Meeting the Demand for Health
Final Report of the
California Future Health Workforce Commission

FINAL DRAFT: January 2019
Commission Makeup and Structure

The Commission was cochaired by Janet Napolitano, president of the University of California (UC), which operates the largest health sciences education and training system in the nation and is a major health provider, and Lloyd Dean, president and CEO of Dignity Health, one of the state’s largest health systems and health employers. The 25 commissioners included prominent health, policy, workforce development, and education leaders in the state.

Commission Members

Janet Napolitano, JD  Lloyd Dean, MA
Cochair  Cochair
President  President and CEO
University of California  Dignity Health

Anne Bakar  Linda Burnes Bolton, DrPH, RN, FAAN
President and CEO  Vice President for Nursing, Chief Nursing Officer
Telecare Corporation  Cedars-Sinai

America Bracho, MD, MPH  David Carlisle, MD, PhD, MPH
Executive Director  President and CEO
Latino Health Access  Charles R. Drew University of Medicine and Science

Joseph Castro, PhD, MPP  Patrick Courneya, MD
President  Executive VP and Chief Medical Officer
California State University, Fresno  National Health Plan and Hospitals Quality

Barbara Ferrer, PhD, MPH, MEd  Hector Flores, MD
Director  Chair, Family Practice Department
Los Angeles County Department of Public Health  White Memorial Medical Center

Jane Garcia, MPH  C. Dean Germano, MHSc
President and CEO  CEO
La Clínica de la Raza  Shasta Community Health Center

Elizabeth Gibboney, MA  Alma Hernandez
CEO  Executive Director
Partnership HealthPlan of California  SEIU California

Ed Hernandez, OD  Rishi Manchanda, MD, MPH
Former Senator  President
California State Senate  Health Begins
Commission Staff

The Commission, which launched in August 2017 and met quarterly until January 2019, received staff support from a management team codirected by Kevin Barnett, senior investigator at the Public Health Institute, and Jeffrey Oxendine, former associate dean at the UC Berkeley School of Public Health. The codirectors were supported by Veronica Mijic, who served as the project manager, and the team of consultants listed in Appendix B.

Technical Advisory Committee

A Technical Advisory Committee (TAC), which provided the Commission with in-depth, targeted knowledge, was comprised of senior-level leaders from associations, agencies, educational institutions, health systems, communities, and organizations with expertise and relationships in relevant health, workforce, education, and policy areas. A complete list of the TAC members is in Appendix B.

Subcommittees

Subcommittees provided content expertise in the three areas of focus: (1) primary care and prevention, (2) behavioral health, and (3) healthy aging and care for older adults. A complete list of subcommittee members and lead consultants is provided in Appendix B.

1. Primary Care and Prevention Subcommittee Cochairs: Hector Flores, chair, Family Practice Department, White Memorial Medical Center (commissioner); and Rishi Manchanda, president, Health Begins (commissioner)
2. Behavioral Health Subcommittee Cochairs: Liz Gibboney, CEO, Partnership Health Plan (commissioner); and Sergio Aguilar-Gaxiola, director, UC Davis Center for Reducing Health Disparities (TAC)
3. **Healthy Aging and Care for Older Adults Subcommittee Cochairs:** Heather M. Young, professor and founding dean emerita, Betty Irene Moore School of Nursing at UC Davis (commissioner); and Christine Cassel, UCSF presidential chair, UCSF Department of Medicine (TAC)

**Additional Experts and Stakeholders**

Many other experts and stakeholders in California and from across the country provided input for the development of recommendations. Beginning with its second meeting, the Commission offered public comment periods during each meeting, and also invited public comments and questions through its website. In June 2018, the Commission distributed an online survey to its 1,500 newsletter subscribers and through organizations represented on the TAC and subcommittees to solicit feedback. Over 900 public responses were received and considered. A final set of 30 recommendations was developed by staff, independently assessed for impact, and ultimately endorsed by the Commission in January 2019.

**California Public Higher Education Health Professions Steering Committee**

The Commission was also assisted by the California Public Higher Education Health Professions Steering Committee, convened to address issues related to higher education. Leadership from the University of California Office of the President, the California State University Office of the Chancellor, and the California Community Colleges Chancellor’s Office came together to map existing health professions education programs and to explore opportunities for alignment. The resulting inventory of public higher education programs affecting the health workforce informed the Commission’s deliberations and is available on the Commission’s website.

The Commission’s meeting proceedings, source reports, and other materials are available on its website, [https://futurehealthworkforce.org](https://futurehealthworkforce.org).
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The California Future Health Workforce Commission, convened by major health philanthropies in 2017, was made up of experts in health care, community health, education, and health policymaking. Its charge was to create a comprehensive strategy with actionable recommendations — to be implemented between 2019 and 2030 — to close the significant and growing gap between the health workforce that exists in California today and the one that will be required in the near future. The Commission’s final report and 30 recommendations follow.
I. Impetus for the Commission

The health and well-being of Californians is compromised by both a significant health workforce shortage and a growing mismatch between population needs and available services. Of particular concern:

- Insufficient supply of health professionals and frontline workers, especially in primary care, prevention, behavioral health, and aging-related services
- Imbalanced geographic distribution, with too few health workers in rural areas and inner-city urban areas, and an oversupply of some types of workers in urban areas
- Limited cultural and language match between providers and populations
- Barriers to fully utilizing health workers and technological innovations

These workforce challenges have already created major health access, cost, quality, and outcome consequences for health providers, public and private payers, and millions of Californians. Demographic and other trends detailed in this report suggest that if these shortfalls are not urgently and effectively addressed, gaps between Californians’ demand for health and what is delivered will continue to widen.

Health workforce challenges can result in people going without needed care, including preventive services; delays in receiving appropriate care; financial burdens; and preventable hospitalizations. Although more Californians are covered than ever before, disparities in access to providers and utilization of services are pervasive — particularly for those with Medi-Cal and those lacking health insurance. Cultural and linguistic limitations create barriers to health for the state’s increasingly diverse population.

Projections of the state’s health workforce reveal significant challenges keeping pace with the current population’s needs. When anticipated population growth, aging, and increasing diversity are taken into account, the picture becomes even more dire. Over the next decade it is projected that California will have:

- 10% fewer primary care clinicians than the number needed to maintain current rates of utilization of primary care services
- 41% fewer psychiatrists and 11% fewer psychologists, marriage and family therapists, clinical counselors, and social workers than needed
- A shortage of 600,000 home care workers

Although promising technologies and team-based care may mitigate some of these shortages, utilization is expected to increase based on factors such as an increasing burden of chronic disease, aging, and efforts to expand treatment for mental illness and substance use disorders.

Perhaps the most significant increase in demand in the health workforce will be for frontline workers such as community health workers, home care workers, medical assistants, and peer support specialists who work at the intersection of health care services and a broader spectrum of support services and actions to improve living conditions in the home and the broader community context. Scaling the engagement of these workers and developing career ladders that offer opportunities for advancement, retention in the workforce, and a livable wage will be a critically important focus in the coming years. Expansion in these areas also creates significant opportunities to increase diversity of the workforce and economic vitality in communities where health inequities are concentrated.
In addition to a shortage of health workers, California’s workforce also faces a skills gap. The health care delivery system is moving toward value-based payment and care with an emphasis on prevention, population health improvement, and effective use of technologies. Health workers will need new skills and knowledge to provide optimal care in this landscape, yet many current training programs do not adequately prepare graduates to address these needs.

The public health workforce in California is chronically underfunded, and most local public health agencies lack personnel with expertise in key areas such as epidemiology and the essential skills to design, implement, and evaluate comprehensive approaches to community health improvement. The demand for new leaders will increase rapidly in the coming years, as a large percentage of current leaders is slated for retirement. Many local health departments report challenges in recruiting and retaining well-qualified workers, citing a lack of tools for recruiting, limited options for advancement, and instability of funded positions.

Although the consequences of the growing workforce challenges will fall most heavily on people in rural and inner-city areas, those with mental illness or addiction, those lacking English proficiency, those without health coverage, and the elderly, all Californians will likely be affected. Both professional and family caregivers, and institutions in every part of the health care system, will be increasingly overburdened as fewer try to do more. Providers, specifically, are already experiencing high rates of burnout and mental health issues, which can lead to further shortages and access challenges.

Responding to the urgency of the looming workforce crisis, several of California’s leading health philanthropies convened the California Future Health Workforce Commission to create a comprehensive strategy to move California to build a workforce that can meet the demand for health over the next decade. The philanthropies include Blue Shield of California Foundation, the California Health Care Foundation, the Gordon and Betty Moore Foundation, The California Endowment, and The California Wellness Foundation.

**Foundational Elements, Focus Areas, and Outcomes**

The work of the Commission was guided by three Foundational Elements, three Focus Areas, and directed toward building a future California health workforce with the right people, in the right places, with the right skills to promote and deliver health in all communities. The recommendations and strategies are designed to make meaningful progress in these areas and to develop a workforce that can advance six key outcomes for Californians: improved economic opportunity, health equity, better health and safety, better care, lower costs, and a healthy health workforce, as shown in Figure 1.

The three areas of focus and the rationale for selecting them are described in Section II: The Workforce Imperative. The three Foundational Elements: diversity, equity, and optimal use of technology are described below, along with the overarching guiding principle of shared ownership for successful implementation of the Commission’s strategies and recommendations.
Shared Ownership. Commissioners and stakeholders embraced an overarching commitment to shared ownership for increasing the health and well-being of all Californians. This commitment recognizes that health and well-being is impacted by a complex set of causal and contributing factors across the life course. Addressing such complexity demands that stakeholders in health and related sectors explore new ways to work together, build new competencies, and seek innovative solutions to persistent problems. Implementation of the strategies and recommendations in this report will require bold actions by policymakers to move in new directions and courage by institutional leaders to expand their vision, adjust priorities, and engage deeply with diverse stakeholders in communities. It will require significant public, private, and shared investment.

Diversity. California’s health workforce must better reflect the diversity of its communities with respect to race/ethnicity, gender, sexual orientation, and socioeconomic status. Racial and ethnic representation and language concordance are particularly acute needs. For example, while Latinos make up 39% of California’s population, they comprise only 7% of its physicians. African Americans represent 6.5% of the state’s population, but only 3% of its physicians. Similarly, a recent study found that 12 million Californians speak Spanish, Vietnamese, Filipino, and Thai/Lao at home, yet physicians speaking these languages are underrepresented in California’s current workforce. Research has demonstrated that patient-physician concordance of race, language, and social characteristics strengthen the patient-physician relationship through higher levels of trust and satisfaction during office visits and greater use of preventive services.

Equity. The Commission’s plan also seeks to ensure equitable opportunity in the health professions and equitable health outcomes for all Californians. To achieve equity of opportunity in the health professions, California must remove barriers and provide additional supports to people from low-income and minority backgrounds to achieve educational, economic, and health career goals and to lead change in their communities. Moreover, California must provide living wages, opportunities for
advancement, and meaningful career ladders for all workers. To achieve equity in health outcomes, California must address long-standing issues of geographic maldistribution of health care providers and must also develop a health workforce with the commitment, skills, and institutional support to work collaboratively within and across sectors to improve health equity for individuals and communities.

Technology. All health workers must have access to and be adept in the use of technology. The Commission highlighted two types of technologies of critical importance:

- **Virtual care technologies**, such as telehealth and remote monitoring, which have demonstrated the ability to increase access to specialty services in underserved and remote communities. Research shows they also improve communication between patients and their care teams, enhance patients' engagement in managing their own care remotely, and lower avoidable costs.\(^{14}\)

- **Data analytics capabilities**, which give organizations a better view into their workforce, services provided, and populations served. Such tools can provide a comprehensive picture of patient health status in the context of social determinants of health, and help organizations make more informed operational and clinical decisions.\(^{15}\) Broader adoption of these technologies could enhance capacity by helping health care organizations better deploy their workforce and more proactively respond to patient and population needs in collaboration with others in health and related sectors.

Economic Impact

Health care is a driver of California’s economy and represents 12.6% of the state’s GDP.\(^{16}\) Employment in the health care sector provides jobs for 1.4 million Californians.\(^{17}\) The US Bureau of Labor Statistics estimates that employment in health care nationally is projected to grow 18% between 2016 and 2026, and similar increases are expected in California.\(^{18}\)

Historically, jobs in the health care sector have provided economic security, with higher wages than many other sectors. In 2017 for example, the median wage for health care occupations was $64,770, compared to $37,600 for all occupations.\(^{19}\) Moreover, higher education, which is a requirement for many health professions, is itself a driver of economic mobility. A national study of lifetime earnings (over a 40-year career) provides a compelling picture: A person without a high school diploma or GED is expected to bring in less than $1 million, which translates into slightly more than $24,000 a year; an associate’s degree adds $750,000 in lifetime earnings, to $43,200 a year, while a bachelor’s degree brings annual earnings to $56,700, or $2.3 million over a lifetime.\(^{20}\) Average lifetime earnings for a master’s degree are $2.7 million ($66,800 a year) and for a professional degree are $3.6 million ($91,200 per year). People with higher incomes enjoy better health and are less likely to use safety-net programs.

The Commission recognized that expanding the health care sector is both an economic opportunity (more and higher-paying jobs) and an economic pressure (as health costs continue to escalate, outpacing inflation and crowding out spending on other essential social services). The Commission sought to identify specific areas in which additional investment is needed to prepare the health workforce of tomorrow, including high-touch, low-cost workers and technology, while taking into account economic impacts on both individuals and systems, as well as macro trends such as the transition to value-based payment.
II. Our Workforce: Critical to California

Primary Care

California is projected to have a shortage of 4,103 primary care clinicians in 2030.21 Primary care clinicians include physicians, nurse practitioners, and physician assistants. More primary care practices are implementing team-based, patient-centered care models in which clinicians work collaboratively with other team members, such as medical assistants, registered nurses, pharmacists, care coordinators, community health workers, and social workers.22 Well-implemented team-based care has the potential to improve the comprehensiveness, coordination, efficiency, effectiveness, and value of care, as well as the satisfaction of patients and providers.23 However, it requires sufficient supply of clinical and nonclinical team members and policies and practices that optimize each member’s contributions to meeting patient primary care and prevention needs.

Primary care teams are most commonly led by physicians. California is experiencing acute and growing primary care physician supply and distribution challenges. The Council on Graduate Medical Education (COGME), part of the US Department of Health and Human Services, studies physician workforce trends and makes recommendations on the number of physicians needed per capita. The number of primary care physicians per 100,000 Californians is 50, below the COGME-recommended supply of 60–80. The supply of specialists, at 84 per 100,000, is close to the recommended range (85–105), but several regions face shortages, as shown in Figure 2. For example, the Inland Empire’s primary care supply is approximately half the recommended level, at 35 primary care providers (PCPs) per 100,000 residents; San Joaquin Valley is only slightly higher, at 39. Specialist ratios for those two regions, at 64 and 65 per 100,000 residents, also fall well below the recommended level — and are approximately half that of the Greater Bay Area.24

Priority Professions

Based on the urgent workforce shortages and the demographic trends outlined in this section, the Commission selected the following Priority Professions as the central focus of its work:

- **Primary care**: primary care physicians, nurses, nurse practitioners (NPs), physician assistants (PAs), medical assistants (MAs)
- **Prevention and public health**: community health workers/promotores, community health educators, public health nurses, data analysts, health administrators, state and local health department staff (e.g., epidemiologists, public health nutritionists, infectious disease experts, disaster preparedness specialists)
- **Behavioral health**: psychiatrists, psychologists, psychiatric nurse practitioners, peer support specialists, primary care clinicians with pain management expertise, licensed clinical social workers, marriage and family therapists, licensed professional clinical counselors, substance use disorder and addiction counselors, college behavioral health counselors
- **Healthy aging and care for older adults**: geriatricians, nurses, geriatric nurse practitioners, home care workers, home health aides, social workers
Demographic projections show a worsening problem. By 2030, the state’s population will grow by 6 million, to 44 million, without a commensurate increase in primary care providers (see Figure 3). While the looming shortage of these providers will impact all Californians, the 7 million Californians who currently live in Health Professional Shortage Areas (HPSAs) will be hit hardest. Approximately 70% of those living in HPSAs are Latino, black, and Native American, raising serious concerns about the impact of California’s workforce shortage on health equity. HPSAs include some of the state’s largest and fastest-growing regions, such as South Los Angeles, San Joaquin Valley, and the Inland Empire. These areas face particular challenges providing primary care, behavioral health, and other health care services.

While physician workforce challenges must be addressed, it is critical that the state also has a sufficient supply and distribution of NPs and PAs. It is estimated that up to 75% of primary care services could be provided by NPs and PAs, and they are more likely to work in rural communities than are physicians. Estimates of NP demand are not available for California, but nationally, the demand for NPs is projected to grow and be among the 10 fastest-growing health jobs, in percentage terms, in the US economy over the next 10 years. While California is second only to the state of New York in total PAs, the state is 45th when it comes to the number of PAs per 100,000 residents.
Some areas are experiencing supply challenges with other members of the primary care team, such as medical assistants (MAs). In California, the number of MAs is expected to grow much faster than the average growth rate for all occupations. Jobs for MAs are expected to increase by 29.2%, or 24,800 jobs between 2016 and 2026.\(^\text{31}\)

In addition to population growth, current workforce shortages will be exacerbated by the aging and retirement of a significant portion of the provider population. Over one-third of California’s physicians and nurse practitioners are over age 55 and are expected to retire or reduce their work hours in the next decade.\(^\text{32}\) Already, many physicians are partially retired or engaged in non-patient-care activities, and less than half of California’s 139,000 physicians provide 20 or more hours of patient care per week.\(^\text{33}\)

Over one-third of California’s physicians and nurse practitioners are over age 55. Already, many physicians are partially retired or engaged in non-patient-care activities, and less than half of California’s 139,000 physicians provide 20 or more hours of patient care per week. Increasing the number of primary care physicians is necessary — but likely insufficient to address the primary care gap in California. To meet population needs, the state must optimize the contributions of other primary care clinicians, such as nurse practitioners, PAs, and other team members, such as community health workers, MAs, and home care workers. Prior research has found higher concentrations of PAs (along with NPs) in geographic areas with low ratios of physicians per capita, such as the Northern and Sierra regions of California, and these data underscore that finding. PAs are an effective means of addressing access-to-care issues for underserved areas.\(^\text{34}\) Researchers have found that health care organizations that employ more PAs and NPs and allow them to provide a full range of primary care services have lower costs, lower use of services and advanced diagnostic imaging, fewer emergency department visits, and fewer inpatient hospital stays.\(^\text{35}\)
Prevention

California’s public health workforce employed by state and local agencies plays a critically important role in preventing illness and improving health, but is faced with an array of challenges. At the state level, 61% of managers and supervisors, and 44% of nonsupervisory staff, are currently eligible for retirement. The California Department of Public Health estimates that two-thirds of its workforce will retire in the next five years. Both state and local public health agencies face increasing competition with the private sector, which provides higher pay and amenities such as updated technology. Local public health agencies have an increasing demand for skilled professionals in areas such as epidemiology to better design and monitor evidence-based interventions that optimize use of available resources. A 2005 study found that only 25% of local public health agencies employed people with epidemiological expertise, patterns of public sector funding since suggest that these percentages have not increased substantially. Many local health departments report challenges in recruiting and retaining well-qualified workers, citing a lack of tools for recruiting, limited options for advancement, and instability of funded positions. Moreover, approximately 95% of current funding for government public health is tied to categorical programs, leaving very few resources for the design, implementation, and evaluation of comprehensive strategies to improve health and well-being.

Behavioral Health

Nearly 17% of Californians have mental health needs, and 1 in 20 suffers from serious mental illness. In 2016, 14% of California adults were diagnosed with a mental illness. Two-thirds of California adults with a mental illness do not receive treatment.

Regional impact: Case Study on San Joaquin Valley (SJV)

The San Joaquin Valley, with more than four million people, is one of the poorest and least healthy regions of California. It has some of the worst air quality and highest rates of poverty and uninsured populations in the state and nation. Approximately 41% of the population is covered by Medi-Cal, and among California’s 58 counties, SJV counties Fresno, Kern, Madera, and Tulare rank as 52nd, 53rd, 49th, and 50th, respectively, for health outcomes. The region’s long-standing health care professional shortages contribute substantially to its poorer health outcomes. A June 2017 UCSF workforce assessment found that SJV has a significantly lower supply of physicians relative to other regions, with the per capita supply varying widely across SJV counties. Forecasts suggest that the SJV will also face a shortage of RNs.

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2 UC, Improving Health Care Access.
3 UC.
4 UC.
depressive disorder. About two-thirds of California adults with a mental illness and two-thirds of adolescents with major depressive episodes do not receive treatment. The opioid crisis and growing homelessness across the state will likely continue to create high demand for behavioral health services.

Emergency department (ED) visits related to mental health and substance use conditions are increasing, as are the percentage of those visits that result in inpatient admissions. Nationally, the rate of ED visits related to mental disorders (depression, anxiety, stress reactions, psychoses, and bipolar disorders) increased by over 50% between 2006 and 2013, and the rate of visits for substance use disorders grew by 30%. In California, ED visits resulting in an inpatient psychiatric admission increased by 30% between 2010 and 2015. Studies suggest that more timely access to outpatient treatment and specialized psychiatric crisis services could reduce the need for inpatient care.

There is significant maldistribution in the availability of behavioral health services. The Inland Empire and the San Joaquin Valley have the lowest provider-to-population ratios in the state for almost every category of behavioral health provider; in contrast, the Bay Area has over three times more psychiatrists than those two regions on a population basis. The Northern and Sierra regions had provider-to-population ratios for psychiatry and psychology professionals that were at least 40% lower than the state average.

Those regions also had the highest suicide rates in the state, at more than twice the state average. Every region, however, struggles to provide sufficient behavioral services capacity to meet the need.

The prevalence of serious mental illness varies by income, with much higher rates of mental illness at lower income levels for both children and adults. Increases in adults (48%) and children (17%) using Specialty Medi-Cal Services due to eligibility expansion between 2012 and 2015 have led to increased access to services. However, timely access remains a challenge; only 2 of California’s 56 county mental health plans met time- and network-access requirements in 2017.

These workforce projections related to behavioral health providers are cause for concern, as 45% of psychiatrists and 37% of psychologists are over age 60, and retirements over the next decade will worsen current shortages. Current and projected mental health provider shortages in California, and the fact that primary care is often the first point of contact for detection and treatment of mental health conditions, have created an urgent need to expand training of primary care providers (physicians, nurse practitioners, and physician assistants) to better meet mental health needs. Approximately 25% of all people seen in primary care have diagnosable mental disorders, and PCPs now provide over half of all mental health treatment in this country, yet with the exception of some family practice training programs, they receive limited formal psychiatric education or experience during their training, and the majority of PCPs feel underprepared and undertrained to manage the care of patients with mental illness.
Increasingly, health workers with less formal education and training, such as peer support specialists and community health workers, are playing expanded roles in behavioral health promotion and treatment. While these workers can have a significant positive impact on patient experience, outcomes, and satisfaction, it is important to ensure that they have the training, competencies and support needed to deliver quality services and that employers are educated and incented to fully engage them. Greater standardization of competencies, and certification of training programs and of the workers’ credentials, should be explored. Advancement in these areas could also facilitate expanded use of workers as part of behavioral health teams and better payment for both the employees and the employers.

There are also greater needs for behavioral health counselors on college and high school campuses, to address growing mental health disorder and substance use rates and to focus on promoting prevention, early intervention, and self-care. Over 2.7 million students attend colleges and universities in California. An estimated 18.5% of US college students have clinically significant depression, and 16.7% have one or more clinically significant anxiety disorders. These disorders increase the risk for academic disengagement, behavioral problems, and suicide. Suicide is the second leading cause of death among college students. Despite high prevalence of disorders, only 15%–20% of US college students with clinically significant depression or anxiety receive treatment. The treatment rate is even lower among students of color, many of whom face additional stressors of discrimination, immigration status, financial hardship, and being the first in their families to attend college. Many of California’s public campuses do not currently meet established standards for counselor-to-student ratios.

Healthy Aging and Care for Older Adults

California’s older adult population is growing rapidly. Over four million people will be added to the 65+ age group by 2030, an increase of 87% from 2012. In fact, by 2030 nearly 20% of Californians will be age 65 or older. Unlike previous generations, this cohort of older adults is more likely to be single or childless, live alone, and live in poverty. In the same period, the population of older adults facing self-care difficulties will double to approximately one million. Fifty percent of older adults will be widowed, divorced or separated, or never have married, and many families will be geographically dispersed across the country and the globe. More than half of Californians 65 and older rely on social security for 80% or more of their income.

National survey data indicate that 76% of older adults prefer to age in place rather than transition to institutional care. For older adults to age in place with dignity and respect, an engaged community and a fully integrated person-centered team (physical, behavioral, and social factors) is needed. The team includes geriatricians and other physicians, nurses, NPs, PAs, social workers, pharmacists, nutritionists, direct care workers, mental health providers, physical therapists, occupational therapists and speech therapists, and family caregivers. A critical component of this care team is the home care worker, who provides assistance with social, medical, and household activities without which many older adults would require institutional care. Given demographic trends, anticipated increases in demand, and the growing desire to age in place, it is estimated that an additional 600,000 home care workers will be needed by 2030.
About one-fourth of California’s 65+ population has multiple chronic conditions, which increases their risk of poor day-to-day functioning, premature death, hospitalization, and even receiving conflicting advice from different health care providers. Unfortunately, the current national supply of about 7,000 geriatricians is insufficient to meet that need. The American Geriatrics Society estimates the nation will need to train approximately 6,250 additional geriatricians by 2030. This number will be difficult to reach, given requirements for specialized training as well as low pay tied to Medicare reimbursement rates. Creative solutions are needed, both to increase the number of geriatricians and to provide specialized training to primary care providers to better manage care for a rapidly growing population of older adults. The roles and training of other care team members also need to be expanded and strengthened.

Today, less than 5% of the health professions workforce is certified in geriatrics. To meet the needs of older adults, widespread training and the adoption of existing competencies in geriatrics, palliative, and hospice care is needed for all health care professionals. It is critical that educational curricula at prehealth and health professions training incorporate geriatric-related competencies.

Improving working conditions, benefits, and payment for all workers who care for older adults will also be critical to meeting future workforce needs. Care for older adults is rewarding but can be physically and emotionally demanding, with a challenging schedule. At the same time, jobs — particularly for frontline workers caring for the most vulnerable populations — have low wages, limited benefits, challenging working conditions, and insufficient training that lead to high turnover rates. Meeting the future demand will require roles with greater opportunities for living wage compensation, career ladders, training, and advancement. This issue is also a matter of equity for workers and for the older adults and family caregivers they serve.

**Diversity in the Health Workforce**

Greater diversity among health professionals is associated with improved access to care for people who are racial and ethnic minorities, enhanced provider choice and patient satisfaction, better patient-provider communication, and better educational experiences for students while in training. In addition, it is well documented that physicians from minority backgrounds are more likely to practice in HPSAs and to care for minority, Medicaid, and uninsured people than their counterparts.

By 2030, communities of color will make up over 65% of California’s population, yet they are severely underrepresented in the health workforce and educational pipeline. Latinos are California’s largest single ethnic group and are projected to reach 41.5% of the population by 2030. The distribution of groups is presented in Figure 4. Given that these groups will make up the majority of California’s working-age population, action is needed to ensure that more of them become health professionals.

By 2030, communities of color will make up over 65% of California’s population, yet they are severely underrepresented in the health workforce and educational pipeline.
Language capabilities are also not aligned, with a large and growing portion of the public unable to effectively communicate with their caregivers. Some 7.3 million Californians have Limited English Proficiency and need access to multilingual providers, who are currently underrepresented in the workforce.\(^7^4\) Spanish is the most underrepresented language among health care providers, with only 62.1 Spanish-speaking physicians for every 100,000 Spanish-speaking-only people; by contrast, there are 344 English-only-speaking physicians for every 100,000 English-only-speaking people.\(^7^5\)

Increasing diversity of health professionals to better match current and future diversity of the population is a major challenge. In addition to Latinos, African Americans, and Native Americans being severely underrepresented in the physician workforce, there’s also a gap in diversity in other health professions compared to Californian’s population, as shown in Figure 4a.
In behavioral health, African Americans and Latinos are underrepresented among psychiatrists and psychologists relative to California’s population, and Latinos are also underrepresented among counselors and clinical social workers.

**Educational and Training Capacity**

A major challenge across all health professions is that education and training capacity is not aligned with projected demand. The statewide pipeline of caregivers — including physicians, nurses, and therapists — falls far short of the need, particularly in underserved, rural, and ethnically and linguistically diverse communities.

There is an urgent need to reinvest and retool education and training programs to produce more professionals with the right skills in the right places. Given the significant investment and lengthy time required to train many health care workers, commitments must be made 5–10 years in advance of need. New programs require still greater lead time and investment to navigate capital financing, campus approvals, accreditation, and other obstacles.

**Insufficient Capacity**

According to a report prepared by the Commission’s Higher Education Health Professions Steering Committee, California’s three public systems granted more than 42,000 degrees in health-related fields in 2017 through a wide variety of degree and certificate programs. The University of California (UC) alone operates the largest health sciences instructional program in the nation, enrolling more than 15,000 students annually. Nevertheless, California does not have the educational capacity to produce
enough health professionals to meet current and projected needs. Capacity challenges in California are particularly acute in medicine, where new physicians are insufficient to replace those who are retiring.\textsuperscript{79}

California’s medical school enrollment is the third-lowest in the nation (18.4 students per 100,000 population, in contrast to a median of 30.3 nationally).\textsuperscript{80} As a result, California students go to other states for medical school. In fact, over 60\% of Californians who attended medical school in 2017 did so out of state.\textsuperscript{81} California has relied on these students returning and on in-migration of professionals from other states and countries to meet workforce needs. However, the high and rising cost of living has made reliance on these sources more challenging in recent years. While underinvesting in California’s pipeline and allowing other states to educate California’s physicians has saved the state billions of dollars, it has contributed to an insufficient supply of professionals in medicine, behavioral health, public health, aging-related services, and other emerging professions.

Community colleges also face major capacity challenges to meet rising student demand in health care fields and accommodate all interested students, especially low-income students of color who rely on the community college system as an affordable pathway to access health careers.\textsuperscript{82} Due to the resource- and cost-intensive nature of health career training, and the fact that revenues per student are the same as students in less-intensive programs, community colleges can offer only a limited number of spots in programs and course offerings. Many students are unable to enroll in required courses, extending their graduation timeline and financial obligations.\textsuperscript{83} The new online community college being launched in 2019 offers the potential to increase access to skill-based health professions training and certification on a large scale to all Californians.

Nursing faculty shortages are causing capacity concerns at California State University and community colleges, which may have an impact on the future supply of nurses statewide and regionally.\textsuperscript{84} Of particular concern are regions like the San Joaquin Valley, Greater Bay Area, and Central Coast where there are not enough new graduates being produced to meet demand and openings from expected retirements.\textsuperscript{85}

**Rising Educational Costs**

One factor in the state’s reluctance to invest in health professions education is the high cost to deliver it. Health education and training programs require significant capital investment and ongoing costs in faculty, facilities, equipment, clinical placements, and other instructional expenses. Public system and campus investment in health programs and enrollment have not kept up with demand.

Insufficient campus investment — combined with significant state budget cuts in higher education — over the past decade have resulted in an increased program reliance on student tuition and fees. Such reliance has resulted in increases in the cost of health professions education and the level of student indebtedness. The average student debt among UC medical school graduates was $154,000 in 2015–16,\textsuperscript{86} and the average student debt among nursing graduates was $72,000 over the same time period. While levels of debt vary by discipline and school, these figures are representative of debt patterns for other health science professional programs. The Institute of Medicine noted that the costs associated
with health professions training pose a significant barrier for many underrepresented minority (URM) students, whose economic resources are lower, on average, than those of other students. In fact, only 3% of medical students nationwide come from families with incomes in the lowest 20%, according to the American Association of Medical Colleges; by comparison, 60% of medical students come from families with incomes in the top 20%. 

Cost has become the overriding factor for many low-income and URM students when deciding which health profession and subspecialty area to pursue and where to practice after graduating. Among students with more than $75,000 of debt, only 31% of URMs choose primary care fields, compared to 49% of students who are not URMs.

To attract a more diverse health care workforce, California policymakers should consider a range of options to make medical school more affordable. There is significant evidence that loan repayment is effective for recruiting practitioners into underserved and rural areas. Data from the Health Resources and Services Administration show that 48% of National Health Service Corps recipients remain in their practice after their obligation has been fulfilled. There is also evidence that many providers in these programs remain in underserved areas even after they leave the originating employer. The evidence on scholarships is mixed as to whether medical school debt and the prospect of relatively low pay discourage graduates from choosing primary care. One study found that students with high debt are less likely to pursue primary care, but the effect was modest when gender, race, and other demographic characteristics were taken into account. A recent analysis concluded that avoiding medical school debt confers substantial economic benefits, particularly for medical students who are intent on practicing primary care or in a lower-paying specialty, and recommended national service scholarships as an attractive option for students who aspire to become physicians but cannot afford a large education debt. Given the cost of health professions training and the magnitude of the projected shortage of clinicians, all promising pathways should be pursued.

High and rising costs of health professions education is also a barrier for students to pursue other priority health professions, particularly if they have concerns about their level of future compensation relative to the indebtedness they will incur. The high cost of health professions education may deter some Californians, particularly from lower socioeconomic backgrounds or with high undergraduate debt from pursuing education and careers in public health, behavioral health, and care for older adults due to the levels of expected compensation. It is an even greater barrier for graduates who want to work in the public, nonprofit, or safety-net health sectors. There is also a growing trend of more PA graduates choosing employment in specialty practices rather than primary care due to the cost of PA school relative to the level of compensation and the lifestyle involved in primary care.

**Limited Postgraduate Training Opportunities**

California has also historically underfunded residency positions in medicine and other professions. The problem is particularly acute in primary care. California ranks 32nd in the nation at 9.5 primary care residents per 100,000 population; in contrast, New York ranked first, at 31.3. From 1997 to 2012 the annual number of physicians graduating from primary care residencies in California has steadily declined. California will need to graduate an estimated 510 additional primary care residents per year from 2025 to 2030, an increase of 30%, to alleviate current and projected shortages (Appendix A, Recommendation 2.2, includes a summary of how estimates were derived).
The main reason that primary care residency programs in California are not growing to meet the demand for more primary care physicians is lack of funding. Residency positions at California institutions are highly subsidized, and funding derives from the federal government, the state government, and private sources. Although most primary care is delivered in ambulatory care settings, the vast majority of primary care residency training nationwide occurs in hospital-based settings, because federal funds are primarily allocated through hospitals.

Case Study: Lessons from Nursing

One area in which California has been more strategic about investment in educational capacity to meet target demand is nursing. California has 330,000 actively licensed registered nurses (RNs), making nursing the single largest health profession in the state.*

In response to a severe and growing nursing shortage, nursing education and industry leaders worked with Governor Schwarzenegger’s administration and the legislature to invest in and implement the California Nurse Education Initiative. Launched in 2005, the effort resulted in a 78% increase in RN program enrollment and a 71% increase in RN graduates from California nursing schools over a five-year period.† The initiative achieved its goal of producing 10,900 additional RN graduates by 2010, which significantly reduced shortages and established sufficient educational capacity to meet ongoing demand.‡

Commitments were also made to enable careful tracking and reporting on the training of nurses relative to demand. National and state nurse leaders have continued to monitor demand and proactively make recommendations about the future of nursing, which have been incorporated into nursing education. While industry changes have led to the need for more baccalaureate-trained nurses, and the aging of the nursing workforce will pose challenges, nursing supply is better aligned with industry demand than many other areas of the health professions. Lessons from nursing could be applied to other professions.

‡State of California, *California Nurse Education*.

A significant need exists to expand primary care residency training to ambulatory settings in rural and inner-city areas, but in the absence of federal or state subsidies, and given that these facilities operate with limited resources, current opportunities are limited. The launch of the Teaching Health Center Graduate Medical Education (THCGME) program in 2011 by the Health Resources and Services Administration has produced some results, currently with 57 programs in 24 states and a total of 732 residents (for an average of 12.8 residents per program).§ There are six Federally Qualified Health Center (FQHC) sites in California, including three in the Central Valley (San Joaquin, Modesto, and Bakersfield), two in Southern California (San Diego and San Bernardino), and one in Northern California (Shasta). While this program is much needed, the practical reality is that FQHCs are faced with an extremely difficult trade-off: In order to provide a positive learning experience for trainees, they must call upon their already overextended primary care providers to take time away from patient care for teaching. Additional targeted resources are needed to alleviate this tension and ensure that FQHCs are
able to provide the necessary training and exposure to trainees that will commit to serve these populations in the future.

The THCGME program offers significant potential as a partial solution for FQHCs and other safety-net providers in ambulatory care settings in the recruitment of the next generation of primary care and specialty providers; however, there is limited data to quantify impact to date, and anecdotal evidence suggests even THCGME programs have difficulty competing with mainstream health care provider organizations for staff, including physicians, NPs, PAs, MAs, and others.

Taken together, these factors — the size and composition of the current health workforce, the demographic trends underway, and the limited educational capacity available — amount to nothing short of a crisis for the state’s health care industry and for all Californians. The Commission determined that solutions would need to be far-ranging and aggressive to meet current and future needs; those solutions are described in Section IV. Before turning to solutions, however, the Commission identified several “essential conditions” — factors that are outside the Commission’s scope, but that must be in place for the proposed solutions to have maximum impact.
III. Essential Conditions for Success

Although the Commission focused its work on identifying workforce solutions, it pointed to six “essential conditions” for achievement of the objectives associated with implementation of its recommendations:

1. Adequate Medi-Cal payment rates
2. Practice transformation
3. Acceleration of value-based payment
4. Increased investment in primary prevention to address the social determinants of health
5. Increased access to technology in low-income communities
6. Effective preparation of K–16 students

Medi-Cal Payment Rates

Over 13 million Californians — almost a third of the state — rely on Medi-Cal for their health care, including over half of California’s 9.1 million children. Given the scale of the program, it is essential that rates paid to providers caring for Medi-Cal members support access to care; Medi-Cal cannot rely on cross-subsidization from Medicare or commercial payers to cover shortfalls in provider payment rates. Indeed, by law, Medi-Cal payments to providers must be adequate to ensure that enrollees’ access to care is equal to that of other insured populations. Rates should be adequate to ensure that members receive timely, high-quality, culturally competent care in their own language; to connect members to resources that meet related needs, such as housing and transportation; and to invest in new technologies, the health workforce, and innovative approaches to delivering care that improve access, quality, and affordability.

State-level data on Medicaid rates, available from the Kaiser Family Foundation, reveal that for many years California has ranked near the bottom when compared to all states. In FY 2016 (the most recent year available), Medi-Cal fee-for-service rates were, on average, 52% of Medicare rates and 76% of the national Medicaid average. By both measures, California ranks 48th out of 50 states. Over 80% of Medi-Cal enrollees, however, are enrolled in managed care plans, where rates paid to providers are proprietary and often capitated, making comparisons across payers or with other states difficult. Moreover, 41% of Medi-Cal enrollees receive their primary care from Federally Qualified Health Centers, which are reimbursed at higher levels for all-inclusive care. Greater transparency is needed to fairly compare costs, prices, and rates.

Comparing spending per full-benefit Medicaid enrollees across states for FY 2014 (the most recent available) reveals that California spending relative to other states differs by population. For people with disabilities, Medi-Cal spending per full-benefit enrollee was 109% of the national average; for children, Medi-Cal spending was 96% of the national average; for adults, Medi-Cal spending was 68% of the national average; and for older adults, Medi-Cal spending was 63% of the national average. It should be noted that lower spending is not inherently bad; it could signal efficiency rather than inadequacy, such as the substitution of lower-cost community-based long-term care services and supports in lieu of nursing home care.

Total spending on the Medi-Cal program is staggering — $83 billion in FY 2016; over one-third of California’s budget was spent on Medi-Cal in FY 2015. In November 2016, California voters enacted Proposition 56, which increased the tax on tobacco products and dedicated a portion of the revenues to
improve Medi-Cal access. The 2018–19 budget included $961 million from Proposition 56 revenues to supplement Medi-Cal rates.

Medi-Cal rates should be sufficient to allow for the delivery of high-quality, timely services to members and to support the long-term needs of California’s health workforce, yet that is not always the case. Medi-Cal enrollees are more likely than other insured Californians to have difficulty finding a primary care provider or specialist to care for them. The challenges are greater for certain groups, such as Medi-Cal enrollees in poor health and those with physical limitations. These individuals rely heavily on emergency rooms and are often hospitalized. Moreover, some providers encounter serious reimbursement challenges in serving Medi-Cal beneficiaries. Safety-net providers, including health centers, public hospitals, county mental health providers, and private practice physician groups in underserved communities experience hardships from low reimbursement rates. California ranks 48th nationally in fee-for-service payments to physicians to treat Medi-Cal patients and 49th in the level of primary care reimbursement (20% of Medi-Cal patients are fee-for-service). Both nationally and in California, physicians are less likely to accept people on Medicaid than they are to accept commercially insured people — and the differential is much larger in California: Nationally, 69% of physicians accept new Medicaid enrollees, while in California the rate is only 54%. Targeted strategies to address payment and other financial and administrative barriers to primary care, behavioral health, and other providers accepting and providing timely access to Medi-Cal patients need to be developed along with efforts to recruit and retain the future provider workforce.

The Importance of Medicaid Funding

Medicaid plays an important role in providing access to behavioral health care and paid for 25% of all mental health services in 2014. Nearly half of all Medicaid spending is for enrollees with behavioral health conditions. Medicaid is also the primary payer for long-term services and supports (LTSS) and nursing facility care and home and community-based services (HCBS) for older adults, representing 40% of $357 billion in spending in 2011.

Practice Transformation

Over the past decade, practice transformation efforts have been a major focus nationally and in California. “Practice transformation” is a process by which health care organizations continuously optimize their operations to improve care for individuals and families, and make the delivery of care more rewarding for providers and other health care workers. In primary care, this starts with expanding access to include same-day, after-hours, and virtual interactions. It means conducting proactive outreach to patients who are overdue for preventive or chronic care; partnering with them to
understand their needs and goals; and serving as an advocate for them along the continuum of care, selecting the right specialists, and coordinating care and transitions for patients with higher needs. This deeper, broader approach is only feasible with team-based care, in which clinicians and frontline workers such as medical assistants and community health workers share responsibility for patient care and the design and implementation of health improvement strategies. This model requires new leadership capabilities for clinicians and administrators, supported by health information technology that provides care teams with timely, actionable data for improvement. When effectively implemented, primary care practice transformation can build the capacity of health care organizations to promote population health, improving outcomes and affordability.103

In California, initiatives led by the California Quality Collaborative,104 the California Safety Net Institute,105 the Center for Care Innovations,106 the Center for Excellence in Primary Care at UCSF,107 and others are providing tools, training, and technical assistance to help health care organizations build their quality-improvement infrastructure and adopt other elements of transformation. They also measure and evaluate results and promote best practices to support and spur progress. Nationally, and in California, such efforts have proven that improvements in quality, cost, and utilization are possible, and there is an opportunity to bring the most effective processes, principles, and cultures to scale.108

Expanding proven practice transformation efforts could facilitate the Commission’s strategies and recommendations by improving the environments in which providers and teams work, thereby preventing burnout and promoting retention.

**Value-Based Payment**

Acceleration of value-based payment (VBP) is essential to achieve the goals and objectives outlined in this report, including increased investment in primary care, prevention, behavioral health, and population health. Value-based payment models, also known as alternative payment methodologies (APMs), link provider payments to improved performance. These models, which hold health care organizations accountable for both the cost and quality of care they provide, aim to reduce inappropriate care, to move care from expensive settings to cost-effective locations and the patient’s home, and to identify and reward high-performing providers.

The Centers for Medicare & Medicaid Services (CMS) reported in 2016 that Medicare had linked 30% of traditional fee-for-service payments to value-based purchasing models.109 According to the Health Care Payment Learning and Action Network, by 2017, approximately 34% of payments nationally were under APM arrangements.110 In California, many Medi-Cal managed care plans have implemented value-based payment programs — most commonly pay-for-performance (P4P) programs, which offer financial incentives to health care providers that improve their performance on predetermined measures or meet care quality and efficiency targets. However, no statewide program exists.111 Although progress is being made, the pace of change must accelerate to optimally support the recommendations in this report. Such acceleration will require state leadership, particularly in the determination of meaningful process and outcome measures.

While movement toward VBP slowed during the short tenure of Health and Human Services Secretary Price, it appears to be a top priority for the current HHS secretary Azar, and CMS is moving to expand accountable care organization (ACO) contracts that include downside risk.112 Both Medicare and Medicaid serve as key levers in the movement to VBP; in the first quarter of 2018, Medicare contracts accounted for 37% of ACO covered lives in the US, representing over 12 million older adults.113
Primary Prevention

Social, economic, and environmental conditions such as housing, income, food security, safety, and educational opportunities directly impact the health status of communities and the demand for health care services. Greater investment in strategies to address these social, economic, and environmental conditions are essential, particularly affordable housing and food security.

Housing. California has an acute shortage of affordable housing. In the last five years, the state’s homeless population increased 54%.\(^{114}\) As of January 2017, 24% of the nation’s homeless people (134,000 out of 554,000) resided in California, double the national per capita level.\(^{115}\) It is estimated that California needs 1.5 million additional units of rental housing to help people with severe housing pressures.\(^{116}\) Despite great need, affordable housing finance in California has declined 64% since 2008.\(^{117}\) Homeless people, many of whom have unmet behavioral health needs, are frequent users of emergency services. Evidence demonstrates that supportive housing interventions reduce ED, mental health services, paramedics, and overall health care costs.\(^{118}\)

Food Insecurity. Fifteen million US households (11.8%) were without reliable access to a sufficient quantity of affordable, nutritious food at some point in 2017.\(^{119}\) The prevalence of food insecurity in California was 11.2% in 2015–17.\(^{120}\) Among adults, food insecurity is associated with poor or fair health status, worse outcomes on health exams, diabetes, hypertension, hyperlipidemia, decreased nutrient intake, poor sleep, and higher rates of depression and other mental health problems.\(^{121}\) A recent study found an association between food insecurity and health care use, with food insecurity leading to a significant increase in ED visits, hospitalizations, and days in the hospital.\(^{122}\) Estimated US health care costs for food insecurity in 2015 were $77.7–$160 billion; corresponding costs in California were estimated at $8.35–$17.19 billion.\(^{123}\)

Poverty and Cost of Living. The most significant driver of poor health in the primary prevention arena is significant and growing inequity in income in the US. Based on the official federal poverty level (FPL), 14.3% of Californians could not meet basic needs in 2016 (representing an annual salary of $24,300 for a family of four). Using the California Poverty Measure (CPM),\(^ {124}\) which takes into consideration a higher cost of living ($7,000 more than the federal poverty measure), the percentage increases to 19.4%, or 7.4 million people.\(^ {125}\) Another 18.9% of Californians live between 100% and 150% of the CPM, yielding a total of 38.2% of our population who are poor or near poor. Los Angeles has the highest rates, with 24.3% of the population living under the CPM. The toxic stress experienced by people who struggle on a monthly basis to pay for housing and other basic needs, referred to in the literature as allostatic load,\(^ {126}\) has a measurable impact in areas such as glucose tolerance and cardiovascular function.\(^ {127}\)

Access to Technology. Several of the Commission’s recommendations address technology. While the technology gap is closing, both providers and low-income residents in rural and inner-city communities lack sufficient access to broadband, computers, and mobile apps. There is a need for robust partnerships between the state, local municipalities, hospitals and health plans, technology companies, and other corporate interests to make targeted investments to build technological capacity in low-income communities and the provider organizations that serve them.
Academic Preparation

The Commission’s recommendations assume that children and young adults — those in grades kindergarten through college, or “K–16” — have access to adequate preparation for success in the health professions. California’s state agencies, school districts, and primary and secondary educational institutions should consider the needs of future health professions students when designing curricula and determining educational priorities, particularly those in science, technology, engineering, and math.

There is growing recognition that academic preparation must begin at the pre-K level, and California is among the leading states across the country in providing access. At the same time, there is substantial room for improvement. At the state level, 65% of 4-year-olds attended a pre-K program in 2016, and 69% of those were eligible for public subsidies. Just as access to health care varies widely across the state, the same applies in terms of pre-K access. In Santa Clara County, 77% of 4-year-olds accessed pre-K programs in 2016, while the percentage was 42% in Tulare County.

At the K–12 level, Californians contend with an inequitable distribution of public education resources, and like other states, public schools have become highly segregated both by class and race/ethnicity. Inequities in public funding are compounded by unrealistic expectations in economically distressed communities that parents will subsidize functions (e.g., academic supplies, sports programs, etc.). Students who graduate from these schools often lack sufficient math, language, and related academic skills necessary to succeed in undergraduate higher education programs. The net result for those who manage to enter programs in the California Community College system is often a failure to complete their degree. While students of color make up a majority of students in community colleges, and Latino students representing 40% of the total, only 22% of Latino students complete their degree.

California must advance collaboration and data systems to improve student preparation, achievement, and health career readiness and opportunities. Given their separate sources of funding, governance, and accountability for outcomes, K–12 and public higher education systems in California focus primarily on the success of their own students rather than collaboration to ensure student readiness, progression, and achievement across levels. Enhanced collaboration between K–12 public school districts and higher education, as well as between education institutions, workforce groups, and community organizations, has the potential to improve college and labor market outcomes for individual students and for local communities. Continued expansion of intersegmental partnerships, supported by documented best practices, and longitudinal data systems — linked across pre-K through postsecondary sectors — statewide and regionally are needed to track people’s education and labor market outcomes and to effectively use data to improve student outcomes. Increased partnerships and support at each educational level is needed to provide students with exposure, experience, academic support, and mentorship to successfully pursue health careers. Support should start in K–12 and continue through and after college into health professions school. California is home to many health academies and health pipeline programs that provide health career exposure and preparation support for students of K–16 age; however, their scale, sustainability, and impact have been insufficient to meet statewide and regional health workforce and diversity needs. Additional investment and support is needed to strengthen these programs and provide opportunity for more Californians to pursue health careers.

Addressing each of these essential conditions in the larger policy and practice environment will be critically important to support the implementation of the recommendations in this report.
IV. The Commission’s Vision and Recommendations

To successfully promote health and deliver care in the future, California must find ways to recruit, educate, and sustain a diverse health workforce that is distributed across regions and specialties according to population needs. Further, the workforce must be skilled in working collaboratively in interdisciplinary teams, technically competent, and adept at using modern health information technology. And it must be knowledgeable about social factors that impact health and about effective prevention strategies.

To accomplish its vision, the Commission put forward three complementary strategies, along with 30 actionable recommendations to operationalize them. Figure 5 displays how these strategies work.
together to achieve the Commission’s vision. The recommendations include both short-term and long-term solutions, efforts to understand the current landscape and chart the future, efforts to scale successful programs, and changes to both policy and business practices. They target a wide range of potential workers, including students, retired workers, older adults, and employers, and a variety of education and training institutions. The strategies and recommendations are intended to build upon, integrate with, and better align existing statewide, regional, local, and institutional health workforce and health pathway initiatives, policies, and resource allocations.

The three strategies are:

**Strategy 1** Increase opportunity for all Californians to advance in the health professions.

**Strategy 2** Align and expand education and training to prepare health workers to meet California’s health needs.

**Strategy 3** Strengthen the capacity, effectiveness, well-being, and retention of the health workforce.

Strategy 1 will result in an expanded, more qualified, and diverse pool of candidates from California communities with greater motivation, support, incentives, and opportunity to successfully pursue careers in primary care, behavioral health, and care for older adults and service in underserved communities.

Strategy 2 will ensure that health professions training programs in California provide access to and graduate enough qualified, diverse candidates with the skills and experience to meet health and workforce needs in all communities.

Strategy 3 will provide incentives, training, tools, and innovations to increase the capacity and optimize the roles of the current and future health workforce within emerging health models.

The approaches, recommendations, and intended outcomes for each strategy are summarized in the following section. Detailed recommendations and their projected impact are described in Appendix A. These mutually reinforcing strategies, and the recommendations that operationalize them, align to advance the approaches identified by commissioners, subcommittees, and TAC members as critical to building a health workforce capable of meeting the current and future health needs of Californians. Table 1 shows the key factors addressed by each strategy.

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<th>Table 1. Key Factors Addressed by Each Strategy</th>
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<td><strong>Strategy 1</strong> Increase opportunity for all Californians to advance in the health professions.</td>
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Strategy 1: Increase Opportunity for All Californians to Advance in the Health Professions

This strategy aims at inspiring and preparing people for health professions training and employment, particularly Californians from low-income, first-generation, underrepresented backgrounds, and from underserved communities. It expands health pipeline programs and promotes greater intersegmental collaboration to strengthen academic preparation, health career exposure, and mentorship from K–12 through college into health professions schools to enhance student hope, opportunity, and success. It leverages and expands regional and statewide health networks. It aims to increase the number of qualified, diverse, and bilingual Californians who complete college education and are competitive candidates for health professions schools. It also recommends special focus on those who are fluent in a “threshold language” as defined by Medi-Cal,135 and those who are willing to serve in Health Professional Shortage Areas.

Four approaches were pursued in the nine Strategy 1 recommendations, as outlined in the table below.
Table 2. Strategy 1 Approaches, Recommendations, and Intended Outcomes

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<th>Approach</th>
<th>Recommendations</th>
<th>Intended Outcome</th>
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<tr>
<td>Expand career awareness and assessment</td>
<td>1.1 Expand pipeline programs</td>
<td>Larger and more diverse pool of motivated candidates for health careers, particularly priority professions and those in underserved regions.</td>
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<td></td>
<td>1.2 URM college student support</td>
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<td>1.7 California Health Corps</td>
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<td>1.8 College student mental health</td>
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<td></td>
<td>1.9 K–12 and mental health</td>
<td></td>
</tr>
<tr>
<td>Support academic preparation and entry</td>
<td>1.1 Expand pipeline programs</td>
<td>A larger, more qualified, and more diverse candidate pool who gain entry to California health professions schools.</td>
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<tr>
<td></td>
<td>1.2 URM college student support</td>
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<td>1.4 Postbaccalaureate</td>
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<td>1.7 California Health Corps</td>
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<td></td>
<td>1.8 College student mental health</td>
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<tr>
<td>Make health professions education and training financially and logistically feasible</td>
<td>1.3 Scholarship program</td>
<td>Increased number and diversity of California students completing health professions education in primary care, public health, behavioral health, and aging.</td>
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<td></td>
<td>1.5 Financial support for behavioral health</td>
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<tr>
<td>Provide incentives and support systems for practice in underserved communities</td>
<td>1.3 Scholarship program</td>
<td>Increased number and diversity of providers practicing in primary care, public health, behavioral health, and aging in underserved communities and safety-net settings.</td>
</tr>
<tr>
<td></td>
<td>1.5 Financial support for behavioral health</td>
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<td></td>
<td>1.6 Primary care loan repayment</td>
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A brief summary of each Strategy 1 recommendation is provided below. The full text of the recommendations and an independent assessment of their potential impact are available in Appendix A.

1.1 Expand and scale pipeline programs to recruit and prepare students from underrepresented and low-income backgrounds for health careers.

Implement a four-component strategy to support model health pipeline programs, including efforts to build capacity through a business plan boot camp; sustain and scale programs with proven track records; establish a center of excellence for pipeline programs to disseminate, scale, and replicate best practices; and support the California Health Professions Consortium to sustain and grow a statewide pipeline network.

1.2 Recruit and support college students from underrepresented regions and backgrounds to pursue health careers.

The recommendation is to fund and establish a California Health Career Opportunity Program and associated HCOP partnerships, which will support more than 9,600 prehealth college students annually at institutions across California, providing comprehensive academic enrichment, career development, mentorship, and advising. Students from Health Professional Shortage Areas, low-income and first-generation backgrounds, and groups underrepresented in the health professions will be targeted for inclusion.
1.3 Support scholarships for qualified students who pursue priority health professions and serve in underserved communities.

The proposed action — to develop and implement a new Emerging California Health Leaders Scholarship Program (ECHLSP) — would cover full tuition for 10% of students enrolled in eligible California health professions programs (more than 1,000 students per year at current enrollment levels) to enable more Californians to pursue degrees in high-need health professions and practice in underserved communities. Scholarships would be available to low-income, first-generation, and underrepresented students pursuing MD, nurse practitioner (NP), RN, physician assistant (PA), MPH, and MSW degrees in return for a three-year service commitment after graduation. A subset of recipients would also receive support to prepare for graduate programs.

Meeting the Demand for Health: Link to Let’s Get Healthy

Strategies and recommendations aligned with the Commission’s vision, priority areas of focus, foundational elements and outcomes are intended to build a future health workforce capable of meeting the demand for health in California. Meeting the demand for health in California requires a health workforce capable of advancing the triple aim: enhancing patient experience, improving population health outcomes, and reducing costs. Given growing problems with burnout in the health field, the Commission also sought to improve the work life and health of health providers and staff, also known as the quadruple aim.*

In 2012, the Let’s Get Healthy California Taskforce developed a 10-year plan to make California the healthiest state in the nation by advancing the triple aim through meeting health indicators in six goal areas across the lifespan of Californians: healthy beginnings, living well, end of life, redesigning the health system, building healthy communities, and lowering cost of care. The Commission’s strategies and recommendations will build a health workforce capable of meeting the demand for health in these goal areas and others that emerge to meet California’s health needs while also improving the work life of health workers.


1.4 Increase postbaccalaureate program slots for students reapplying to medical school from underserved communities.

This recommendation proposes that from 2021 to 2030, an additional 100 postbaccalaureate slots per year would be funded for qualified California students from disadvantaged backgrounds, designated shortage areas, and underserved communities who applied to medical school previously but were not admitted. Priority would also be given to students with demonstrated interest in the Commission’s three priority areas — primary care, behavioral health, and aging. Scholarships would be provided to cover 100% of tuition charged by postbaccalaureate programs.

1.5 Expand funding for educational capacity, residencies, stipends, and scholarships to strengthen the size, distribution, and diversity of the behavioral health workforce.

Increase and make permanent the level of funding available for investment in behavioral health scholarships, stipends, residencies, and educational capacity. This initiative includes three areas of activity: (1) increase support for loan forgiveness, stipend programs, and residencies for
psychiatrists, clinical psychologists, marriage and family therapists, and licensed professional
clinical counselors, and add eligibility for substance abuse counselors; (2) expand education and
training capacity in social work and other professions currently turning away qualified, diverse
applicants; and (3) fund scholarships for bilingual candidates.

1.6 Expand and strengthen loan-repayment programs for primary care clinicians practicing in safety-
net settings and underserved communities.
This recommendation proposes a three-part strategy: (1) conduct an assessment to identify ways
to address structural issues with current loan-repayment programs (LRPs) — for example, simplify
applications, reduce matching requirements, increase annual awards, expand the pool of LRP-
eligible professionals; (2) increase funding for current and new LRPs tied to achieving targeted
staffing levels; and (3) pilot efforts to promote LRPs and to market safety-net job opportunities to
program participants in three high-need regions.

1.7 Create California Health Corps to engage students, health workers, and retirees in addressing
health workforce gaps.
This recommendation seeks to create a California Health Corps to identify and recruit talent from
California’s communities, encouraging them to pursue health career and service opportunities on
a massive scale. Planned activities include social media and community-level campaigns
encouraging Californians to pursue health careers in their communities; an online educational
platform to connect and prepare corps members for jobs, service learning, and health training
opportunities; efforts to mobilize employers, health professionals, and educators to support corps
members and prepare them for relevant careers; track and engage students to encourage
employment in California; and related activities to promote participation.

1.8 Assess, treat, and improve college student mental health and promote behavioral health
careers.
Through a three-year pilot, this recommendation aims to (1) implement and evaluate ICare, an
evidence-based, guided, internet-based cognitive behavioral therapy (iCBT) intervention adapted
specifically for college students and designed to treat depression and anxiety across diverse
populations, (2) launch a program to expose students on the same campuses to behavioral health
careers, and (3) implement a policy change to require colleges and universities to meet minimum
staffing ratios of students to mental health counselors.

1.9 Implement a statewide prevention and early intervention mental health and workforce
development model for K–12 students.
This recommendation seeks to fund a five-year initiative (three-year pilot and evaluation) of the
California Health Occupations Students of America and Prevention and Early Intervention (Cal-
HOSA PEI) Mental Health and Workforce Development Model. A consortium of 30 schools would
adopt this framework to train educators and students in identifying and addressing social
determinants and other risk factors associated with behavioral health issues. To encourage youth
interest in the mental health field, this project would train 150 teachers and 300 Cal-HOSA youth
leaders in mental health first aid and to serve as behavioral health advocates.
**Strategy 2: Align and Expand Education and Training to Prepare Health Workers to Meet California's Health Needs**

This strategy would better align and expand the education pathways that generate the health workforce by addressing barriers and enhancing motivation to practice in professions and regions prioritized by the Commission. It aims to increase the number of qualified, diverse, and bilingual Californians who would be admitted to and complete health professions training in California.

Six approaches were pursued in the 10 recommendations for Strategy 2, as outlined in the table below. Each will require significant changes in higher education pedagogy, including changes to curricula (e.g., content on social factors that impact health), instructional modality (e.g., online learning, interdisciplinary training opportunities, team-based care, and core competencies required for future practice), and faculty.

**Table 3. Strategy 2 Approaches, Recommendations, and Intended Outcomes**

<table>
<thead>
<tr>
<th>Approach</th>
<th>Recommendations</th>
<th>Intended Outcome</th>
</tr>
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</table>
| Expand educational capacity, emphasizing primary care and regions with significant shortages | 2.1 PRIME  
2.2 Primary care residencies  
2.4 Three-year medical school  
2.5 Charles R. Drew University  
2.6 UC Riverside  
2.7 UCSF Fresno branch campus | A sufficient number of health professionals practicing in the regions with highest unmet need. |
| Accelerate training and deployment of health professionals in priority professions and regions | 2.3 Hometown program  
2.4 Three-year medical school  
2.10 Community colleges | Faster, less costly production of health professionals. |
| Recruit, select, and support students with characteristics and capabilities needed in the health workforce | 2.1 PRIME  
2.3 Hometown program  
2.4 Three-year medical school  
2.5 Charles R. Drew University  
2.6 UC Riverside  
2.7 UCSF Fresno branch campus | Increased racial, ethnic, and geographic diversity and language capabilities. More providers in primary care/prevention, behavioral health, and aging. |
| Prepare students with essential skills necessary for optimal care (e.g., social determinants of health) | 2.1 PRIME  
2.5 Charles R. Drew University  
2.8 Public health schools and health departments  
2.9 Social determinants of health  
2.10 Community colleges | Graduates prepared for effectiveness. |
| Expand online learning | 2.4 Three-year medical school  
2.10 Community colleges | Increased access to degree and certificate training for all Californians. Preparation for entry into priority health professions. |
| Increase the number of primary care residencies, particularly in outpatient settings and underserved communities | 2.2 Primary care residencies | Increased number of primary care providers, particularly in safety-net settings and underserved communities. |
The Strategy 2 recommendations are briefly summarized below. The full text of the recommendations and an independent assessment of impact are available in Appendix A.

2.1 **Sustain and expand the PRIME program across UC campuses.**
This recommendation calls for permanent dedicated state funding to enable UC Programs in Medical Education (PRIME) to enroll the number of medical students originally planned (393) and eliminate the need for UC medical schools to use their own funds to support PRIME students. Each of the six PRIME programs aims to train physicians committed to practicing in the state’s underserved communities. Currently, state funds support only 126 of the 354 medical students enrolled in UC PRIME programs.

2.2 **Expand the number of primary care physician residency positions by 20%.**
This recommendation calls for both the expansion of primary care residency programs and the establishment of new primary care residency programs. Start-up funds would also be awarded to sponsoring institutions, including universities, hospitals, and clinics that have not previously operated residency programs. Funds would also be used to provide ongoing support for residency training in facilities that are not eligible to obtain Medicare funding for graduate medical education (i.e., residency training).

2.3 **Recruit and train students from rural areas to practice in community health centers in their home region.**
This recommendation would develop a Hometown Scholars Program in health professions schools at the University of California and other universities in California that would consist of (1) a program under which leaders of community health centers nominate highly qualified students to medical, nursing, NP, and PA programs; (2) establish new community medicine tracks at California medical schools modeled after the UC PRIME program; (3) provide scholarships to students who agree to practice as primary care physicians, psychiatrists, or geriatricians; and (4) establish a Safety-Net Professionals Workforce Institute that would create more clinical placements and residencies for health professions students in participating community health centers by reducing the administrative burden associated with training health professionals in community health centers.

2.4 **Expand and scale three-year medical school programs to prepare primary care and behavioral health physicians for work in underserved areas.**
This recommendation would (1) expand the existing three-year MD program at UC Davis from 6 to 30 first-year students per year, (2) provide full-tuition scholarships to graduates of the UC Davis program who agree to practice in underserved areas, (3) establish two three-year medical school programs in rural areas of California that would enroll a total of 50 first-year medical students per year, and (4) establish a consortium to share best practices and accelerate evaluation of three-year programs.

2.5 **Develop a four-year medical education program at Charles R. Drew University (CDU).**
This recommendation calls for an unspecified entity to fund a planning grant to position Charles R. Drew University (CDU) to offer an independent four-year MD program, with a first class of 60 students to start in September 2023. The program would supplement two existing programs at CDU, the UCLA-CDU Medical Education Program and the UCLA-Drew PRIME MD program.
2.6 Sustain and expand the UC Riverside Medical School.
This recommendation calls for securing increased, permanent operating resources to increase the number of first-year medical students enrolled at the UC Riverside (UCR) medical school from 70 to 125 students per incoming class (a total enrollment of 500 students) and to increase the number of medical residents trained in residency programs affiliated with UCR from 260 to 500 residents.

2.7 Establish and expand a San Joaquin Valley branch campus of UCSF Fresno.
This recommendation calls for the establishment and expansion of a branch campus of the UCSF School of Medicine in the San Joaquin Valley that would build on the existing UCSF Fresno program. The recommendation also calls for providing educational opportunities to high school and college students in the region to help them become competitive applicants for admission to the branch campus.

2.8 Bring together schools and programs of public health and local health departments to train the next generation of public health professionals and advance health equity.
This recommendation would support partnerships between local health departments and public health schools and programs to create 15 academic health departments (AHDs) that build public health practice and research capacity. Over seven years, AHDs would increase the number of nonclinical public health students exposed to, and prepared for, governmental public health positions in California.

2.9 Integrate training on social determinants of health into all health professions training programs.
This recommendation seeks to integrate the study of social determinants of health into schools of medicine, pharmacy, dentistry, nursing, and public health through (1) an assessment of the current status of education and training on the social determinants of health in all California health professions education institutions and clinical training facilities, including curricula, partnerships with external stakeholders, and faculty competencies; (2) targeted data and technical assistance to support the tailored redesign of the curricula of California health professions education institutions to fully integrate the social determinants of health at all stages of the education and training process; and (3) building a community of practice that supports implementation.

2.10 Expand the role of the California Community Colleges System and its new online college in training the future health workforce.
This recommendation calls for the California Community Colleges Chancellor’s Office to (1) continue and expand its existing statewide and regional health workforce initiatives, and engage with health employers, labor unions, other university and health training providers, and K–12 schools to strengthen pathways to priority health careers for students and incumbent workers; (2) support development of the California Medical Scholars Program, a new statewide coalition of health educators, health professions schools, and employers committed to scaling and sustaining a direct pathway from community college to medical school; and (3) explore the need for and options for increasing production of bachelor of science in nursing graduates in collaboration with nursing schools and programs at California State University and UC.
Strategy 3: Strengthen the Capacity, Effectiveness, Well-Being, and Retention of the Health Workforce

This strategy aims to expand workforce capacity, increase the effectiveness of health workers, and improve provider well-being and retention. California’s current workforce represents a tremendous — and underutilized — asset. Changes to policy and payment have the potential to simultaneously expand access to care and increase provider satisfaction by allowing workers to contribute to the best of their abilities. Expanded use of frontline workers, including peer providers, community health workers, and home care workers, has the potential to deliver both more affordable and more culturally competent care while providing new opportunities to Californians from diverse backgrounds.

Five approaches were pursued in the 11 recommendations for Strategy 3, as outlined in the table below.

Table 4. Strategy 3 Approaches, Recommendations, and Intended Outcomes

<table>
<thead>
<tr>
<th>Approach</th>
<th>Recommendations</th>
<th>Intended Outcome</th>
</tr>
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</table>
| Expand roles and contributions of frontline workers | 3.2 Home care workers  
3.4 Community health workers  
3.5 Peer mental health providers | Increased capacity to provide timely access to quality care in a broad spectrum of settings |
| Build skills and capacity of existing providers | 3.1 Role of nurse practitioners  
3.3 Psychiatric nurse practitioner program  
3.6 Train PCPs in behavioral health  
3.7 Health technology center | Increased capacity and effectiveness of existing health care providers, and improved access to care |
| Increase investments in primary care          | 3.9 Primary care spending targets  
3.11 Regional workforce partnerships | Greater share of health expenditures on primary care, local investment to meet local needs |
| Increase investments in prevention            | 3.4 Community health workers  
3.10 Build local public health agency capacity | Increased capacity and effectiveness of local public health agencies, and health care providers address the social determinants of health |
| Understand challenges facing providers, and design targeted solutions | 3.7 Health technology center  
3.8 Provider burnout | Increased student and provider well-being and retention |

A brief summary of each Strategy 3 recommendation is provided below. The full text of the recommendations and an independent assessment of impact are available in Appendix A.

3.1 Maximize the role of nurse practitioners as part of the care team to help fill gaps in primary care.

This recommendation has three components: (1) expanding NP education to increase the supply of primary care providers in underserved communities, (2) maximizing full use of NP skills within current scope of practice regulations, and (3) reforming scope of practice regulations to give NPs full practice authority after a transitional period of collaboration with a physician or experienced NP.
3.2 **Establish and scale a universal home care worker family of jobs with career ladders and associated training.**

The proposed action is to adopt a new job category for universal home care workers, who provide personal care services. The job category would have three levels based on the types of services provided to the client and the skills needed to deliver those services. The recommendation outlines a process to define the necessary competencies for each level, training requirements, compensation expectations, and amendments of the Nurse Practice Act to authorize greater delegation.

3.3 **Develop a psychiatric nurse practitioner program that recruits from and trains providers to serve in underserved rural and urban communities.**

Three UC schools of nursing (UCSF, UCLA, and UC Davis) would prepare a total of 300 new nurse practitioners with post-master’s training to practice as psychiatric mental health nurse practitioners, using an online and classroom-based program, along with supervised clinical training in specified settings. The program is intended to be self-supporting and would be incorporated into ongoing operational and financial plans of the schools of nursing.

3.4 **Scale the engagement of community health workers and promotores.**

This recommendation proposes a three-year pilot project to facilitate the planning and evaluation of strategies to scale the engagement of community health workers and promotores (CHW/Ps). The recommendation proposes actions in three specific categories: (1) establishing a formal certification process for CHW/P training programs provided by community colleges and community-based organizations, (2) expanding and strengthening CHW/P training programs, and (3) modifying reimbursement mechanisms to enable widespread opportunities for employment of CHW/Ps as fully integrated members of the care team and assure CHW/Ps are paid a livable wage with opportunities for advancement.

3.5 **Create mental health and substance use disorder peer provider certification and reimbursement.**

This recommendation proposes to increase the use of peer providers in California through creation of a certification program and Medi-Cal reimbursement; legislation would be required. Peer providers use lived experience of recovery from mental illness and/or addiction, plus skills learned in formal training, to deliver services in behavioral health settings.

3.6 **Strengthen training for primary care providers on behavioral health and wellness using train-the-trainer (TNT) modalities.**

This recommendation calls for expanded participation in two TNT programs focused on expanding the capacity of primary care providers to meet behavioral health needs: UC Irvine / UC Davis Train New Trainers Primary Care Psychiatry Fellowship Program (TNT Psych) and the UC Davis Train-the-Trainers Primary Care Pain Management Fellowship (T3 Fellowship). The recommendation would fund scholarships, expand program capacity, and target qualifying providers from safety-net institutions and underserved communities for participation in the programs.

3.7 **Establish a California Health Workforce Technology and Data Center to support the adoption of technologies that increase access to quality care.**

This recommendation would establish an advisory council to assess existing and emerging technologies to advance virtual care modalities. The council would also develop an organizational
strategy and plans for the development and operations of the California Health Workforce Center for Technology and Data, which would be established based on the council’s work.

3.8 **Assess the well-being of health professions students and providers, and develop a statewide action plan to proactively address burnout.**

This recommendation calls for funding of an assessment of the causes of, costs of, and potential interventions for burnout in the health professions in California. The assessment results would be used to develop an action plan to proactively address the issue in the full spectrum of delivery settings and training and education programs.

3.9 **Establish primary care spending targets and requirements for public and private payers.**

This recommendation calls for the formation of a statewide collaborative to (1) build consensus in defining what is reported as primary care, (2) establish standards for what is included and reported, (3) explore options to establish benchmarks and increase expenditures (including legislative and/or executive action to support increased investment), and (4) document annual primary care expenditures and associated impacts on access and overall medical care costs.

3.10 **Build capacity of local public health agencies to support collaborative community health improvement through state-hospital matching funds.**

This recommendation calls for development of a state fund that would issue three-year grants to 40 regions (or counties) in California to support comprehensive community health needs assessments, identify and align additional cross-sector resources, engage local stakeholders to design targeted community-level health improvement strategies, monitor progress and outcomes, and facilitate a quality-improvement process to increase effectiveness and reduce inequities. The state fund would require regional hospital matching funds.

3.11 **Engage health plans in regional workforce partnerships and initiatives.**

This recommendation would establish a new matching grant program to provide annual grants to Medi-Cal managed care plans, to allow the plans to support local efforts to meet health workforce needs.

**Priorities for Action**

Collectively, these strategies and recommendations position California to create and sustain the health workforce it will need in the future. Each of the three strategies is essential to success: We must motivate, prepare, and provide opportunity for Californians from all backgrounds and communities to excel in the health professions, educate and train them efficiently to meet the needs of a growing and changing population, and support our current workers by strengthening their capabilities and preventing burnout.

While advancing all 30 recommendations over the next 10 years is important, the Commission highlighted 10 priority actions it agreed would be the most urgent and most impactful first step toward building the health workforce California needs.

1. Expand and scale pipeline programs to recruit and prepare students from underrepresented and low-income backgrounds for health careers (Recommendation 1.1).
2. Recruit and support college students from underrepresented regions and backgrounds to pursue health careers (Recommendation 1.2).
3. Support scholarships for qualified students who pursue priority health professions and serve in underserved communities (Recommendation 1.3).

4. Sustain and expand the PRIME program across UC campuses (Recommendation 2.1).

5. Expand the number of primary care physician residency positions by 20% (Recommendation 2.2).

6. Recruit and train students from rural areas to practice in community health centers in their home region (Recommendation 2.3).

7. Maximize the role of nurse practitioners as part of the care team to help fill gaps in primary care (Recommendation 3.1).

8. Establish and scale a universal home care worker family of jobs with career ladders and associated training (Recommendation 3.2).

9. Develop a psychiatric nurse practitioner program that recruits from and trains providers to serve in underserved rural and urban communities (Recommendation 3.3).

10. Scale the engagement of community health workers and promotores (Recommendation 3.4).

Refer to Appendix A for a full listing of recommendations.

[A summary impact statement for the 10 priority recommendations will be inserted in the final publication.]

Shared Ownership

The strategies and recommendations outlined in this report are the product of an in-depth, deliberative process that integrated extensive input from a broad spectrum of content experts, public officials, advocates, academicians, employers, stakeholder groups, and community members. However, in a state as large and complex as California, and given the broad spectrum of interests in the health sector, it is unlikely that any proposed strategy or recommendation would garner universal support.

Many recommendations call for one or more stakeholders to reallocate resources, shift priorities, and/or make changes that may be difficult in the near term. Substantial efforts were made to advance a portfolio of strategies that offer both benefits and challenges to many stakeholders. The Commission urges all stakeholders to take actions that are in the best interest of the people of California and to invest where inequities are greatest.

The Commission emphasized the importance of engaging all stakeholders in the implementation process, refining recommendations as appropriate, addressing emerging issues and opportunities, and helping to ensure that actions taken reflect the needs of the people of California. For example:

- **State government** can pass legislation, allocate funding, and align department priorities to support implementation of the recommendations and establishment of statewide infrastructure that includes a monitoring function.

- **Health plans** can provide local matching funds for regional infrastructure appropriate for region size, assets, and needs.

- **Philanthropy** can align grantmaking with plan recommendations and support statewide and regional infrastructure efforts.
• **Employers** can develop new health workforce or pathway partnerships, especially in priority regions with documented workforce shortages.

• **Health care organizations** can develop and adopt innovative, person-centered care as well as population health models to improve access and quality and to improve health care worker resiliency and retention.

• **Hospitals and health systems** can align their community benefit giving and other investments to further the implementation of the recommendations and address other conditions essential for a thriving workforce, such as primary prevention, expanding health career pathways in economically distressed communities, and effective preparation of students.

• **Educational systems** can collaborate with other health professions education institutions and employers to provide resources for and increased access to interprofessional training. Educational systems should also be prepared to modernize their curricula and instructional methods to include and emphasize prevention, social factors, team-based care, cultural competence, and data analytics, among other topics.

• **Associations, advocacy organizations, and coalitions** can take action to lead or support implementation of the recommendations and advocate for changes in other essential conditions, such as payment and effective preparation of K–16 students. Refer to Section III for additional information on essential conditions.

**Future Efforts**

*The Commission acknowledged that the vision and recommendations outlined in this report — while comprehensive — are by no means complete.* This report focuses on the health professions with the greatest current and anticipated future shortages and those with the most opportunity for optimization, including recommendations for community health workers and nurse practitioners. There are many other categories of health workers that are equally critical to the health and well-being of Californians. They include, but are not limited to, the oral health workforce, including dentists, dental hygienists, and others; pharmacists; registered nurses; optometrists; technology workers; physician assistants; and medical assistants. Further assessment and action in these areas is essential.
V. A Strong Foundation

The Commission recommends establishing statewide infrastructure and bolstering existing regional infrastructure to operationalize the recommendations, monitor their impact, and adjust these strategies and programs based on emerging needs and opportunities. This level of support is intended to avoid and/or overcome key undermining factors that have limited the impact of prior state and national workforce initiatives, such as lack of oversight and accountability provisions, insufficient staffing, or insufficient resources to achieve target results.\footnote{136}

Statewide Infrastructure

California infrastructure should be established through a public-private partnership with strong engagement of state leaders from the executive and legislative branches, as well as leaders from education, health-sector employers, and other key stakeholders. The infrastructure should include the following:

- **A steering committee** with sufficient influence, resources, and expertise to govern and support plan implementation, ensure coordination and accountability for results, and make ongoing adjustments.
- **A program office** with sufficient capacity, expertise, and relationships to manage plan implementation, advance partnerships and projects, engage stakeholders, and achieve intended results.
- **Data and tracking systems** to monitor, evaluate, and report on progress, demonstrate return on investment, and identify changing workforce needs.

Regional Infrastructure

Over the past 15 years, philanthropies, government, health plans, the education sector, and employers have invested in regional workforce processes and programs. As a result, many regions have promising and maturing health workforce initiatives. With sufficient investment, these initiatives could be scaled to maximize local impact and support statewide goals.

Meeting regional health workforce needs requires state-level policy, education, and programmatic changes as well as region-specific interventions and investments. The Commission recommends enhancing and aligning investments in regional partnerships. Specific priorities include:

- Capacity building and core operating support for existing regional health workforce and pathway initiatives. Funds could be used for staffing, systems, data, and planning to increase scale, sustainability, and impact.
- Development and scaling of programs within existing initiatives to meet regional health workforce needs aligned with plan priorities. Funds could be used for health pathway programs, incumbent worker training, support of education and training programs, and collaborative initiatives among employers.
- New health workforce or pathway partnerships in high-need regions with documented workforce shortages. Priority would be given to collaborative, employer-led initiatives. Area health professions schools would be key partners.
These regional partnerships could also create important communication channels for the state-level steering committee and program office described above. For example, they could serve as “weather stations” on local needs, challenges, and opportunities, and help identify promising innovations.

These initiatives are only a starting point for the type of far-ranging and collaborative efforts that will be needed to address the health workforce crisis facing California. The Commission stressed that all stakeholders will need to be fully engaged and committed to progress because a weakening health workforce cannot support a healthy California economy or a healthy population in the coming years.
VI. Resource Needs

The Commission’s vision for strengthening the supply, distribution, and diversity of the health workforce plan benefits everyone:

- Individuals, families, and communities would receive better access to quality care, and experience better health outcomes.
- Californians interested in and employed in the health professions would experience more rewarding jobs and careers.
- Educational institutions would have the capacity to meet the demand for health professionals — both today’s workers and the workforce of the future.
- Employers would benefit from healthier employees and more affordable care.
- Health employers would have the talent and staffing they need to serve California’s growing and diversifying population.
- California would benefit from a healthier population because residents would receive the right care at the right time in the right setting.

This section provides information on the costs and potential funding sources for implementation of the Commission’s recommendations.

Resource Needs

The cost of the 10 priority recommendations is $2.16 billion over 10 years.

The cost of all 30 recommendations is $5.9 billion over 10 years.

Funding Sources

Consistent with the commitment to shared ownership, funding for implementation of the plan will be expected from a variety of sources, including but not limited to the following:

- California general and special funds in the health, education, workforce development, and social service sectors
- Federal funds, allocated directly or indirectly through state agencies
- Philanthropy in the health, education, and community development sectors
- Health-sector employers such as hospitals, home health agencies, community clinics, medical groups
- K–14, higher education, and health professions school funding, including Career Technical Education funding, in alignment with priority workforce needs and metrics for training completion and job placement
- Health plans
- Business investment from technology and other sectors

The Commission also recommends that these and other stakeholders consider what opportunities they have to reallocate existing funding in alignment with the recommendations.
Commitments
[To be completed after final Commission meeting.]

Conclusion
[To be completed after final Commission meeting.]
VII. Endnotes


6 Coffman et al., *Current and Future Workforce*.


19 “Occupational Outlook,” BLS.


21 Spetz, Coffman, and Geyn, *Forecasted Supply*.


23 *Creating Patient-Centered*, AHRQ.


27 “Designated,” HRSA.

28 Spetz, Coffman, and Geyn, *California’s Primary Care Workforce*.


32 Coffman, Geyn, and Himmerick, *Current Supply*.

33 Coffman, Fix, and Ko, *Physician Supply*.

34 Bates, Spetz, and Werts, *California’s Physician Assistants*.


37 Data provided by internal assessment from CDPH.

38 2017 State Leadership, CDPH.


40 J. Darrell et al., “Local Health Department Workforce Recruitment and Retention: Challenges and Opportunities — a Practitioner Briefing,” University of Illinois at Chicago and the Center for State and Local Government Excellence, November 2013.

41 Presentation by CDPH Director Karen Smith to CFHWC Primary Care and Prevention Subcommittee, June 1, 2018.


45 Holt, *For Too Many*.


47 Coffman et al., *Current and Future Workforce*.

48 Holt, *For Too Many*.

49 Holt.


51 Coffman et al., *Current and Future Workforce*.


58 American College Health Association, December 2016.


60 Calculations based on the US Census Bureau’s American Community Survey and Decennial Census.

61 Beck and Johnson, *Planning*.

62 Beck and Johnson.


65 Healthy Aging and Care for Older Adults Subcommittee, presentation to the California Future Health Workforce Commission, February 13, 2018.

66 Binette and Vasold, “Preferences.”

67 California Health Interview Survey (CHIS), UCLA, 2011–12.


The Health Resources and Services Administration defines an HPSA as “a geographic area, population, or facility with a shortage of primary care, dental, or mental health providers and services.”


Bohn et al., California’s Future.

Bohn et al.

Hsu et al., Language Concordance.

Hsu et al.

Coffman et al., Current and Future Workforce.


Final Report, California Higher Education Health Professions Steering Committee.

Spetz, Coffman, and Geyn, Forecasted Supply.

Spetz, Coffman, and Geyn.


The American Association of Medical Colleges defines URM as “those racial and ethnic populations that are underrepresented in the medical profession relative to their numbers in the general population”; specification of populations is left to the local area (www.aamc.org/initiatives/urms). UCSF includes the following groups as URMs: African American / black, Filipino, Hmong, Vietnamese, Hispanic/Latinx, Native American, Native Hawaiian / Pacific Islander, and two or more races when one is from the preceding list (https://diversity.ucsf.edu/URM-definition).

Smedley, Butler, and Bristow, Compelling Interest.


Smedley, Butler, and Bristow, Compelling Interest.


97 Rittenhouse et al., Guide to GME Funding.


101 “Medi-Cal Local Assistance Estimates,” DHCS, May 2016. State expenditures includes spending from state funds, federal matching funds, and other funds and revenue sources.


115 Henry et al., AHAR.

116 Henry et al.


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46

120 “Food Security,” USDA.


124 Developed by the Public Policy Institute of California and the Stanford Center on Poverty and Inequality.

125 Sarah Bohn, Caroline Danielson, and Tess Thorman, Just the Facts: Poverty in California, Public Policy Institute of California, July 2018.


129 Manship, Jacobson, and Fuller, “Achieving Fair Access.”


135 “Threshold Language” means a language that has been identified as the primary language, as indicated on the Medi-Cal Eligibility Data System (MEDS), of 3,000 beneficiaries or 5% of the beneficiary population, whichever is lower, in an identified geographic area.

VIII. Appendices

Appendix A1: Recommendations

Refer to separate attachment for recommendation and impact statements.
Appendix A2: Dissenting Opinions and Other Statements

Statement 1

Recommendation Numbers and Names

- 2.4 — Expand and scale three-year medical school programs to prepare primary care and behavioral health providers for work in underserved areas.
- 2.5 — Develop a four-year medical education program at Charles R. Drew University.
- 2.6 — Sustain and expand the UC Riverside Medical School.
- 2.7 — Establish a San Joaquin branch campus of UCSF Fresno.

Dissenting Commissioner: Barbara Ferrer

Summary of Dissent Issue

For each of the recommendations identified (2.4, 2.5, 2.6, 2.7), the Commissioner suggests a more expansive track that could allow a larger range of programs or institutions to be funded in support of the recommendations’ goals. While supporting funding for the named programs, the Commissioner would prefer that each recommendation define the criteria that make the named programs or institutions attractive. For example, in Recommendation 2.5, Charles R. Drew University has the history and experience to meet Commissioner goals, but instead of limiting funding to this university specifically, identifying those characteristics as requirements for funding would allow additional schools that may also be engaged in similar work to request support. The Commissioner believes this would help assure that Commission recommendations maximize support for any programs that meet the identified criteria. Similarly, rather than target resources only to the Inland Empire, Recommendation 2.6 could focus on fast-growing regions of California with significant primary care and specialist provider shortages. Additional criteria could focus on the program applicant pool in terms of race, gender, and measures of socioeconomic or educational disadvantage. The Commissioner agrees that it is possible that in one or more of the recommendations, there are no other organizations that would meet the criteria but believes that naming specific institutions runs the risk of making the recommendations appear biased. By replacing language that proposes funding organizations and programs with a list of criteria the Commission wants to support to meet a larger workforce goal, the Commission can have a similar impact without limiting support only to the named entities in these recommendations.
Statement 2

Recommendation Numbers and Names: All

Dissenting Commissioner: Richard Pan

Summary of Dissent Issue

As a former professor who authored both original peer-reviewed research on health professions workforce and national workforce policy, I welcomed the opportunity to serve on the California Future Health Workforce Commission, although I was not included until over a year from the launch of the Commission, and at the time recommendations were already being drafted. Based on my background in workforce policy, I have expressed and continue to have concerns about the current report and some recommendations.

An adequate health workforce is foundational to access to quality, affordable health care, and the workforce is most frequently examined from the perspective of access. Achieving workforce goals is not primarily an educational pipeline problem, but often a result of working conditions including poor and/or misaligned payment, burnout, and work/family demands. There needs to be a stronger emphasis on improving working conditions to retain and attract health professionals to provide needed services. The role of allied health professionals is not given enough attention, despite workforce shortages that impact care. The long-term care workforce should be given greater emphasis, with a growing percentage of Californians needing these professionals, which is an active legislative issue. The oral health workforce is almost entirely neglected, although access to oral surgery and lack of dental access in Medi-Cal has been a subject of policy actions by the legislature. Pipeline interventions can help achieve greater diversity in the health workforce congruent with the general population, which will improve access to care.

The education and organization of health professionals is essential to quality of care. There is strong evidence for the benefits of quality primary care. The Institute of Medicine (now the National Academy of Medicine) defined primary care as “the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community [italics in the original].” Quality primary care demands a breadth of knowledge of human physiology and pathology and social determinants of health. Yet, primary care is devalued in the United States as care that demands less education or knowledge and is compensated less than specialty care. Quality health care, particularly for people with chronic conditions, also requires team care and care coordination, which involves integration, not fragmentation, of care by different health professionals including nurses and physician assistants, pharmacists, psychologists and therapists, social workers, allied health, and community health workers with physician leadership.

Expanding the health workforce also influences health care cost. Expanding the number of independent practitioners increases utilization, thereby increasing costs. More experienced, more highly trained clinicians utilize fewer tests than clinicians with less training and experience. Thus, priming the health professions educational pipeline without increasing incentives for practice in underserved communities may not solve access deficits but still increase cost pressures.
Statement 3

Recommendation Numbers and Names: All

Commissioner: David Carlisle

Summary of Issue

“Not underserved, underresourced”

—Dr. Loretta Jones, Professor, Charles R. Drew University of Medicine and Science

The Report of the Commission is the first comprehensive review of the status of California’s health professions workforce in many years. Its breadth and level of detail is truly outstanding. The Report’s recommendations are a prescriptive compendium of strategies that can be utilized to ensure that we are on the right path to build a more effective and efficient health professions workforce for the future of the health of California.

The Report now creates a new opportunity for California: to examine those root cause factors that have led to the need for such a report and that constrain the State’s ability to achieve excellent health and wellness for all its residents. One critical example is the need to develop strategies to improve the equity of California’s vital Medi-Cal program: it is no coincidence that communities with the highest prevalence of Medi-Cal recipients (often 80%–90% of residents) are those with the fewest health care providers of any type and are also usually those with the worst health outcomes.

California now has both the opportunity and the compelling need to specifically address these root cause factors, particularly the effectiveness of its Medi-Cal program — especially as the program has so successfully grown to now provide health insurance to almost one-third of our State’s residents.
Appendix B: Acknowledgments

The Commission would also like to thank the following people, who provided research, data, and input into the recommendation process.

Technical Advisory Committee

- Manal Aboelata, MPH, Deputy Executive Director, Prevention Institute
- Sergio Aguilar-Gaxiola, MD, PhD, Director, University of California Davis Center for Reducing Health Disparities
- Charles Alexander, PhD, Associate Vice Provost for Student Diversity, University of California Los Angeles
- Mayra Alvarez, MHA, President, The Children’s Partnership
- José Arévalo, MD, Chair, Latino Physicians of California, and Senior Medical Director, Sutter Independent Physicians
- Cindy Beck, Health Careers Education Programs Consultant, Career and College Transition Division, California Department of Education
- Judith Berg, MS, RN, CEO, HealthImpact
- Jeanne Cain, former Executive Vice President of Policy, CalChamber
- Christine Cassel, MD, UCSF Presidential Chair, University of California San Francisco (UCSF) Department of Medicine
- Jennie Chin Hansen, MS, RN, Independent Consultant, Hirsch and Associates, Philanthropic Advisors, and former CEO, American Geriatrics Society
- Yvonne Choong, MPP, Vice President, Center for Health Policy at the California Medical Association
- Wanda Cole-Frieman, Vice President, Talent Acquisition, Dignity Health
- Sarah de Guia, JD, Executive Director, California Pan-Ethnic Health Network
- Loriann DeMartini, PharmD, CEO, California Society of Health-System Pharmacists
- Audrey Dow, MPA, Senior Vice President, The Campaign for College Opportunity
- Lisa Folberg, MPP, Executive Vice President and CEO, California Academy of Family Physicians
- Anthony Galace, MPH, Health Equity Director, The Greenlining Institute
- Ivan Gomez, MD, Program Director and Principal Investigator, California Area Health Education Center, UCSF Fresno Medical Education Program
- Virginia Hedrick, MPH, Director of Policy and Planning, California Consortium for Urban Indian Health
- Christopher Henry, Vice President of Talent and Change Management, Sutter Health
- Susan Hogeland, former Executive Vice President, California Academy of Family Physicians
- Saskia Kim, Regulatory Policy Specialist, California Nurses Association / National Nurses United
- Ann-Louise Kuhns, MPP, President and CEO, California Children’s Hospital Association
- Beth Malinowski, MPH, Deputy Director for Government Affairs, California Primary Care Association
- Christine Mallon, PhD, former Assistant Vice Chancellor of Academic Programs and Faculty Development, and former State University Dean of Academic Programs, California State University Office of the Chancellor
- Cathy Martin, Vice President, Workforce Policy, California Hospital Association
- Kimberly Mayer, MSSW, Director of Workforce Development, California Institute for Behavioral Health Solutions
- Maggie Merritt, Executive Director, Steinberg Institute
- Rebecca Miller, Workforce Director, SEIU United Healthcare Workers West
- Bob Montoya, MD, MPH, Medical Consultant
- Laura Mosqueda, MD, Dean, Keck School of Medicine at University of Southern California
- Jeffrey Mrizek, EdD, MBA, Dean of Effective Practices, Workforce and Economic Development Division, California Community Colleges Chancellor’s Office
- Erica Murray, MPA, President and CEO, California Association of Public Hospitals and Health Systems
- Sunita Mutha, MD, Director, Healthforce Center at UCSF
- Robert Redlo, Executive Committee Member, California Workforce Development Board
- Jeffrey Reynoso, DrPH, MPH, Executive Director, Latino Coalition for a Healthy California
- Anette Smith-Dohring, Workforce Development Manager, Sutter Health
- Abby Snay, CEO, Jewish Vocational Services
- Joanne Spetz, PhD, Associate Director of Research, Healthforce Center at UCSF
- Stacie Walker, Deputy Director, Healthcare Workforce Development Division, Office of Statewide Health Planning and Development
- Winston Wong, MD, MS, Medical Director, Community Benefit, and Director, Disparities Improvement and Quality Initiatives, Kaiser Permanente
- Wilma Wooten, MD, MPH, Public Health Officer, and Director, Public Health Services, County of San Diego Health and Human Services Agency
- Alison Wrynn, PhD, Interim Assistant Vice Chancellor of Academic Programs and Faculty Development, and Interim State University Dean of Academic Programs, California State University Office of the Chancellor
- Linda Zorn, RD, MA, Sector Navigator / Statewide Director, Health Workforce Initiative, California Community College Chancellor’s Office

Subcommittees

Behavioral Health Subcommittee
- Sergio Aguilar-Gaxiola, MD, PhD (Cochair), Director, UC Davis Center for Reducing Health Disparities
- Elizabeth Gibboney, MA (Cochair), CEO, Partnership HealthPlan of California
- Kimberly Mayer, MSSW (Subcommittee Staff Lead), Director of Workforce Development, California Institute for Behavioral Health Solutions
- Jane Adcock, Executive Director, California Behavioral Health Planning Council
- Robin Affrime, MPH, former CEO, CommuniCare Health Centers
- Sarah Arnquist, MPH, Vice President of Client Partnerships, Beacon Health Options
- Anne Bakar, President and CEO, Telecare Corporation
- Kirsten Barlow, MSW, Senior Policy Consultant, Harbage Consulting
- Stuart Buttlaire, PhD, Regional Director of Inpatient Psychiatry and Continuing Care, Northern California Kaiser Permanente
- Jeanne Cain, former Executive Vice President of Policy, CalChamber
- Marina Castillo-Augusto, MS, Chief, Community Development and Engagement Unit, Office of Health Equity, California Department of Public Health
- Clayton Chau, MD, PhD, Regional Executive Medical Director, Institute for Mental Health and Wellness, Providence St. Joseph Health, Southern California Region
• Patrick Courneya, MD, Executive Vice President and Chief Medical Officer, National Health Plan and Hospitals Quality, Kaiser Permanente
• Jessica Cruz, MPA, Executive Director, National Alliance on Mental Illness California
• E. Maxwell Davis, PhD, LISW, Director, Integrated Behavioral Health Program, California Social Work Education Center, UC Berkeley School of Social Welfare
• Thad Dixon, CEO, Xpio Health
• Sheree Lowe, Vice President, Behavioral Health, California Hospital Association
• Maggie Merritt, Executive Director, Steinberg Institute
• Jennifer Patterson, PhD, US Department of Veterans Affairs
• Bethany Phoenix, PhD, RN, Health Sciences Clinical Professor and Vice-Chair, Department of Community Health Systems, UCSF School of Nursing
• Kristene Smith, CEO, Mental Health California
• Elizabeth Stanley-Salazar, MPH, RN, Project Manager, California Institute for Behavioral Health Solutions
• Sheila Thornton, President and CEO, OneFuture Coachella Valley
• Dawan Utecht, Director of Behavioral Health / Public Guardian, Fresno County
• Stacie Walker, Deputy Director, Healthcare Workforce Development Division, Office of Statewide Health Planning and Development
• Stephanie Welch, Executive Officer, Council on Criminal Justice and Behavioral Health
• Timothy White, PhD, Chancellor, California State University
• Jim Wood, DDS, Assemblymember, California State Assembly
• Donna Wyatt, MS, Director, Career and College Transitions Division, California Department of Education

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• Christine Mallon, PhD, former Assistant Vice Chancellor of Academic Programs and Faculty Development, and former State University Dean of Academic Programs, California State University Office of the Chancellor
• Jeffrey Mrizek, EdD, MBA, Dean of Effective Practices, Workforce and Economic Development Division, California Community Colleges Chancellor's Office
• Alison Wrynn, PhD, Interim Assistant Vice Chancellor of Academic Programs and Faculty Development, and Interim State University Dean of Academic Programs, California State University Office of the Chancellor
• Lydia Yu, MHS, Coordinator of Health Policy and Legislation, University of California Office of the President

Healthy Aging and Care for Older Adults Subcommittee
• Christine Cassel, MD (Cochair), UCSF Presidential Chair, UCSF Department of Medicine
• Heather Young, PhD, RN, FAAN (Cochair), Professor and Founding Dean Emerita, Betty Irene Moore School of Nursing at UC Davis
• Lisa Williams (Subcommittee Staff Lead), Director, Community Engagement and Strategic Partnerships, UnitedHealthcare
• Bruce Chernof, MD, President and CEO, The SCAN Foundation
• Jennie Chin Hansen, MS, RN, Independent Consultant, Hirsch and Associates, Philanthropic Advisors, and former CEO, American Geriatrics Society
• Alma Hernandez, Executive Director, SEIU California
• Terry Hill, MD, Physician Advisor, Hill Physicians Medical Group
• David Lindeman, PhD, MSW, Director, Center for Information Technology in the Interest of Society (CITRIS) Health Initiative, and Director, Center for Technology and Aging, UC Berkeley
• Marty Lynch, PhD, Executive Director/CEO, LifeLong Medical Care
• Arnie Milstein, MD, MPH, Professor of Medicine, Stanford University
• Laura Mosqueda, MD, Dean, Keck School of Medicine of University of Southern California
• Eloy Ortiz Oakley, MBA, Chancellor, California Community Colleges
• Robyn Stone, DrPH, Senior Vice President of Research, Leading Age, and Codirector, LeadingAge LTSS Center @UMass Boston
• Jon Warner, PhD, MBA, Ambassador, Aging 2.0, and CEO, Silver Moonshots, and CEO, RX4 Group
• Heather Wasielewski, MBA, Senior Advisor, Center for Medicare and Medicaid Innovation
• Holly Yang, MD, Director of Community-Based Palliative Care, Scripps Health, and Codirector, UC San Diego/Scripps Hospice and Palliative Medicine Fellowship Program

Primary Care and Prevention Subcommittee

• Hector Flores, MD (Cochair), Chair, Family Practice Department, White Memorial Medical Center
• Rishi Manchanda, MD, MPH (Cochair), President, Health Begins
• Melissa Schoen, MBA, MPH (Subcommittee Staff Lead), Principal, Schoen Consulting
• Manal Aboelata, MPH, Deputy Executive Director, Prevention Institute
• Judith Berg, MS, RN, CEO, Health Impact
• Tim Berthold, MSPH, Faculty and Program Coordinator, Community Health Worker Certificate Program, City College of San Francisco
• Linda Burnes Bolton, DrPH, RN, Vice President for Nursing, Chief Nursing Officer, Cedars-Sinai
• America Bracho, MD, MPH, Executive Director, Latino Health Access
• David Carlisle, MD, PhD, MPH, President and CEO, Charles R. Drew University of Medicine and Science
• Joseph Castro, PhD, MPP, President, California State University, Fresno
• Garrett Chan, PhD, NP, Clinical Associate Professor of Medicine for Primary Care and Population Health, and Clinical Associate Professor of Emergency Medicine, Stanford University
• Toni Johnson-Chavis, MD, Dr. Toni Johnson-Chavis Medical Practice
• Yvonne Choong, MPP, Vice President, Center for Health Policy at the California Medical Association
• Muntu Davis, MD, MPH, Health Officer, Los Angeles County Department of Public Health
• Michael DeRosa, PhD, PA-C, Associate Professor and Department Chair, Physician Assistant Department, Samuel Merritt University
• Patrick Dowling, MD, MPH, Professor and Chair, Department of Family Medicine, University of California Los Angeles
• Angela Echiverri, MD, MPH, Family Medicine Physician, North Richmond Center for Health, and Faculty, Contra Costa Family Medicine Residency Program
• Jonathan Fielding, MD, MBA, MPH, MA, Distinguished Professor in Residence, UCLA
• Jane Garcia, MPH, President and CEO, La Clínica de la Raza
• Dean Germano, MHSc, CEO, Shasta Community Health Center
• Kevin Grumbach, MD, Chair, UCSF Department of Family and Community Medicine, and Codirector, UCSF Center for Excellence in Primary Care, and Codirector, UCSF Clinical Translational Science Community Engagement and Health Policy Program

• Gary Gugelchuk, PhD, Provost and Chief Operating Officer, Western University of Health Sciences

• Ed Hernandez, OD, former Senator, California State Senate

• Susan Hogeland, former Executive Vice President, California Academy of Family Physicians

• Bob Montoya, MD, MPH, Medical Consultant

• Felix Nuñez, MD, MPH, Medical Director – Inland Empire, Molina Healthcare of California

• Mary Pittman, DrPH, President and CEO, Public Health Institute

• Karen Smith, MD, MPH, Director and State Public Health Officer, California Department of Public Health

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• Dena Bullard, MHS, Coordinator of Academic Programs and Special Initiatives, University of California Office of the President

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Richard Figueroa, MBA, Director of Prevention
George Flores, MD, MPH, former Senior Program Manager of Prevention

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Earl Lui, JD, Program Director
Crystal D. Crawford, JD, Program Director

Authors and Management Team

The Public Health Institute (PHI) staffed the Commission. PHI is an independent nonprofit organization dedicated to promoting health, well-being, and quality of life for people throughout California, across the nation, and around the world. PHI's primary methods for achieving these goals include sharing
evidence developed through quality research and evaluation, conducting public policy analysis and advocacy, providing training and technical assistance, and promoting successful prevention strategies to policymakers, communities, and individuals.

• Kevin Barnett, DrPH, MCP (Codirector — Management Team), Senior Investigator, Public Health Institute
• Jeffrey Oxendine, MBA, MPH (Codirector — Management Team), CEO, OXS Consulting; Founder and President, Health Career Connection; and former Associate Dean, UCB School of Public Health

• Andrew Broderick, MA, MBA, Codirector, Center for Innovation and Technology in Public Health, Public Health Institute
• Holly Calhoun, Research Associate, Public Health Institute
• Janet Coffman, PhD, MA, MPP, Associate Professor, UCSF School of Medicine, Institute for Health Policy, and Faculty, Healthforce Center at UCSF
• Roza Do, MPH, MCP, Program Management Consultant
• Katherine Flores, MD, Director, UCSF Fresno Latino Center for Medical Education and Research, and Associate Clinical Professor, UCSF
• Veronica Mijic, Program Manager, Public Health Institute
• David Panush, President, California Health Policy Strategies
• Diane Rittenhouse, MD, MPH, Associate Professor of Family and Community Medicine and Health Policy, UCSF
• Rona Sherriff, Workforce and Education Consultant, RLS Consulting, and Codirector, California EDGE Coalition
• Antonio Soriano, Intern, Public Health Institute
• Joanne Spetz, PhD, Associate Director of Research, Healthforce Center at UCSF
• Abigail Stavros, Administrative Assistant, Public Health Institute
• Lisa Tadlock, MPA, MAEd, Interim Program Manager, Public Health Institute
• Jill Yegian, PhD, Yegian Consulting

**Impact Assessment**

Independent evaluators from Healthforce Center at the University of California, San Francisco (UCSF), and Health Management Associates assessed the information and data provided in each recommendation and created impact assessments for each. The primary objective of the impact assessments is to provide unbiased and realistic estimations of the possible impact should the recommendation be successfully implemented; assessment of operational feasibility and funding availability was out of scope. The impact assessments should be viewed as distinct from the recommendations and should not be viewed as endorsements of the recommendations.

**Healthforce Center at UCSF** is an organization dedicated to helping health care organizations drive and navigate change. Healthforce is the leading source for research insights into the evolving health care workforce and for pioneering capacity-building programs that prepare leaders with the knowledge and skills to drive progress toward more effective health care delivery.

Core members of the impact assessment team included:
• Sunita Mutha, MD, Director, Healthforce Center at UCSF
• Susan A. Chapman, PhD, MPH, RN, Faculty, Healthforce Center at UCSF
• Janet Coffman, PhD, MA, MPP, Faculty, Healthforce Center at UCSF
• Joanne Spetz, PhD, Associate Director of Research, Healthforce Center at UCSF
• Rebecca Hargreaves, MPP, Senior Manager for Strategic Initiatives, Healthforce Center at UCSF
• Leonard Finocchio, DrPH, MPH, Principal Consultant, Blue Sky Consulting Group
• Matthew Newman, MPP, Principle and Cofounder, Blue Sky Consulting Group
• Laura Preuss, MSW, Policy Analyst, Blue Sky Consulting Group
• Joel Schwartz, MS, Senior Consultant, Blue Sky Consulting Group

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Core members of the impact assessment team included:

• Nora Leibowitz, MPP, Principal
• Helen DuPlessis, MD, MPH, Principal
• Carrie Cochran-McClain, MPA, Principal
• Kelly Krinn, MPP, Consultant
• Ryan Mooney, JD, Senior Consultant