimonies of current and projected health workforce shortages in California.

Many factors affect the supply of allied health workers. Inadequate data collection impedes effective policy making and workforce planning. Limited awareness of allied health careers and workforce retention problems greatly impact the level of allied health workers. However, the greatest limiting factors are centered in the educational systems that train health professionals.

Stakeholders across the state overwhelmingly cited limited educational capacity in allied health educational programs as the greatest factor restricting workforce supply. Inefficiencies in the educational system, high attrition rates in training and education

programs, and limited student supports were also cited as major forces restricting supply growth.

A previous study analyzing overall workforce needs found that among all industries health care is the number one sector requiring Associate degrees and certificates. Although many allies health occupations require a Bachelor's degree or higher, the prevalence of certificate and AA requirements means the community colleges are central to meeting these health care workforce demands.

Allied health workforce shortages will place the health care of all Californians in jeopardy. Without significant expansion of the state's educational capacity and an unprecedented focus on student success, there will not be enough allied health workers to meet the growing health care needs of California.

Factors Driving Demand of Allied Health Workforce in California

- *Population Growth*: The population of California is the largest in the nation and is expected to grow at a rate of almost 30% by 2020, outpacing population growth of 20% in the Unites States as a whole.

- *Aging Population:* Californians over the age of 65 are the fastest growing population group. The state's elderly population is expected to increase by 75% between 2000 and 2020. Increasing average ages means greater demand for health professionals as the elderly population utilizes health care at a much higher rate than the general population. In fact, average health care expenditures increase fourfold between age 65 and 97.

- *Aging Workforce*: The allied health workforce reflects the aging trends seen more broadly across California, with some professions facing a significant challenge to replace their aging workforce. According to interviewed health care providers, some health systems have a Clinical Laboratory Scientist workforce with an average age well over 50. And the California Board of Registered Nurses reports that the average age of Registered Nurses in California is 47.7.

- *Need for Diversity in the Allied Health Workforce*: California's increasingly diverse population intensifies the need for a culturally and linguistically competent allied health workforce.

- *Geographical Distribution:* Certain regions are growing faster than the state or are more remote, contributing to a greater demand for allied health workers in those regions.

- *Changing Regulations:* Government regulations, such as staffing ratios, can increase demand.

- *Migration:* Migration flows in and out of the state can affect the demand for health workers through both general population and health workforce fluctuations.

- *Technology:* Technological innovations can stimulate or weaken the demand for health workers.

Factors Limiting the Supply of the Allied Health Workforce in California

- *Educational Capacity Constraints*: Limited educational capacity in allied health educational programs is restricting health workforce supply. Several factors contribute to capacity constraints, including the high relative costs of health education programs, a lack of clinical placements, and faculty shortages. Moreover, the community college system is struggling to provide services across all programs in the face of limited funding, rapid student growth and increasing student needs. These capacity constraints are not limited to the allied health programs themselves, but also to the range of math, science, and English classes, including basic skills education, necessary for entry into and success in health care programs.

- *Educational System Inefficiencies*: A lack of bridges between academic health programs means waitlisted and other qualified students are not being given the opportunity to move into empty seats in other health programs. Furthermore, difficulties navigating the California educational system are potentially limiting the supply of allied health professionals. Confusion over transfer requirements and a lack of system-wide agreement on program pre-requisites and curriculum pose significant barriers to students, who by necessity must turn to multiple colleges to complete their educational programs.

- *High Attrition Rates in Allied Health Educational Programs:* The supply of allied health professionals is greatly limited by poor student outcomes. Students are not succeeding because they are ill prepared to navigate the educational system, balance school and life demands, and achieve academically, especially in math and science courses. Data on a recent cohort of California Community College nursing graduates showed that 25% graduated behind schedule and 25% did not graduate at all. Additionally, a lottery or a "first come first serve" system is typically used to allocate seats in impacted programs, without adequate attention on improving the preparation of incoming students.

- *Lack of Student Supports:* Lack of student supports, from financial aid to counseling, is a huge factor in poor student outcomes. Access to financial aid is even more critical as many students in community colleges are have families to support and must continue to work while pursuing education. Interviewed stakeholders stressed that students need "wrap around" support services, such as tutoring, counseling, health insurance and childcare, to be successful.

- *Limited Awareness of Certain Allied Health Professions*: Lack of knowledge about certain health careers is a significant factor limiting supply. Limited exposure to health careers through outreach programs and a lack of counselors and mentors in the middle schools and high schools were commonly cited as reasons for this lack of awareness.

- *Retention Challenges in the Workplace:* Health care is a demanding sector and many new graduates are entering the workforce ill equipped to handle the corresponding pressures and expectations, resulting in high turnover rates.

- *Lack of Robust Allied Health Workforce Data*: Effective workforce planning and policymaking relies on robust data and analysis. In California, there is a dearth of allied health workforce data. Without improved data collection, it will be very challenging for policy makers and educators to effectively design strategies to increase the supply of allied health workers.

- *Education and Licensing Requirements*: Supply of allied health workers can be limited by higher minimum education requirements and tighter regulations.

Current Health Workforce Policies in California

In response to growing concerns about health workforce shortages, California has begun examining workforce issues from a more strategic and comprehensive level. While much remains to be done to ensure an adequate health care workforce in California, policymakers and other stakeholders can utilize lessons learned from these implemented strategies.

- *Nurse Education Initiative (2005 - Present)*: Governor Arnold Schwarzenegger's $90 million public-private partnership to provide funding for nurse education has already resulted in a 25% decrease in the projected state shortage. Examples of strategies include:

    - Increasing educational capacity in California Community Colleges, California State Universities and the University of California through dedicated funding

    - Encouraging nursing students to become nursing instructors through a loan assumption program

    - Providing grants to community colleges to reduce attrition rates, provide more clinical opportunities, and recruit nursing faculty

    - Developing nursing and health career pathways for high school students

    - Supporting nursing career ladders

- *Nursing Workforce Initiative (2002 - 2005):* Former Governor Gray Davis' three-year comprehensive plan addressed RN workforce shortages in California through scholarships for nursing students, career ladder projects, and regional workforce collaboratives.

- *California Caregiver Training Initiative (2001 - 2002):* A two-year, $25 million plan designed to increase the number of health caregivers in California, this initiative was successful in increasing the supply of Certified Nursing Aids (CNAs) by funding innovative approaches to recruitment, training, and retention of caregivers in the healthcare industry.

Policies and Practices from Other States

Concerns about allied health workforce shortages are not unique to California and examining actions in other states highlights common themes that begin to outline best practices.

- *Multiple Stakeholders:* A common theme across the reviewed states is the involvement of multiple stakeholders in the design of strategies and solutions. Stakeholders typically included state and local government, health care providers, educators, and labor and professional associations.

- *Statewide Workforce Strategy:* Developing a comprehensive workforce plan that encompasses multiple approaches for addressing health workforce shortages is another recurring theme.

- *Dedicated Resources:* Through legislation, many states established dedicated resources in terms of both funding and the formation of standing councils or task forces.

- *High Level Support and Visibility:* The base of many states' strategies is a Governor sponsored initiative or campaign.

- *Comprehensive Data Collection:* Establishing a comprehensive health workforce data collection system is a key component of many policy solutions in other states.

Policy Recommendations

California has the opportunity to improve the quality and affordability of health care in the state by developing major new initiatives focused on the allied health workforce and sustaining efforts to prepare future nurses. Because of the vast number of these professions and the range of academic skills necessary to succeed in them, considerable attention should be given to overall improvements in college preparation, access and success.

- *Increase the supply of allied health professionals by focusing on improved student outcomes.*
    - *Develop solutions responsive to the needs of diverse student populations, who have historically been underrepresented both in higher education and in the healthcare workforce.*
    - *Postsecondary student supports should focus on improving graduation rates, the length of time to complete, and the quality of graduates in the workforce.*
    - *Improving student readiness in grades K through 12 should focus on better academic preparation, particularly in science and math, and skills to navigate the education system.*
    - *Instruction methods and curriculum design should also be continually evaluated and redesigned, particularly for training programs targeting non-traditional students.*

- *Expand educational capacity and program slots through dedicated funding, support for faculty development, and enhanced clinical placement opportunities.*
    - *Investment and attention must be sustained given ongoing demand drivers such as an aging population and aging workforce.*
    - *Slots for allied health education programs and capacity and coordination of science, math, English and basic skills programs necessary for success in the healthcare workforce must be increased.*
    - *The focus on nursing must be sustained while developing and integrating new initiatives in allied health.*

- *Establish comprehensive data collection and analysis to allow for effective workforce planning and policymaking.*

- *Develop a comprehensive, strategic plan involving all stakeholders that addresses the multiple factors limiting the supply of allied health professionals.*

- *Focus on improving communication and requirements between campuses and education systems to streamline the educational process for students.*

- *Encourage deep partnerships between colleges and employers to increase the supply of clinical faculty and placements and create pipelines for local employers.*

- *Invest in outreach and educational programs to improve public awareness of preparation for allied health professions. Programs should target youth and underrepresented minorities. Programs should prepare students to be successful in those careers by emphasizing math and science readiness and building support networks through parent outreach and education.*

- *Promote career ladder projects for existing health workers who are already committed to health careers and can benefit from advancement opportunities.*

- *Recommendations for educational providers:*
  - *Reevaluate distribution of full-time and part-time faculty across disciplines. Utilize part-time faculty for specialized health programs where recruitment of full-time permanent faculty may be difficult.*
  - *Examine existing health program curriculum and remove any unnecessary barriers.*

- *Recommendations for health care employers:*
  - *Develop career ladders for clinical and non-clinical employees.*
  - *Partner with local educational providers to expand access to education for employees and provide clinical placements.*

Introduction

Campaign for College Opportunity, with support from Kaiser Permanente and the California Wellness Foundation, commissioned Health Workforce Solutions LLC (HWS) to examine the issues and challenges associated with ensuring a qualified health workforce in California. The intent of this paper is to present a comprehensive analysis of the factors affecting demand and supply of allied health professions, review current policies designed to address health workforce development, and to propose policy recommendations. This paper is intended for an audience of policymakers, educational institutions, and health care, labor, business and other interested organizations.

Comprising over 200 occupations, the allied health workforce is incredibly diverse. While allied health professions share may commonalities, each occupation is facing a unique set of challenges. To gain a better understanding of such challenges, 15 health professions are reviewed and analyzed in Appendix A. Registered Nurses (RNs) are not considered part of the allied health workforce. However, RNs are included in this analysis because they are in such short supply and face many challenges similar to that of other allied health professions.

- Cardiovascular Technicians
- Clinical Laboratory Scientists
- Dental Hygienists
- Diagnostic Medical Sonographers
- Emergency Medical Technicians
- Licensed Clinical Social Workers
- Medical Radiographers
- Medical Transcriptionists
- Pharmacists
- Pharmacy Technicians
- Physical Therapists
- Physical Therapy Assistants
- Registered Nurses
- Respiratory Therapists
- Surgical Technologists

Information for this paper was developed from analysis of relevant studies, data sets, and interviews with over 30 stakeholders, including educators, health care providers, government agencies, and professional and labor organizations.

The Allied Health Workforce Shortage in California

Growing concerns about current and projected allied health workforce shortages in California are prompting health care providers, educators, and policymakers to begin evaluating the challenges and identifying solutions. Allied health workforce shortages will potentially create a health care crisis for all Californians. Without an ample supply of highly trained, qualified health care professionals to meet the growing health care needs of California, quality of care, patient safety, and affordability will likely suffer.

California's population is growing, aging and becoming increasingly diverse. These factors contribute to an ever-growing demand for qualified health care workers in the state. Given high levels of projected employment demand, there are mounting concerns regarding an adequate supply of allied health professionals. While many factors affect supply, educational capacity constraints, system inefficiencies, high attrition rates in training programs, and limited student supports are key forces behind supply constraints.[1] And given that many allied health occupations are stable, well-paying jobs it only makes sense to expand the ranks of the allied health workforce.

A previous study analyzing overall workforce needs in California found that among all industries, health care is the number one sector requiring Associate degrees and certificates.[2] Although many allies health occupations require a Bachelor's degree or higher, the prevalence of certificate and AA requirements means the community colleges are central to meeting these health care workforce demands.

Defining the Allied Health Workforce

Physicians and nurses commonly define the health care workforce when in fact it constitutes a much broader and diverse group of health professionals. Across the state of California, there are legions of workers providing high-quality health care services that span the entire continuum of care. These allied health professionals utilize a wide range of highly specialized technical skills to provide diagnostic, therapeutic, and informational and support services directly and indirectly to patients in health care delivery settings.[3] The allied health workforce represents over 200 heath occupations and is approximately 60% of the health workforce in California.[4] Examples of allied health professionals include Respiratory Therapists, Clinical Laboratory Scientists, Emergency Medical Technicians, Medical Transcriptionists, and Dental Hygienists.

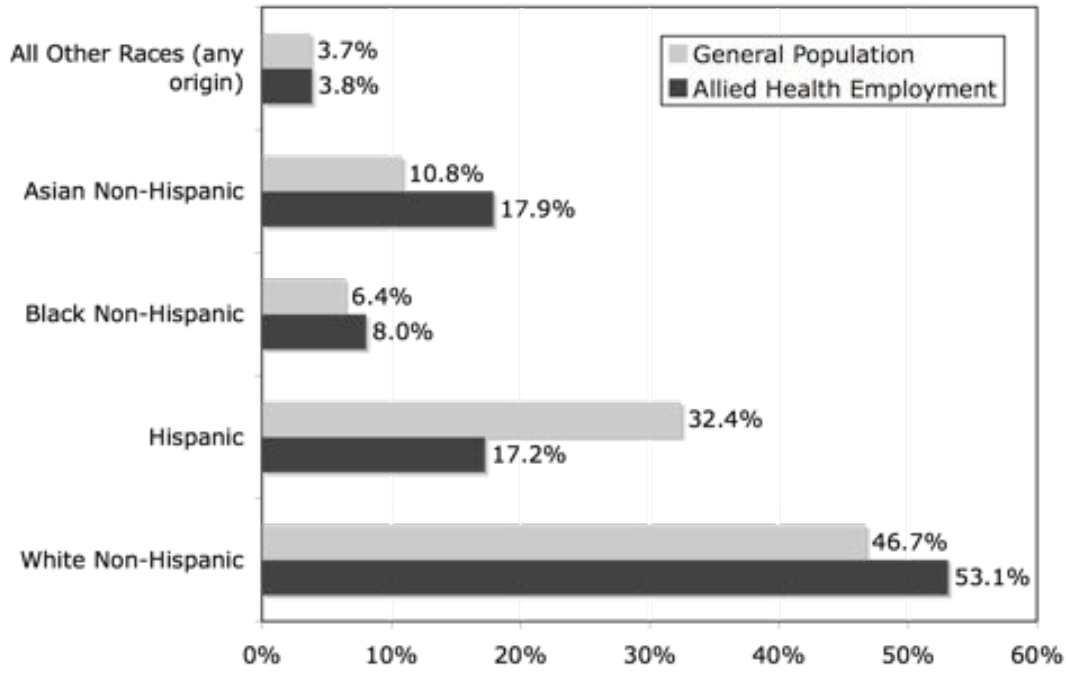
Clearly defining the allied health workforce is challenging because the roles are so diverse. Education requirements vary greatly across the occupations, as do wages and scope of practice. Educational levels, where any profession requiring a doctorate is excluded, are often used as the parameters to define allied health professions. But even by that definition there is still some confusion. Many organizations do not include Registered Nurses in the allied health workforce for example and Physical Therapists, long entrenched in the allied category, are moving towards a doctorally prepared workforce.

This report will not attempt to end the debate, but the difficulties associated with even defining the allied health workforce point to the challenges of studying such a diverse group of professionals. To highlight and better understand the issues at the individual health profession level, this paper presents an in-depth examination of 15 allied health occupations in Appendix A.

Demographic Characteristics

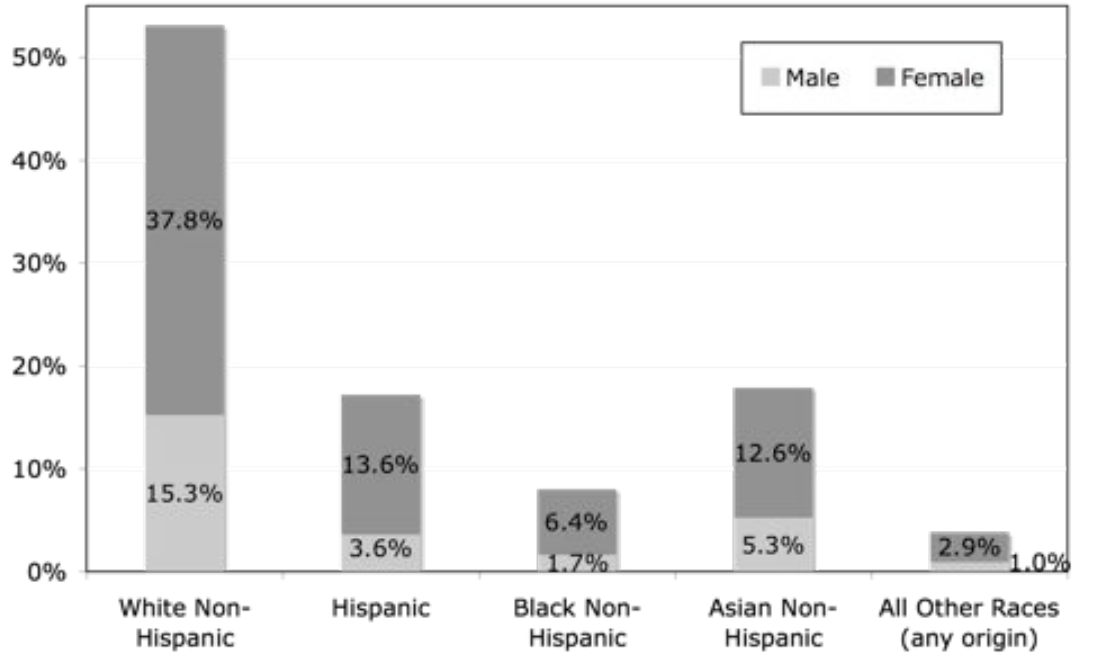
Demographic data, such as age, race/ethnicity, and gender, is difficult to assess, as it is not collected across allied health professions in California on a regular basis. However, basic demographic information from the 2000 Census begins to outline a few characteristics of allied health workers in California. Exhibit 1 shows that the majority of allied health workers are White Non-Hispanic and that disparities exist between the distributions of race groups among allied health workers as compared to the general population.[5] The relatively low levels of Hispanics in the allied health workforce may in part be explained by the fact that the Hispanic population is a younger population as a whole.[6] Exhibit 2 illustrates that the majority of allied health professionals, 73%, are female.[7]

Exhibit 1: California Population Distribution by Race



Source: Census 2000 Redistricting Data Summary File and EEO Special Tabulation. "The Allied Health Workforce in California." Center for the Health Professions, UCSF. 2005

Exhibit 2: California Allied Health Employment by Race and Gender



Source: Census 2000 Redistricting Data Summary File and EEO Special Tabulation. "The Allied Health Workforce in California." Center for the Health Professions, UCSF. 2005

More recent demographic data is not available at the state level, but interviews with large health systems and educational providers yield anecdotal demographic information regarding California's allied health workforce.

- *Age:* The larger demographic trend of an aging population is reflected in the allied health workforce, with some professions facing a significant challenge to replace their aging workforce. Clinical Laboratory Scientists (CLS) were often cited as one of the most critical areas. According to interviewed health care providers, some health systems have a CLS workforce with an average age well over 50.

- *Race/Ethnicity:* There is greater need for a culturally and linguistically competent allied health workforce to serve the needs of the state's increasingly diverse population. The current workforce does not adequately reflect this growing need.

Educational Characteristics and Licensing Requirements

The vast majority of allied heath professions require advanced training; however, educational requirements vary significantly across roles. A substantial portion of these occupations require only a certificate or Associates degree that can typically be earned in one to two years in a community college or vocational school. Other allied health roles require more educational preparation, including Bachelors, Masters, and even doctoral level degrees.

The state is responsible for licensing and establishing other regulations such as scope of practice. Similar to educational requirements, licensing requirements also vary across allied health occupations. While many professions are licensed and regulated, some health occupations, such as Surgical Technologists, are not regulated by the state. Exhibit 3 shows how the educational and licensing requirements of the allied health professions analyzed in this study vary greatly depending on the role. With so much variation in education and licensing requirements, developing policies aimed at the allied health workforce can be challenging, although a large part of this workforce is clustered at the certificate and Associate degree level indicating a natural area to target.

Exhibit 3: Education and Licensing Requirements for Selected Health Professions

Minimum Education Requirement	Allied Health Profession	Licensed?
No Requirement	Medical Transcriptionists	No
	Surgical Technologists	No
Certificate	Emergency Medical Technicians and Paramedics	Yes
	Pharmacy Technicians	No
Associate Degree	Cardiovascular Technologists and Technicians	No
	Dental Hygienists	Yes
	Diagnostic Medical Sonographers	No
	Physical Therapist Assistants	Yes
	Medical Radiographers	Yes
	Registered Nurses	Yes
	Respiratory Therapists	Yes
Bachelor Degree	Clinical Laboratory Scientists	Yes
Advanced Degree	Pharmacists	Yes
	Licensed Clinical Social Workers	Yes
	Physical Therapists	Yes

Projected Growth of the Allied Health Workforce in California

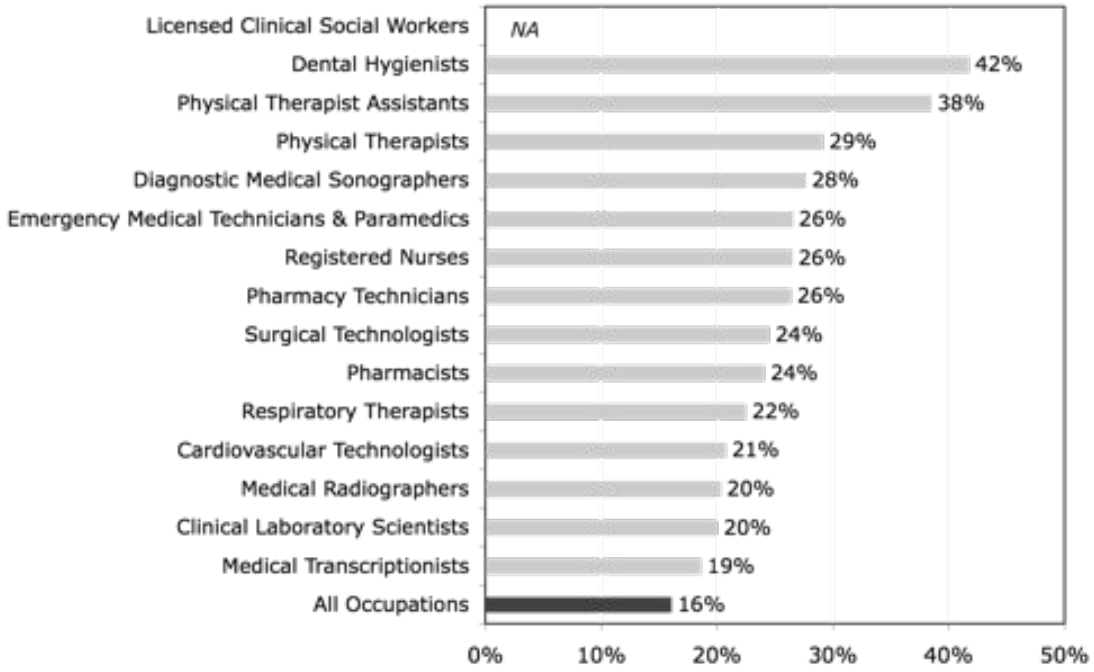
Mirroring national growth trends, the demand for allied health professionals in California is expected to grow dramatically in the coming years. The majority of allied health professions fall into a few large health care occupational groups. As Exhibit 4 shows, these health care occupational groups are expected to far outpace the average expected growth rate of all occupations in California.[8]

Exhibit 4: California Projected Employment Change, 2004-2014

Occupation Group	Employment Growth	
	Percent	Numerical
Healthcare Support Occupations	30%	15,710
Healthcare Practitioners and Technical Occupations	24%	26,240
Total Health Care Occupations[i]	**26%**	**41,950**
All Occupations in California	*16%*	*649,690*

Using the 15 health professions studied in this paper as examples, Exhibit 5 shows that every single studied profession is expected to grow faster than all occupations combined. In the examples of Physical Therapist Assistants and Dental Hygienists, projected growth is more than double the average growth rate. Given the intensifying levels of demand for allied health workers, it is imperative that California examines its ability to provide an adequate workforce.

Exhibit 5: California Projected Employment Change for Selected Health Professions, 2004-2014



Source: California Labor Market Information Division. Projections of Employment by Occupations. 2004-2014.

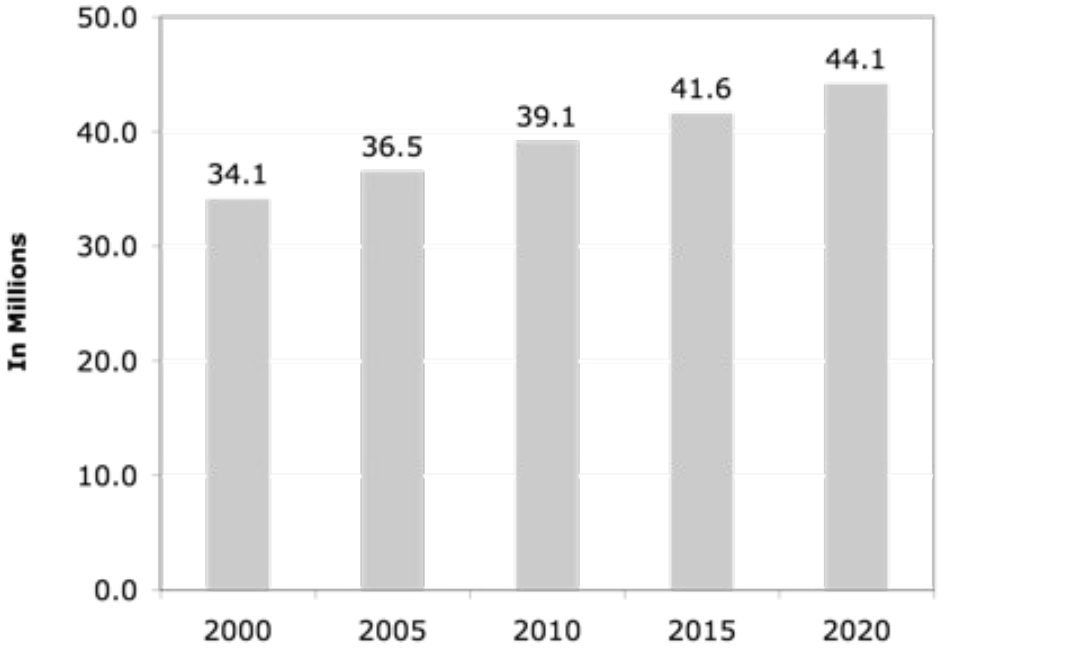
[i] Combined employment growth rate for Healthcare Support Occupations and Healthcare Practitioners and Technical Occupations

Demand of Allied Health Workforce in California

There are a multitude of factors behind the growing demand for allied health workers in California, the primary driver being California's growing, aging, and increasingly diverse population.

Population Growth
The population of California is the largest in the nation and is expected to grow at a rate of 29% by 2020, outpacing population growth of 19% in the Unites States as a whole[9] Exhibit 6 illustrates the dramatic population growth in California that is expected to continue.

Exhibit 6: California Actual and Projected Population, 2000-2020



Source: California Department of Finance, July 2007, and calculations by Health Workforce Solutions LLC

Aging Population
Californians over the age of 65 are the fastest growing population group. The state's elderly population is expected to swell by 75% between 2000 and 2020.[10] Increasing average ages means greater demand for health professionals as the elderly population utilizes health care at a much higher rate than the general population. In fact, average health care expenditures increase fourfold between age 65 and 97.[11]

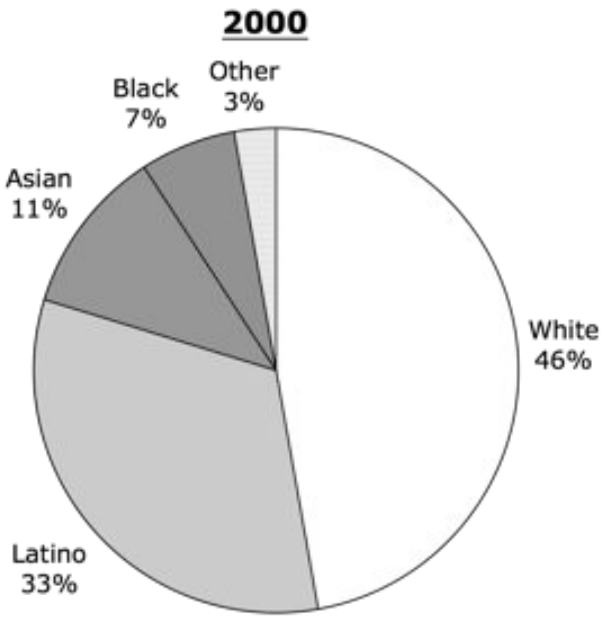
Aging Workforce
The allied health workforce reflects the aging trends seen more broadly across California. The increasing average age in some allied health occupations, such as the Clinical Laboratory Scientist, is cause for great concern.[12] According to the California Board of

Registered Nurses, the average age of RNs in California is 47.7 and almost half are 50 or over. [13] A recent survey by the National Association of Social Workers found that 63% of Licensed Clinical Social Workers were 44 years or older.[14] Increasing average ages across the health workforce translates into a greater demand for replacement workers in the next decade.

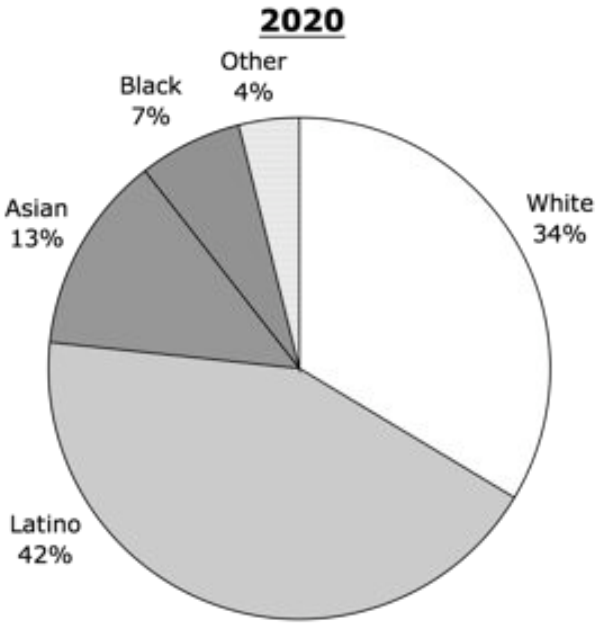
Need for Diversity in the Allied Health Workforce

California's increasingly diverse population intensifies the need for a culturally and linguistically competent allied health workforce. As Exhibit 7 shows, by 2020, the state's white population is projected to drop to only 33.7% of the total population while the Latino population is expected to grow to 43%. [15] US Census data from 2005 indicates that more than 27% of California's population is foreign born and 42% speak a language other than English at home.[16] As Exhibit 1 (presented earlier) shows, the majority of allied health workers are White Non-Hispanic and there are disparities between the distributions of race groups among allied health workers as compared to the general population in California.

Exhibit 7: California Population Distribution by Race, 2000 and 2020



Source: Planning for California's Future: The State's Population is Growing, Aging, And Becoming More Diverse. California Budget Project - Budget Backgrounder November 2005.



Source: Planning for California's Future: The State's Population is Growing, Aging, And Becoming More Diverse. California Budget Project - Budget Backgrounder November 2005.

In addition to the primary drivers outlined above, there are other contributing factors to the demand for allied health workers.

- *Geographical Distribution:* Certain regions are growing faster than the state or are more remote, contributing to a greater demand for allied health workers in those regions.

- *Changing Regulations*: Government regulations, such as staffing ratios, can increase demand.

- *Migration:* Migration flows in and out of the state can affect the demand for health workers through both general population and health workforce fluctuations.

- *Technology:* Technological innovations can stimulate or weaken the demand for health workers either by increasing demand for health services or automating tasks previously assigned to a health occupation.

Supply of Allied Health Workforce in California

The true supply of allied health workers in California is difficult to determine. Unlike the demand data that includes current and future job openings by occupation, there is very little supply information to evaluate. The supply of allied health workers consists primarily of graduates from the California educational system and qualified workers who migrate into the state. However, there are no standardized educational and migration statistics for allied health professions to help assess the supply outlook. Lack of supply

data at the state level is a huge impediment for workforce planning and effective policy making. Without robust supply data, workforce shortages must be determined through anecdotal evidence and proxies.

Despite the lack of standardized supply data, there is clear indication of allied health workforce shortages in California from anecdotal evidence, proxies based on current employment data, and specific analysis of the health professions profiled in this study. Several large health care employers and representatives from the California Community Colleges, California State University, and University of California were interviewed as part of this research effort. All stakeholders interviewed agreed that there are significant current and projected shortages of allied health care workers.

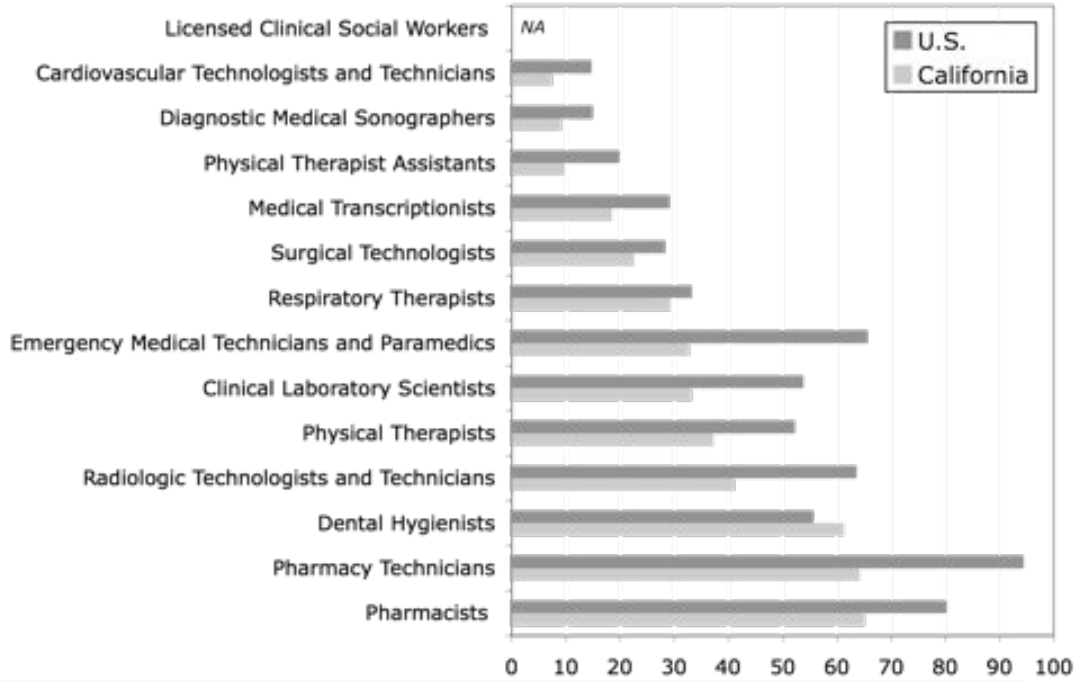
Based on those interviews, Exhibit 8 depicts the most commonly identified health professions facing critical shortages in ranked order. This table should not be interpreted as a comprehensive list of critical shortage areas. Rather, this information should be used as evidence of workforce shortages in California and to highlight the need for comprehensive health workforce data to better inform policymaking.

Exhibit 8: Health Professions Facing Critical Shortages – Most Commonly Identified Professions in Ranked Order[17]

Rank	Health Profession
1	Imaging (Radiologic Technician, MRI Technician, Ultrasound, etc.)
2	Registered Nurses (RN)
3	Pharmacists
4	Respiratory Therapists
5	Physical Therapists
6	Clinical Laboratory Scientists
7	Occupational Therapists
8	Speech Pathologists
9	Behavioral Health (including Social Workers and Mental Health Professionals)
10	Pharmacy Technicians

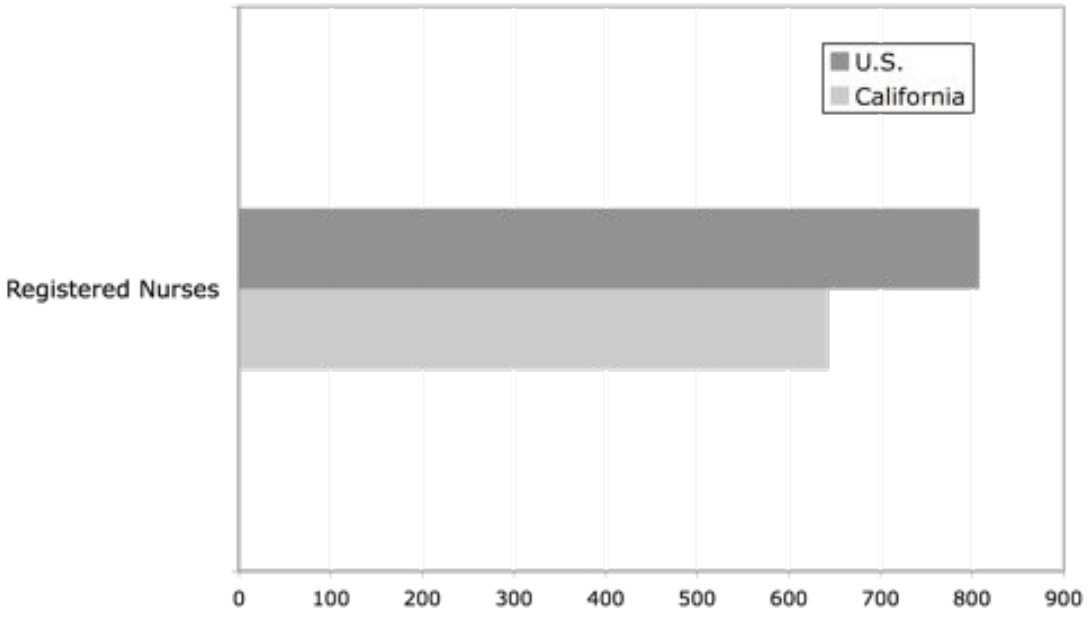
Benchmarking the number of employed allied health professionals to the general population in California and nationally provides insights into relative supply levels. Exhibits 9 and 10 show the level of allied health professional per 100,000 population for the allied roles examined in this study. With the exception of dental hygienists, all the selected professions where data is available lag the nation in relative supply levels.

Exhibit 9: Selected Health Professions Employment per 100,000 Population



Source: US Department of Labor, Bureau of Labor Statistics and US Census Bureau, Quick Facts. 2006.

Exhibit 10: Registered Nurses Employment per 100,000 Population

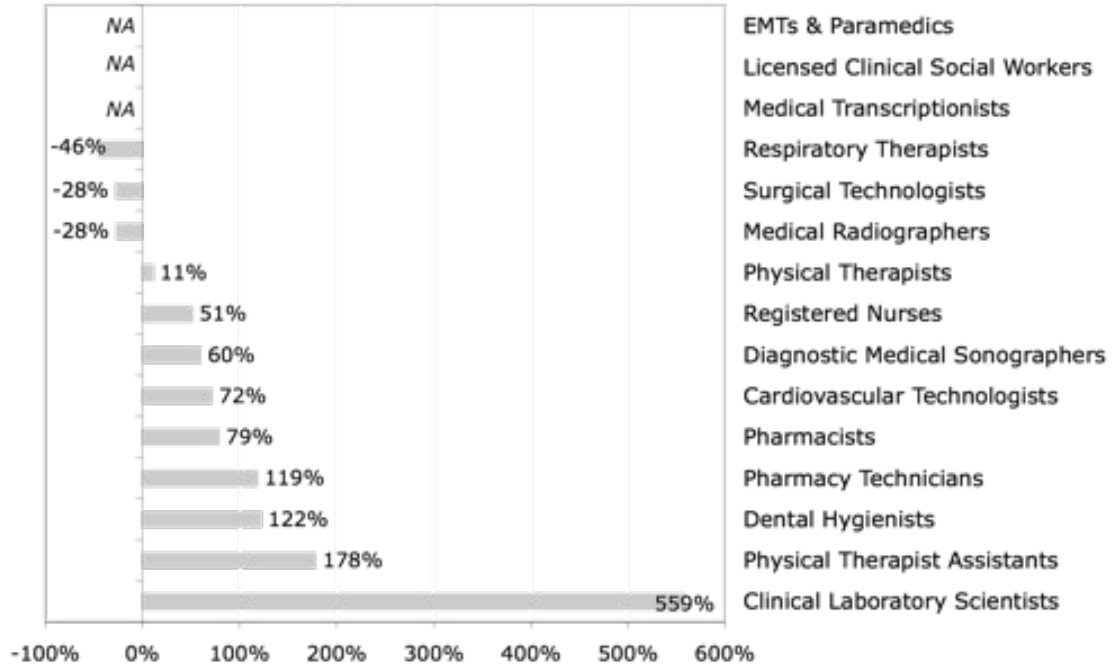


Source: US Department of Labor, Bureau of Labor Statistics and US Census Bureau, Quick Facts. 2006.

To determine potential workforce shortages, both demand and supply data must be analyzed for individual professions. In Appendix A, shortfall estimates are depicted for the selected health professions where data was available. Combining projected employment demand data with supply estimates based on recent graduation data for the selected health professions, projected workforce shortages were found in nine of the twelve professions. With a median of 79%, the estimated annual shortages ranged from 11% to a staggering 559%. That means that the supply of those professions must be increased by 11% to 559% to meet projected health care needs.

Interesting to note, interviewed stakeholders cited Respiratory Therapists and Surgical Technologists as professions being in short supply but the estimates in Exhibit 11 do not reflect that. The discrepancies are likely due to weak workforce data collection in California. When a profession is unlicensed, like Surgical Technologists, it can be hard to assess how many workers enter the profession. Even when professions are licensed, that data is not always tracked and publicized. As these examples show, effective workforce planning is very difficult when policies must be based on anecdotal evidence and estimates.

Exhibit 11: Estimated Annual Shortfalls for Selected Health Professions



Source: HWS analysis of CA Labor Market Information Division employment projection data and educational program data from the AMA Health Professions Directory and Education Data Book and other supply sources as noted in Appendix A.

Sources of Allied Health Workforce Supply

The primary supply of allied health professionals in California are graduates from the California educational system and private schools and qualified workers who migrate into the state.

California Community Colleges
Educational requirements for most allied roles are on-the-job training or one to two year programs resulting in a certificate or Associates degree. Therefore, the majority of education occurs in community colleges or vocational schools. In fact, 70% of new nursing graduates in California are trained within the community college system. [18]

Effectively aligning educational offerings with area workforce needs is especially critical in the community college system. Students entering allied health programs typically want to attend school and enter the workforce in their own community.[19] There are over 200 allied health occupations and individual community colleges can only offer a small subset of all health training programs needed. Therefore, it is critical to align area workforce needs with community college offerings. This can be incredibly challenging given data limitations. Recently, a Sacramento area community college was exploring the idea of a Pharmacy Technician program. Through grassroots efforts to verify local demand for a program, it was eventually determined that the area needed Physical Therapists, not Pharmacy Technicians.[20]

California State University and University of California
The California State University (CSU) and the University of California (UC) provide educational preparation for allied roles requiring Bachelor's degrees or higher. There is more geographic flexibility with graduates of these programs, but alignment between program offerings and workforce needs is still essential.[21] A 2007 study by the Center for Health Professions at UCSF found that programs for Respiratory Therapists and Medical Radiography were clustered in major metropolitan areas with very few educational offerings in other parts of the state.[22]

Migration and Immigration
Another source of allied health workforce supply are qualified professionals who migrate into the state and foreign-born health professionals. Although these supply sources are important to meeting workforce demand and are essential to workforce planning, there is no publicly available data on the inflows (and outflows) of new qualified allied health professionals in (and out of) the state. Licensing boards are a potential source for this information but most do not make this data readily available. Statistics on the migration patterns of college-educated workers are available though. A 2007 study by the Public Policy Institute of California concludes that California is projected to have a significant shortage of college-educated workers in comparison to the needs of the economy and that there will not be enough migration of college-educated workers into to the state to meet the projected demand of highly skilled workers.[23]

Factors Limiting the Supply of the Allied Health Workforce in California

Similar to demand drivers, there are a multiple, complex forces influencing the supply of allied health professionals in California.

Educational Capacity Constraints
In interviews with stakeholders, limited educational capacity in allied health educational programs was overwhelmingly cited as the greatest factor restricting workforce supply. Several factors contribute to capacity constraints.[24] Allied health programs are significantly more expensive compared to more traditional course offerings. High faculty to student ratios, laboratory and medical equipment, and clinical placements all drive up costs.[25] In the California Community College system, schools are reimbursed the same rate for each full time equivalent student regardless of whether that student is an English or Pharmacy Technician student, creating disincentives for schools to expand program offerings. Recent national data for allied health and California specific data for RNs highlight these cost disparities:

- The Cecil G. Sheps Center for Health Service Research at the University of North Carolina calculates that the average cost a community college to provide a two-year associate degree in allied health is $35,000 [26]

- According to a 2006 report, California Community Colleges receive $7,000 for two years of nursing instruction but it costs an average of $20,000 to provide that education[27]

Lack of clinical placements and faculty shortages can also severely limit educational expansion. Interviewed educational providers identified the lack of clinical sites, a health care setting where students receive hands on training, as their greatest challenge. Some allied health programs reported feeling squeezed out by the attention focused on RN training while most reported that there are just simply not enough clinical sites.[28]

The limited supply of qualified faculty also challenges schools, with wage disparity between clinical work and academic positions being cited as one of the barriers.[29] Professionals can sometimes earn up to twice as much working in health care facilities compared to academic settings.[30] Educators suggest subsidizing faculty positions or using dedicated funds to pay higher wages but worry about equity issues with other departments in the system.[31]

In addition to the capacity challenges specifically facing allied health programs in community colleges, the community college system is struggling to provide services across all programs in the face of limited funding and rapid student growth. In Fall 2003, more than 175,000 students were denied access due to reductions, with some campuses cutting course offerings by as much as 25%.[32] Although course offerings and enrollments have recovered, colleges continue to face challenges offering the needed math, English, science prerequisites, and specific healthcare programs. Unless dramatic expansion is undertaken, student enrollment is expected to far surpass the system's capacity by 2012.[33]

Educational System Inefficiencies

In an educational environment with growing waiting lists and increasing pre-requisite requirements, there are still empty slots in certain allied health educational programs.[34] A lack of bridges between academic health programs means waitlisted and other qualified students are not being given the opportunity to move into empty seats. Whether that seat is at a neighboring community college or in a different health occupation, given projected workforce shortages, it is critical that all allied health educational slots are filled.

Difficulties navigating the California educational system are potentially limiting the supply of allied health professionals. According to stakeholder interviews, confusion over transfer requirements and a lack of system-wide agreement on program pre-requisites and curriculum pose significant barriers to students. As a result, strong deterrents are created as students are often required to re-take classes when moving between systems or campuses or take longer to finish programs. Streamlining the educational process across community college campuses and districts, as well as across the CCC, CSU and UC systems will likely remove student barriers and improve the supply of allied health workers.

High Attrition Rates in Allied Health Educational Programs

High attrition rates in allied health educational programs are another significant factor limiting supply. Attrition rates for all allied health programs are not readily available, but data on a recent cohort of all California Community College nursing graduates showed that 25% graduated behind schedule and 25% did not graduate at all.[35] This trend is also reflected across the broader community college system. A 2007 study by the California Postsecondary Education Commission found that approximately 50% of community college students tracked over a five-year period left without earning a degree or transferring.[36]

According to interviews with educational providers, there are several key factors contributing to poor outcomes. A primary reason students are not succeeding is that they are unprepared to navigate the system and achieve academically. Lacking coaches and mentors earlier in life, students are entering post-secondary educational programs without knowing what they want to accomplish or how to achieve those goals. Arguably even more important, students are ill prepared to succeed in the course work, especially math and science. Given that math and science courses comprise the base of almost all allied health programs, this challenge must be addressed to ensure an adequate supply of health workers.

As mentioned before, many allied health programs are impacted. When demand for a health program in the community college system exceeds supply, colleges use either a lottery or a "first come first serve" system to allocate seats. Many educators and health care employers are concerned over the quality of students admitted to programs under this process.[37] Some believe that if a comprehensive merit based system was implemented, the quality of students would raise and graduation rates would improve.[38] This has been the case with BSN programs in the CSU system. Increased demand for the programs combined with stringent application criteria has ensured high quality students

and excellent graduation rates. However, the policy has also resulted in a more homogeneous student body.[39]

Lack of Student Supports
Lack of student supports, from financial aid to transportation, is a huge factor in poor student outcomes. Attending college, even a community college with low fees, is an expensive proposition due to the costs of books and living expenses, and the ability of students to afford an education will greatly impact the supply of new allied health workers. Access to financial aid is even more important now because many students in community colleges are low-income, have families to support, and must continue to work while pursuing education. Many students are also older; data from the 2004 Spring semester showed that almost 39% of California Community College students were in their 30's and 23% were ages 40 and older.[40]

Interviewed stakeholders stressed that students need much more than financial support. They attribute high attrition rates to a lack of "wrap around" support services: tutoring, counseling, childcare, transportation, etc. Students need help managing and balancing both school and life and need services attuned to those challenges. Interviewees also emphasized the need to involve families and parents in the educational process, as families often do not understand the demands that will be placed on a student's time and are ill prepared to support students through the educational process.

Limited Interest in Certain Allied Health Professions
To have an adequate supply of allied health workers, there must be knowledge of and interest in all allied health professions. The majority of stakeholders interviewed for this project identified a lack of knowledge about health careers as a significant factor limiting supply. When thinking about health care careers, the general population is typically only aware of a few well-known positions, such as nurse or physician. Limited exposure to health careers through outreach programs and a lack of counselors and mentors in the middle schools and high schools were commonly cited as reasons for this lack of awareness.[41] Interviewees also stressed the importance of early outreach before high school as many students have already decided what they "don't want to be" by that point. Although the lack of capacity was cited as a significant problem, increasing awareness of health occupations is needed to ensure that students consider less visible occupations.

Other factors contribute to a limited interest in allied health occupations. Women, who have historically filled allied health roles, have more professional choices now and can choose to enter a different field. Perceptions about health career opportunities and work environment as compared to other fields, like technology, also influence potential candidates.

Retention Challenges in the Workplace
Interviewed health care providers overwhelmingly cited retention as one of their primary challenges. Health care is a demanding sector and many new graduates are entering the workforce ill equipped to handle the corresponding pressures and expectations. Some employers are concerned with the quality of current and future graduates and are finding

that they sometimes have to teach new hires "the basics." In addition to poor academic and clinical readiness, employers are also struggling to adapt to changing expectations and attitudes of a younger workforce. Some employers find that new graduates do not want to work certain hours or "pay their dues."[42] The combination of an intense work environment and the mismatch between employer and employee demands can results in job dissatisfaction and turnover.[43]

Compensation is another critical component of workforce recruitment and retention. Large health care facilities can afford to set the market pay rate and attract workers away from other facilities. As a result, smaller and more rural health care providers have even greater trouble retaining their workforce.[44] And while recruiting workers from a competitor may solve a facility's current workforce shortage, it is not a sustainable practice in the long run.

Career ladders are often cited as a key tool for increasing retention rates. Tuition reimbursement, on-site academic programs, and release time are all ways to support effective career ladders. Increasingly, these programs are targeted to high performing, non-clinical staff who are interested in moving ahead professionally.[45] Health care providers utilizing these approaches have found them to positively influence their workforce supply and expansion of these programs will likely serve to increase the supply of allied health professionals.

Lack of Robust Allied Health Workforce Data

Effective workforce planning and policymaking relies on robust data and analysis. In California, there is a dearth of allied health workforce data. Without improved data collection, it will be very challenging for policy makers to effectively design strategies to increase the supply of allied health workers. Beyond the state and national data on employment needs and wages, there is very little standardized data collection of key components such as current and future supply, demographic characteristics, and regional data.

The lack of quality supply data is perhaps the greatest challenge to effective policymaking. Supply data is often based on anecdotal evidence, which at best is not complete or entirely representative off all needs across the state. Data on educational program capacity are often used to proxy supply but this too poses many challenges. To most effectively track supply, data on vacancies, licensing applications and renewals, and migration in to and out of the state must be collected and analyzed.

Without state level demographic data that clearly defines key characteristics of the allied health workforce, it is very difficult to design effective policies to combat shortages. Data on average age of workers by profession would highlight occupations facing a more critical need for replacement workers. Race/ethnicity data of newly licensed professionals would allow ongoing tracking of diversity needs. Similar data at the student level would also allow for more targeted solutions. In an era of limited funding, policymakers need comprehensive data to design targeted and effective strategies.

Accurate, comprehensive supply and demographic data at the state level is critical for policymaking. But to truly design successful solutions, regional level data is just as essential. Allied health workforce supply and demand conditions are often local.[46] Students entering allied health programs typically want to attend school and enter the workforce in their own community.[47] And labor markets are typically regional for these professions. Regional data allows policymakers and educators to identify and prioritize areas with the most critical shortages and design customized policies to improve supply.

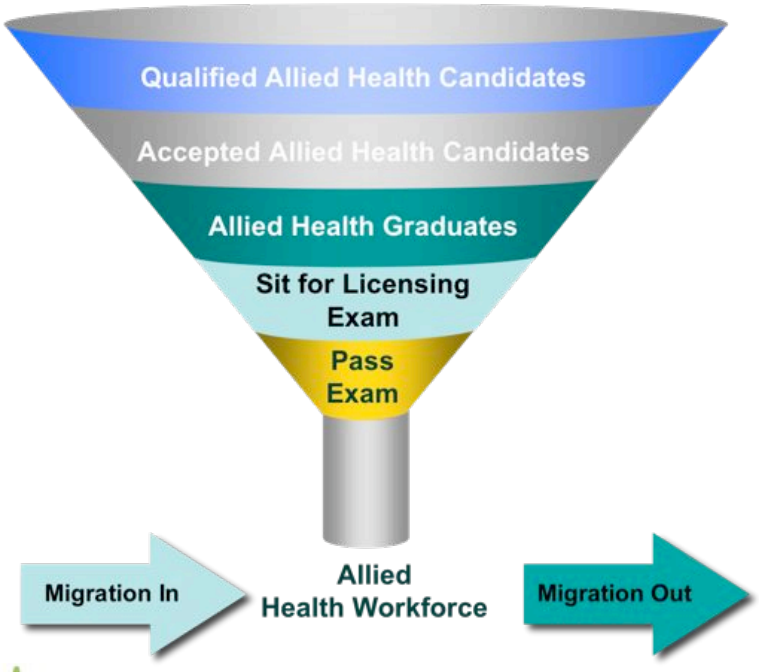
Education and Licensing Requirements

National trends across health professions are towards increasingly higher minimum education requirements and tighter regulation of professions.[48] California requires licensure and certification for many allied health professions and continuing education is often required for renewal. While increased academic preparation and regulations can improve the quality of care delivered in California, they also have the potential to restrict the supply of new allied health workers as they enact significant barrier to entries.

Examining the Supply Chain: Spotlight on Registered Nursing

The myriad of factors contributing to supply challenges highlights the various pressure points needing attention in the supply chain. Exhibit 12 shows how the pool of potential allied health professionals narrows as candidates move through the supply chain. Some professions will have more steps, such as the internship requirement for Clinical Laboratory Scientists, but this graphic presents the typical path a candidate must navigate to enter the allied health workforce. To guarantee an adequate supply of allied health workers, policies must be developed to ensure appropriate levels of candidates at each phase and to ease and improve transitions between the various points of the supply chain.

Exhibit 12: Entering the Allied Health Workforce – A Sample Supply Chain[49]



By examining candidates for registered nursing in California, the importance of addressing workforce shortages at all points in the supply chain becomes very clear. According to the California Board of Registered Nursing (BRN) 2005-2006 school data, only 38% of qualified applicants[ii] gain admission to ADN programs, 70.5% graduate and 87.3% pass the licensing exam on the first try.[50] While these numbers are not for the same cohort of candidates, the data can still be used to illustrate how challenges in the supply chain, such as educational capacity and high attrition rates, impact the supply of health workers. Exhibit 13 illustrates how, using data from the BRN and a couple other simple assumptions, a group of 100 qualified RN candidates might shrink due to challenges in the supply chain.

This chart illustrates the critical combination of how capacity and throughput interact. In this case of nursing, although completion rates for programs and passage rates for licensing can certainly be improved, those gains will be incremental compared to the bottleneck caused by the limited number of slots compared to qualified candidates. In other occupations, this dynamic between qualified candidates, capacity to admit students into educational slots, completion of the educational program, passage of licensing if applicable and entry into the workforce will be different. Nevertheless, this model provides useful insights on where in the supply chain interventions are needed.

Exhibit 13: A Shrinking Pool of RN Candidates – 100 Person Cohort Example

**Assumes 95% of graduates sit for the licensing exam.*

[ii] Student with the necessary prerequisites.

Review of Recent and Proposed Policies to Combat Health Workforce Shortages

In response to growing concerns about health workforce shortages, California has begun examining workforce issues from a more strategic and comprehensive level. The most wide-ranging initiatives address the registered nursing shortage while more incremental steps have been taken towards alleviating shortages in other health professions. There is also pending state legislation that, if passed, will likely impact allied health workforce shortages, as well as enacted and pending Federal policies. While much remains to be done to ensure an adequate health care workforce in California, policymakers and other stakeholders can utilize lessons learned to date from these implemented and pending strategies.

Policies and Practices in California

Nurse Education Initiative

In April 2005, Governor Arnold Schwarzenegger announced a $90 million public-private partnership to provide funding for nurse education. The plan focuses on expanding educational capacity, partnering with health facilities to expand educational opportunities, recruiting and retaining qualified nursing faculty, widening paths to nursing careers, and partnering with the Federal government to increase funding for nursing education.[51] According to the 2006 Nurse Education Initiative Annual Report, through the work already completed, the initiative will have created 10,900 new RNs by 2010, resulting in a 25% decrease in the projected state shortage. Examples of selected strategies include:

- Increasing educational capacity in California Community Colleges, California State Universities and the University of California through dedicated funding
- Encouraging nursing students to become nursing instructors through a loan assumption program
- Providing grants to community colleges to reduce attrition rates, provide more clinical opportunities, and recruit nursing faculty
- Developing nursing and health career pathways for high school students
- Supporting nursing career ladders

Nursing Workforce Initiative

Enacted in 2002 under Governor Gray Davis, the Nursing Workforce Initiative (NWI) was a three-year comprehensive plan designed to address the RN workforce shortage in California. NWI focused on recruiting, training, and retaining nurses through a wide-spectrum of initiatives. These short and long-term initiatives included scholarships for nursing students, career ladder projects, regional workforce collaboratives, and an evaluation of the initiative to determine best practices and direct future strategies.[52] Review of the public evaluation reports did not yield significant information on outcomes but did describe preliminary findings. These findings included:[53]

- Existing partnerships between industry, educators and Workforce Investment Boards allowed for more efficient start-up of programs,
- Most funded programs focused on existing students to improve clear measurable outcomes, like graduation rates and NCLEX pass rates.

- Addressing the nursing shortage at the student level is not enough. Multi-pronged strategies that addressed faculty wages, clinical placements, and retention in the working environment are needed to develop an effective solution.

California Caregiver Training Initiative

The California Caregiver Training Initiative (CTI) was a two-year, $25 million plan designed to increase the number of health caregivers in California. Through competitive grants to regional collaboratives, the initiative funded innovative approaches to recruitment, training, and retention of caregivers in the healthcare industry. [54] According to the CTI Final Process and Outcome Evaluate Report, funded programs were successful in increasing the supply of Certified Nursing Aids (CNAs) and other health professionals such as RNs and psychiatric technicians. Some best practices from the project included:[55]

- Providing comprehensive student supports, especially child care and transportation
- Utilizing distance learning and on-the-job training
- Targeting unique populations, such as migrant worker family members or military corpsmen

State Task Forces and Advisory Committees

Developing task forces and advisory committees focused on workforce issues has proven to be effective in designing and implementing successful strategies. The early successes of Governor Schwarzenegger's Nurse Education Initiative can likely be attributed to the dedicated stakeholders convening under various task forces. California also successfully utilized this approach in response to potential pharmacist shortages. In 2001, California followed recommendations by the Board of Pharmacy's Pharmacy Manpower Task Force to establish a certification process for pharmacist technicians and stop requiring a state-specific pharmacist examination in favor of the national exam. [56]

Comprehensive Workforce Planning

In a major step towards comprehensive health workforce planning, the University of California analyzed the state's workforce needs in relation to health professions education. In a 2005 study, UC strived to align their educational offerings and expansion plans with the workforce needs of California. Of the seven health profession programs offered by UC[iii], shortages were forecasted in all professions except dentistry and optometry. Based on the findings, the University of California is currently implemented expansion plans in several key areas including a new nursing school at University of California, Davis and a new medical school at University of California, Riverside.

[iii] Dentistry, Medicine, Nursing, Optometry, Pharmacy, Public Health, and Veterinary Medicine

Review of Pending and Recently Approved State Legislation in California

In addition to the programs and initiatives outlined above, there are currently several bills pending in the state legislature or with the Governor that could potentially have an impact on the supply and demand of the health workforce in California.

Bill	Summary	Potential Impacts
SB 139 Nursing Education[57] *(Signed by Governor Schwarzenegger in October 2007)*	• Prohibits CSU and CCC RN programs from requiring students with a Bachelor degree to retake pre-requisite coursework. Instead, students are only required to take whatever additional courses are needed to become an RN • Makes various clarifications and adjustments concerning eligibility for SNAPLE (State Nursing Assumption Program of Loans for Education) and the SNAPLE-SF (Nurses in State Facilities Nursing Assumption Program of Loans for Education) • Authorizes CCC to use diagnostic and multi-criteria screening methods if applicants for an RN program exceed capacity • Provides that the statutory expansion of enrollment for specified nursing programs administered by CSU and the UC be funded within the general enrollment growth funding provided for in the annual budget process • Requires OSHPD to establish a health care workforce data clearinghouse to be funded through the California Health Data and Planning Fund	• Could potentially increase RN supply as it streamlines the RN educational process for students with Bachelor degrees • Unclear if or how the adjustments to the loan assumption program may impact the supply of RNs • Selective admissions process may increase quality of student and improve attrition rates thereby increasing supply of RNs • Selective admissions process may negatively impact diversity in nursing students without a focus on improved preparation for underrepresented students • Comprehensive data collection and analysis could potentially increase supply of nursing and allied health professionals through more efficient and targeted policies
AB 1559 RN Enrollment Practices[58]	• Establishes a process and specific criteria that a community college district	• Impact on supply of RNs is unclear

Bill	Summary	Potential Impacts
(Signed by Governor Schwarzenegger in October 2007)	would be required to use when using multi-criteria screening measures to evaluate applicants for RN programs	
AB 520 Hospital Staffing[59]	• Requires general acute care, acute psychiatric, or special hospitals to adopt and annually review a plan or procedure for determining the staffing of non-nursing professional and technical classifications	• Could increase demand for allied health professionals if staffing requirements are implemented
AB 365 Task Force on State Workforce Needs[60] *(Vetoed by Governor Schwarzenegger in October 2007)*	• Requires the California Postsecondary Education Commission, in cooperation with the Labor and Workforce Development Agency, to convene a task force with key stakeholders and report to the Legislature and Governor on their findings and recommendations • Requires the task force to investigate workforce data collection, alignment of workforce needs and educational programs and capacity, and the appropriate authoritative and administrative structure for ongoing research and recommendations • Clarifies the mission of the California Community Colleges economic and workforce development program.	• Enhanced research and evaluation leading to a comprehensive strategy could likely improve the nursing and allied workforce shortages in California
AB 668 Student Financial Aid[61] *(Signed by Governor Schwarzenegger in October 2007)*	• Enacts the California Community College Student Federal and State Financial Aid Opportunity Act. The bill supports an array of initiatives designed to increase the number of CCC students receiving awards from the	• Improved access to financial aid will ease the cost of pursuing higher education and could potentially increase the supply of nursing and allied health professionals

Bill	Summary	Potential Impacts
	federal Pell Grant program and other resources.	
AB 488 CCC Access Grant Program[62]	• Establishes the California Community Colleges Access Grant Program (to be funded with 33% of student fee revenues)	• Could potentially increase supply of nursing and allied health professionals as increased financial supports allows more students to successfully complete academic programs • Unknown impact from transfer of funding away from existing expenditures to the Access Grant Program

Note: Policy review updated as of October 30, 2007. Information subject to change.

Relevant Federal Policies

The Federal government has also responded to concerns regarding health workforce shortages in the United States. Most notably, the Nurse Reinvestment Act aimed at alleviating the RN shortage nationwide. More recently, the Allied Health Reinvestment Act was introduced and is currently in the first step of the legislative process.[63]

Nurse Reinvestment Act
The Nurse Reinvestment Act was signed into law in 2002. Designed to address the nursing shortage from all angles, the comprehensive law:

- Provides scholarships to nursing students who commit to working in public or private non-profit health facilities in critical shortage areas
- Establishes grants for nurse retention and patient safety enhancements
- Provides for programs to train and educate individuals in geriatric care
- Establishes loan cancellation programs for nurses wishing to return to school and become faculty
- Provides grants for career ladder programs
- Promotes the nursing profession through advertising and other educational outreach programs

Allied Health Reinvestment Act[64]
In February 2007, the Allied Health Reinvestment Act was proposed as an amendment to the Public Health Service Act. The bill calls for a comprehensive strategy, similar to the Nurse Reinvestment Act, to address critical shortages in the allied health professions. Elements of the bills include:

- Public service announcements to promote allied health professions
- Grants for supporting relevant state and local campaigns, increasing educational opportunities and career pathways, increasing retention in the work place and developing retention strategies, expanding area health education centers to

develop models of excellence, and expanding clinical training opportunities and mentoring
- Faculty loan funds
- Scholarships for individuals in allied health programs in exchange for work commitments in rural and other medially underserved areas
- Data collection and analysis to determine pipeline and workforce needs

Notably, recent legislation on student financial aid passed by Congress and signed by President Bush increased the value of the Pell Grant, removed tuition sensitivity that will result in larger grants for California Community College students, and reduced the cost of student loans to borrowers.[65] These changes make an emphasis on federal student aid even more important for students seeking to complete allied health programs.

Policies and Practices from Other States:

Concerns about allied health workforce shortages are not unique to California. Other states have begun implementing strategies designed to better understand and address health workforce issues in response to their own challenges. Examining actions in other states highlight common themes that begin to outline best practices.

- *Multiple Stakeholders:* A common theme across the reviewed states is the involvement of multiple stakeholders in the design of strategies and solutions. Stakeholders typically included state and local government, health care providers, educators, and professional associations.

- *Statewide Workforce Strategy:* Developing a comprehensive workforce plan that encompasses multiple approaches for addressing health workforce shortages is another recurring theme.

- *Dedicated Resources:* Through legislation, many states established dedicated resources in terms of both funding and the formation of standing councils or task forces.

- *High Level Support and Visibility:* The base of many state's strategies is a Governor sponsored initiative or campaign.

- *Comprehensive Data Collection:* Establishing a comprehensive health workforce data collections system is a key component of many policy solutions in other states.

Examples

Maryland

- In Maryland, the Governor's Workforce Investment Board formed the Healthcare Industry Initiative in 2003. The Initiative compiled a monograph detailing the state of the workforce in Maryland and brought together over 160 stakeholders for the Governor's Healthcare Workforce Summit. Out of the summit, a comprehensive action plan was formed and all stakeholders began implementation of assigned objectives. Currently, the initiative is examining outcomes and reviewing next steps.[66]

- In 2006, Maryland passed legislation to create the Nurse Support Program Assistance Fund.[67] The Nurse Support Program (NSP) is administered by Maryland's Health Services Cost Review Commission (HSCRC) and is designed to increase nursing program capacity. The first phase of the initiative provides funding, including scholarships and living expenses grants, for nursing faculty. The second phase will provide competitive grants for programs aimed at expanding educational capacity, improving nursing student retention, and

developing the pipeline for nurse faculty. Funding for the initiative is provided by a 0.1% increase to the rate structure of Maryland hospitals. [68]

Massachusetts:

- In 2006, Massachusetts convened a roundtable of over 70 key stakeholders to develop a comprehensive policy action plan addressing health workforce development in the state. Stakeholders identified 12 strategies to improve workforce development in the state and called for the formation of a health care workforce strategy task force to research, manage and implement a statewide workforce strategy.[69] Legislation establishing the task force as well as improved data collection to inform decision-making was proposed in early 2007.[70]

Minnesota:

- In 1993 the Minnesota Legislature mandated regular, comprehensive tracking of health care workforce data. The Department of Health, Office of Rural Health and Primary Care, works with licensing boards and health care providers to track a variety of data points, including practice location and setting, retirement plans, and race and ethnicity. Although participation is voluntary so the data does not account for all licensed professions, Minnesota is able to analyze 12 health professions in great detail and develop general health workforce outlooks for the entire state.[71]

Nebraska:

- The Health Professions Tracking Center, at the University of Nebraska's Medical Center, has been tracking health workforce information since 1995. Collected data includes demographic information, educational preparation, languages spoken fluently, retirement plans, and practice setting.[72]

North Carolina:

- In 1991, allied health professionals, educational providers, and health care employers formed the Council for Allied Health in North Carolina (CAHNC). The council strives to ensure that North Carolina has a well-distributed, qualified allied health workforce. CAHNC focuses on developing strategies to promote allied health occupations to students and potential career changers, collecting and analyzing workforce data, providing information to the state's general assembly and making recommendations to policymakers. Some of CAHNC's accomplishments include developing a comprehensive state plan to address workforce shortages in 1994, successfully lobbying for educational capacity expansion in 1998, and working with the Cecil G. Sheps Center for Health Services Research to improve workforce data collection.

- The Cecil G. Sheps Center for Health Services Research works with the North Carolina Area Health Education Centers Program (AHEC) and health professions licensing boards to maintain the North Carolina Health Professions Data System. Funded through AHEC and the Office of the Provost (Health Affairs) at the University of North Carolina, the system tracks data for a variety of health

professions. A sample of the data collected includes: home address, business address, age, sex, race, educational background, activity status, practice setting, total hours worked in an average week and percent time in direct patient care. From the data analysis, researchers have developed a state outlook for allied health roles, in-depth studies of several allied health professions, and a vacancy tracking system.[73]

Oregon:

- Under the leadership of Governor Ted Kulongoski, the state of Oregon is increasing access to affordable health care though a variety of approaches. Realizing that an adequate supply of health care workers is directly tied to maintaining health care costs, one key strategy is the Governor's Health Care Workforce Initiative.[74] Utilizing public-private partnerships to sustain the initiative, the non-profit organization, Oregon Healthcare Workforce Institute (OCWI), was established in December 2006. OCWI administers many projects designed to track supply and demand data, expand educational and clinical training capacity, connect stakeholders for collaborative problem solving, and provide funding.[75] Projects promoted by OCWI include:

    - Community College Healthcare Action Plan, a three-to-five year initiative coordinating the efforts of Oregon's community colleges as they expand healthcare training programs through collaborations with each other, healthcare providers, and four-year public and private colleges and universities across Oregon.[76]

    - K-12 Healthcare Workforce Pipeline Programs, a variety of educational and outreach programs designed to guide Oregon's youth towards careers in health and increase diversity.[77]

    - Pathways to Advancement, an initiative designed to increase the number of Oregonians who attain degrees or certificates in high demand occupations by easing student transitions between educational systems and offering flexible education delivery methods.[78]

- Legislation passed in 2006 created the Oregon Center for Health Professionals (CHP) at the Oregon Institute of Technology.[79] CHP provides baccalaureate programs in a variety of allied health fields and is committed to addressing Oregon's health workforce shortages though program expansions, student supports, and industry partnerships. A new facility is currently under construction and will house state of the art laboratories, classrooms, clinics and offices.[80]

Texas:

- According to a policy review by the Association of Academic Health Centers, the governor of Texas, Rick Perry, has a standing council on health workforce planning. Recently, the council identified nursing as a critical concern and successfully lobbied for $47 million in new funding for nursing.[81]

Wyoming:

- In 2003, Wyoming passed legislation creating the Wyoming Healthcare Commission. The commission is tasked with designing effective policies to improve the quality of, and access to, health care in Wyoming, including strategies to ensure an adequate health workforce.[82] To better inform decision-making, the commission partnered with the Health Professions Tracking Center at University of Nebraska to track and analyze health workforce data in Wyoming.

Policy Recommendations

California has the opportunity to improve the quality and affordability of health care in the state by developing major new initiatives focused on the allied health workforce and sustaining efforts to prepare future nurses. Because of the vast number of these professions and the range of academic skills necessary to succeed in them, considerable attention should be given to overall improvements in college preparation, access and success. Based on interviews with stakeholders across the state, reviews of pertinent literature, and analysis of existing legislation, we have developed several key recommendations for immediate policy action.

Improve Student Outcomes
Multiple strategies to improve student outcomes should be developed and implemented. Strategies should focus on support for students in postsecondary education programs and in the K-12 system as well as curriculum and instruction.

1. Develop solutions responsive to the needs of diverse student populations, who have historically been underrepresented both in higher education and in the healthcare workforce.

2. Postsecondary student supports should focus on improving graduation rates, the length of time to complete programs, and the quality of graduates in the workforce. California should provide increased financial aid, ensure100% maximization of state and federal entitlement programs, and increase awareness and assistance to apply for those funds. The state should also offer targeted tuition reimbursement and scholarships to incentivize students to practice in critical shortage areas or become allied health educators.

   Targeted funding should also be allocated for other student support services, such as tutoring, childcare, health insurance and transportation. Finally, the state should sponsor enhanced counseling and mentoring services to help students navigate the educational system, set career expectations, and manage their lives as busy allied health students.

3. Since many students are entering postsecondary education ill equipped to succeed, California must focus on improving student readiness in grades K through 12. Students need better academic preparation, particularly in math and science courses. The state should focus on enhanced tutoring and remedial services for youth as well as improved achievement on math and science assessment exams in high school. Additionally, California should provide increased funding for counselors and other outreach personnel to help students better prepare to navigate the educational system in the future.

4. In addition to increased student supports, instruction methods and curriculum design should be continually evaluated and redesigned for maximum student

learning. This is particularly true for training programs targeting non-traditional students and for health professionals advancing up a health career ladder.

Expand Educational Capacity and Program Slots
The state should focus on expanding educational capacity to improve the pipeline of new allied health professionals. Allied health programs are more expensive than traditional education programs so the state should review the reimbursement policy or provide dedicated financial support. California should focus on developing allied health faculty by subsidizing faculty positions and offering loan reimbursement to master prepared students in exchange for teaching in health programs. California should also ease clinical placement problems by dedicating resources to the clinical placement process, such as creating an online scheduling system.

1. Investment and attention must be continuous and sustained given ongoing demand drivers such as an aging population and health care workforce.

2. Both slots for allied health education programs and capacity of science, math, English and basic skills programs necessary for success in the healthcare workforce must be increased.

3. The focus on nursing must be sustained while developing and integrating new initiatives in allied health.

Establish Comprehensive Data Collection and Analysis
Allied health data collection and analysis must be dramatically improved to allow for effective workforce planning and policymaking. California Senate Bill 139 (sent to Governor Schwarzenegger for approval on September 19, 2007) contains a data clearing house initiative that could greatly improve the level of data collection in the state. However, California must still take steps to ensure that a comprehensive and accurate data collection system is established with mandated participation from schools, licensing boards and large health care providers. At a minimum the state should routinely collect data on vacancy rates, education program capacity, graduation and attrition rates, licensing information, practice setting, age, demographics, and migration flows of qualified allied health professionals in the state. Data should be collected and analyzed at both the state and regional level to determine critical shortage areas for targeted policy solutions.

Develop a Comprehensive, Strategic Plan Involving all Stakeholders
With so many factors contributing to an inadequate supply of allied health professionals, there is no "magic bullet" policy solution. A multi-faceted problem requires a portfolio of targeted strategies. Taking a cue from the California Nurse Education Initiative and successful approaches in others states, California should develop a comprehensive strategic plan to address allied health workforce development. Multiple stakeholders should be involved in the development of the plan, including state and local government, educators, health care providers, professional associations and labor groups. This newly

created council or task force should evaluate the current state of allied health workforce in California and develop solutions across the entire range of challenges.

Remove Educational System Inefficiencies
California should focus on improving communication and requirements between campuses and education systems to streamline the educational process for students. Stronger coordination and alignment between community college campuses and districts, as well as between community colleges and university systems is needed. Bridges between academic programs (across professions and campuses) should be established to allow students to find and fill empty seats in allied health education programs and advance their educational progress. CCC representatives should collectively agree on pre-requisites and curriculum requirements for allied health programs so students can easily move between campuses and to strengthen coordination with K-12 schools. Similarly, coordination with UC, CSU and other educational institutions should be strengthened to provide streamlined paths to programs requiring BA or higher degrees. Additionally, schools and systems should consider developing core prerequisites for allied health programs. Going further, given the number of specific allied health programs, consideration should be given to bundled academic programs that prepare students for a number of related occupations.

Encourage Deep Partnerships between Colleges and Employers
The state should provide grants and other supports to encourage deep partnerships between schools and employers to increase the supply of clinical faculty and placements and create health workforce pipelines for local employers.

Increase Awareness of Allied Health Professions
To ensure an adequate and continued supply of new allied health workers, the state must invest in outreach and educational programs to improve public awareness of preparation for allied health professions. Programs should target youth and underrepresented minorities and should prepare students to be successful in those careers by emphasizing math and science readiness. Programs should also include family and parent outreach to educate parents on career opportunities for their children and create a larger support network for youth who want to pursue health careers.

Promote Career Ladder Projects and Partnerships
California should fund competitive grants for local and regional career ladder projects and partnerships between schools and health care providers to increase the supply of allied health workers though expanded access to education and shared resources. Funded grants should include programs aimed towards training non-clinical health care staff to become health professionals, advancement of health workers to higher positions, health systems providing clinical faculty to schools, expanding clinical opportunities, and mentoring and training relationships between industry and educational system.

Recommendations for Educational Providers
Individual educational institutions can and should implement strategies to increase the supply of allied health workers. Schools should reevaluate the distribution of full-time

and part-time faculty across disciplines and utilize part-time faculty for health programs where a clinical instructor may only be available on a limited basis. Schools should also examine existing health training program curriculum and remove any unnecessary barriers to students entering and completing programs.

Recommendations for Health Care Employers

Health care employers also play a critical role in ensuring an adequate health workforce and should actively implement or expand career ladders for clinical and non-clinical employees and partnerships with local educational providers to expand access to education for employees.

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