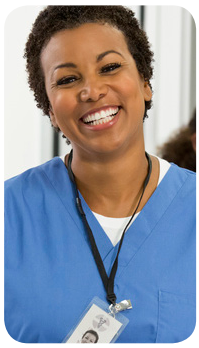
MEETING THE DEMAND FOR HEALTH

FINAL REPORT OF THE CALIFORNIA FUTURE HEALTH WORKFORCE COMMISSION



CALIFORNIA FUTURE HEALTH WORKFORCE COMMISSION

FEBRUARY 2019

Commission Makeup and Structure

The Commission was co-chaired 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 24 commissioners included prominent health, policy, workforce development, and education leaders in the state.

Commission Members

Janet Napolitano, JD
Co-chair
President
University of California

Anne Bakar
President and CEO
Telecare Corporation

America Bracho, MD, MPH
Executive Director
Latino Health Access

Joseph Castro, PhD, MPP
President
California State University, Fresno

Barbara Ferrer, PhD, MPH, MEd
Director
Los Angeles County Department
of Public Health

Jane Garcia, MPH
President and CEO
La Clínica de la Raza

Elizabeth Gibboney, MA
CEO
Partnership HealthPlan of California

Ed Hernandez, OD
Former Senator
California State Senate

Arnie Milstein, MD, MPH
Professor of Medicine
Stanford University

Sheila Thornton
President and CEO
OneFuture Coachella Valley

Michael Wilkening, MA
Secretary
California Health and Human Services Agency

Donna Wyatt, MS
Director
Career and College Transitions Division
California Department of Education

Lloyd Dean, MA
Co-chair
President and CEO
Dignity Health

Linda Burnes Bolton, DrPH, RN, FAAN
Vice President for Nursing, Chief Nursing Officer
Cedars-Sinai

David Carlisle, MD, PhD, MPH
President and CEO
Charles R. Drew University of Medicine and Science

Patrick Courneya, MD
Executive VP and Chief Medical Officer
National Health Plan and Hospitals Quality
Kaiser Foundation Health Plan and Hospitals

Hector Flores, MD
Chair
Family Practice Department
White Memorial Medical Center

C. Dean Germano, MHSc
CEO
Shasta Community Health Center

Alma Hernandez
Executive Director
SEIU California

Rishi Manchanda, MD, MPH
President
Health Begins

Eloy Ortiz Oakley, MBA
Chancellor
California Community Colleges

Timothy White, PhD
Chancellor
California State University

Jim Wood, DDS
Assemblymember
California State Assembly

Heather M. Young, PhD, RN, FAAN
Professor and Founding Dean Emerita
Betty Irene Moore School of Nursing, UC Davis

Endorsement

Commissioners unanimously endorsed the report and its recommendations and priorities with the exceptions listed on page 38 and further described in Appendix A2.

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 Co-chairs:** Hector Flores, chair, Family Practice Department, White Memorial Medical Center (commissioner); and Rishi Manchanda, president, Health Begins (commissioner)
2. **Behavioral Health Subcommittee Co-chairs:** 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 Co-chairs:** 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 27 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 create an inventory of 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.

Recommended citation: *Meeting the Demand of Health: Final Report of the California Future Health Workforce Commission, California Future Health Workforce Commission*, February 2019, https://futurehealthworkforce.org/.

Contents

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 27 recommendations follow.

EXECUTIVE SUMMARY: MEETING THE DEMAND FOR HEALTH

FINAL REPORT OF THE CALIFORNIA FUTURE HEALTH WORKFORCE COMMISSION

Introduction: A Looming Workforce Crisis

California's health system is facing a crisis, with rising costs and millions of Californians struggling to access the care they need. This growing challenge has many causes and will require bold action by the new governor, legislators, and a broad spectrum of stakeholders in the public and private sectors. At the core of this challenge is the simple fact that California does not have enough of the right types of health workers in the right places to meet the needs of its growing, aging, and increasingly diverse population.

The California Future Health Workforce Commission has spent nearly two years focused on meeting this challenge, issuing a new report with recommendations for closing California's growing workforce gaps by 2030.

The Problem: Workforce Shortages, Provider Mismatches

In many parts of the state, this crisis is already at hand: Seven million Californians, the majority of them Latino, African American, and Native American, already live in Health Professional Shortage Areas — a federal designation for counties experiencing shortfalls of primary care, dental care, or mental health care providers. These shortages are most severe in some of California's largest and fastest-growing regions, including the Inland Empire, Los Angeles, and San Joaquin Valley, and in most rural areas.

As a generation of baby boomers retires — including a large percentage of the health workforce — and as living costs rise and the state's production of health workers continues to lag growing demands, millions more Californians will find it difficult to access quality, affordable care. This looming crisis will be most acute in primary care, behavioral health, and among workers who care for older adults. In just 10 years, for example, California is projected to face a shortfall of more than 4,100 primary care clinicians and 600,000 home care workers, and will have only two-thirds of the psychiatrists it needs.

To adequately fill these gaps, the state must also overcome the growing mismatch between its existing workforce and the state's increasingly diverse population. People of color will make up the majority of Californians by 2030, but they remain severely underrepresented in the health workforce. While Latinos are now nearly 40% of the state's population, for example, they compose only 7% of physicians. More than seven million Californians have limited English proficiency and would benefit from multilingual providers — yet few are available.

The Solution: A Comprehensive Plan to Build the Workforce That California Needs

The California Future Health Workforce Commission was created in 2017 by a group of the state's leading health philanthropies to address this looming crisis — and to create a comprehensive action plan for building the health workforce California will need by 2030.

The Commission's final report includes a set of 27 detailed recommendations within three key strategies that will be necessary for: (1) increasing opportunities for all Californians to advance in the health professions, (2) aligning and expanding education and training, and (3) strengthening the capacity, retention, and

About the California Future Health Workforce Commission

The Commission was co-chaired 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 24 commissioners included prominent health, policy, workforce development, and education leaders in the state.

effectiveness of health workers. Throughout its deliberations, the Commission has focused on the need to increase the diversity of the state's health workforce, enable the workforce to better address health disparities, and incorporate new and emerging technologies.

While advancing all 27 recommendations over the next decade will be important, the Commission has highlighted 10 priority actions that its members have agreed would be among the most urgent and most impactful first step toward building the health workforce that California needs. (See next page.)

To make these proposals a reality, the Commission also recommended establishing statewide infrastructure, starting in 2019, to implement the recommendations in partnership with stakeholders, to monitor progress, and to make adjustments as needs and resources change. This statewide effort will need to be paired with strong regional partnerships to advance local workforce and education solutions.

The Values and Strategies of the California Future Health Workforce Commission

By 2030, California's health workforce will reflect the diversity of the state and have the capacity and competencies to:

- Improve health, equity, and well-being in all communities.
- Provide accessible, affordable, high-quality services at the right time, at the right level, and in the right places.
- Transform health care delivery to address social needs and improve health outcomes across the life course.

Priorities for Action

California leaders, stakeholders, and partners in health professions education and health care delivery must embrace bold steps to create and sustain the health workforce that communities need now and will need in the future. The Commission's bold and far-reaching recommendations reflect the new directions and significant commitment required by multiple stakeholders to motivate, prepare, and provide opportunities for Californians from all backgrounds and communities to excel in the health professions, to train enough new workers to meet statewide and regional needs, and to support current workers by strengthening their capabilities and preventing burnout.

The Commission's 10 priorities for immediate action and implementation are:

1. **Expand and scale pipeline programs to recruit and prepare students from underrepresented and low-income backgrounds for health careers** with mentorship, academic, career, and psychosocial support. Under these health pipeline programs, as many as 5,700 low-income and underrepresented minority professionals will be able to join the California health care workforce during a 10-year period at a cost of just $11,000 per person. (Recommendation 1.1)
2. **Recruit and support college students, including community college students, from underrepresented regions and backgrounds to pursue health careers,** and form associated partnerships that provide academic, advising, and health career development support. College students from low-income and first-generation backgrounds will be targeted for inclusion in this priority, which has the potential to add at least 25,500 new California health care workers over 10 years. (Recommendation 1.2)
3. **Support scholarships for qualified students who pursue priority health professions and serve in underserved communities** under a new Emerging California Health Leaders Scholarship Program. Approximately 3,810 students (1,707 physicians, 696 nurse practitioners, 152 physician assistants, 325 public health professionals, and 930 social workers) would be supported over the next 10 years, making the path to health education and service in underserved communities a reality for many more Californians. (Recommendation 1.3)
4. **Sustain and expand the Programs in Medical Education (PRIME) program across UC campuses** to train highly motivated, socially conscious graduates who will become licensed physicians practicing in underserved communities. Under this priority, the goal is to support PRIME's current student enrollment of 354 students and increase enrollment by 40 students a year. (Recommendation 2.1)
5. **Expand the number of primary care physician and psychiatry residency positions,** yielding an increase of 1,872 primary care physicians and 2,202 psychiatrists by 2030. In conjunction with priorities 7 (maximize role of nurse practitioners) and 9 (psychiatric nurse practitioners), this recommendation would eliminate California's projected shortage of primary care physicians and psychiatrists. (Recommendation 2.2)
6. **Recruit and train students from rural areas and other underresourced communities to practice in community health centers in their home regions** by providing these medical students with full-tuition scholarships for medical school in exchange for practicing in underserved areas. Once this partnership with 10 California medical schools and several community health centers is fully implemented in 2026, it's anticipated that California would see an increase of 200 to 480 additional medical students annually. (Recommendation 2.3)
7. **Maximize the role of nurse practitioners as part of the care team to help fill gaps in primary care,** helping to increase the number of nurse practitioners to 44,000 by 2028, and providing them with greater practice authority, with particular emphasis in rural and urban underserved communities. (Recommendation 3.1)
8. **Establish and scale a universal home care worker family of jobs with career ladders and associated training,** helping to meet the need for an estimated 600,000 home care workers by 2030, and potentially reducing spending on unnecessary emergency department visits and hospitalizations by more than $2.7 billion over 10 years due to enhanced training and care. (Recommendation 3.2)

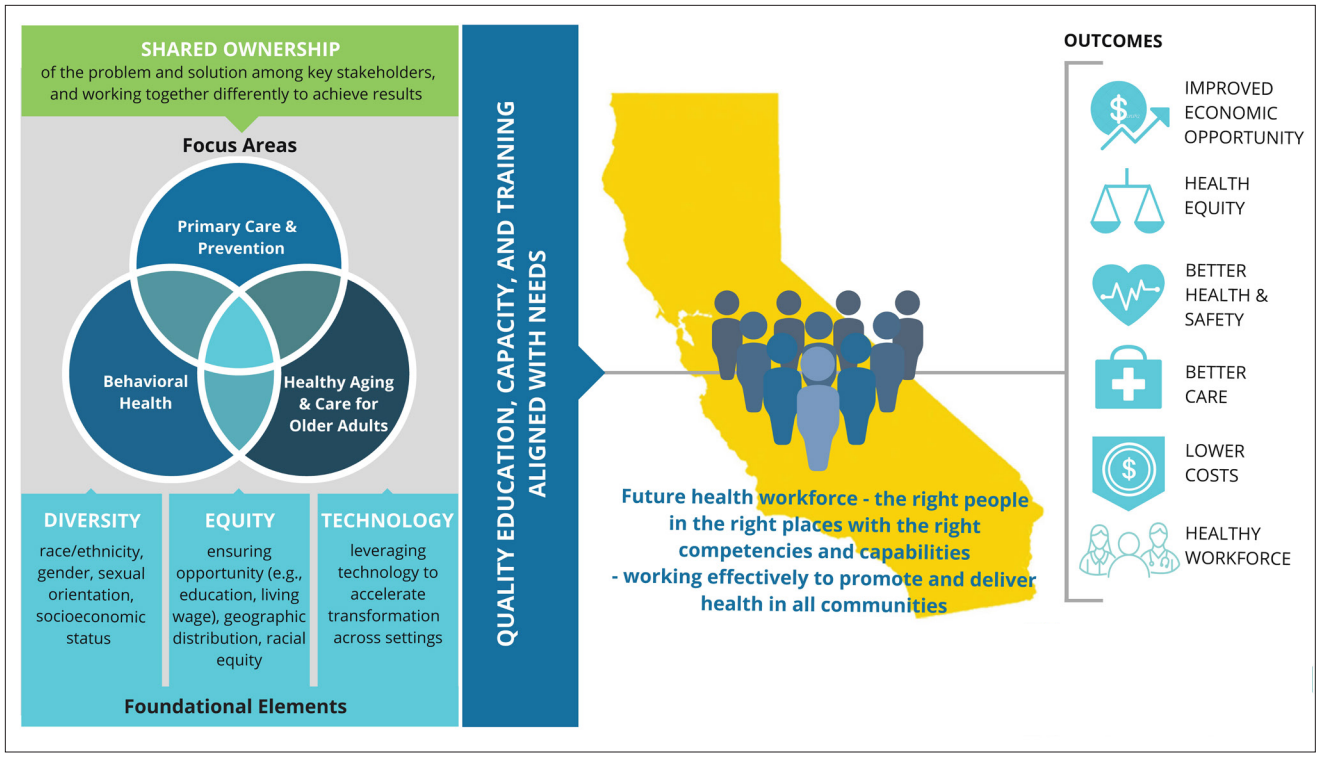
9. **Develop a psychiatric nurse practitioner program that recruits from and trains providers to serve in underserved rural and urban communities** to help address access gaps in behavioral health by treating over 350,000 patients over five years. (Recommendation 3.3)
10. **Scale the engagement of community health workers, *promotores*, and peer providers through certification, training, and reimbursement,** broadening access to prevention and social support services in communities across the state. Community health workers and *promotores* (CHW/Ps) and peer providers can help meet increasing demand for team-based integrated primary and behavioral health care, drawing on lived experience to support better outcomes for all and to promote recovery and self-sufficiency for people with mental illness and substance use disorder. (Recommendation 3.4)

Together, the Commission's prioritized recommendations will:

- Grow, support, and sustain California's health workforce pipeline by reaching over 60,000 students and cultivating careers in the health professions.
- Increase the number of health workers by over 47,000.
- Improve diversity in the health professions, producing approximately 30,000 workers from underrepresented communities.
- Increase the supply of health professionals who come from and train in rural and other underserved communities.
- Train over 14,500 providers (physicians, nurse practitioners, and physician assistants), including over 3,000 underrepresented minority providers.
- Eliminate the shortage of primary care providers and nearly eliminate the shortage of psychiatrists.
- Train more frontline health workers who provide care where people live.

Implementation will require a $3 billion investment over a 10-year period: For perspective, that is less than 1% of what Californians are projected to spend across the health care system in 2019 alone.

A 2030 Workforce Plan: Foundational Elements, Focus Areas — and Outcomes



Additional Recommendations

In addition to its 10 priorities for action, the Commission has developed 17 other important recommendations to address critical health workforce needs, for a combined estimated cost of $6 billion. Many of these proposals will help retool California's health workforce to strengthen prevention, improve behavioral health care, and address social determinants of health. Together, these recommendations represent a mix of proven models and bold initiatives and will require a mix of short- and long-term investments.

Although the Commission focused on identifying workforce solutions, its final report acknowledges several other factors that will impact the success of building the health workforce that California needs. For example, without adequate Medi-Cal payment rates, an accelerated shift to value-based payment, effective preparation of K–12 students, and the ability for California to address other "essential conditions," even well-intentioned efforts to address the state's health workforce needs may fall short.

Conclusion: California Must Build the Health Workforce It Needs Now

The Commission recognizes that bolstering California's health workforce is an enormous undertaking. Health care represents almost 12.6% of the state's economy, employing 1.4 million skilled workers across dozens of different, highly technical, and closely regulated fields. A robust and diverse health workforce is also increasingly a matter of public health. The growing mismatch between the size and composition of California's current health workforce, the demographic trends underway, and California's limited educational capacity to close growing shortfalls has created a looming health workforce crisis that the state simply cannot afford.

By strengthening the supply, distribution, and diversity of workers in primary care, behavioral health care, care for older adults, and other emerging areas of need, Californians will receive better access to quality care and experience better health outcomes — whether receiving that care in their homes, community clinics, or medical offices. Students and health professionals from underserved regions and low-income backgrounds will have expanded opportunities and better support to pursue rewarding educations and careers. And, ultimately, California will benefit from a healthier population, with more residents receiving the right type of care from trusted health professionals in their communities.

It's time to invest in, support, and build a healthy, diverse, and robust workforce that all Californians need and deserve. The California Future Health Workforce Commission has set forth a path and set of actionable recommendations for achieving that goal.

FULL REPORT: MEETING THE DEMAND FOR HEALTH

FINAL REPORT OF THE CALIFORNIA FUTURE HEALTH WORKFORCE COMMISSION

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.[1] Although more Californians are covered than ever before, disparities in access to providers and use of services are pervasive — particularly for those with Medi-Cal[2] and those lacking health insurance.[3] 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[4]
- 41% fewer psychiatrists[5] and 11% fewer psychologists, marriage and family therapists, clinical counselors, and social workers than needed[6]
- A shortage of 600,000 home care workers[7]

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 (MAs), 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.[8] 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.[9]

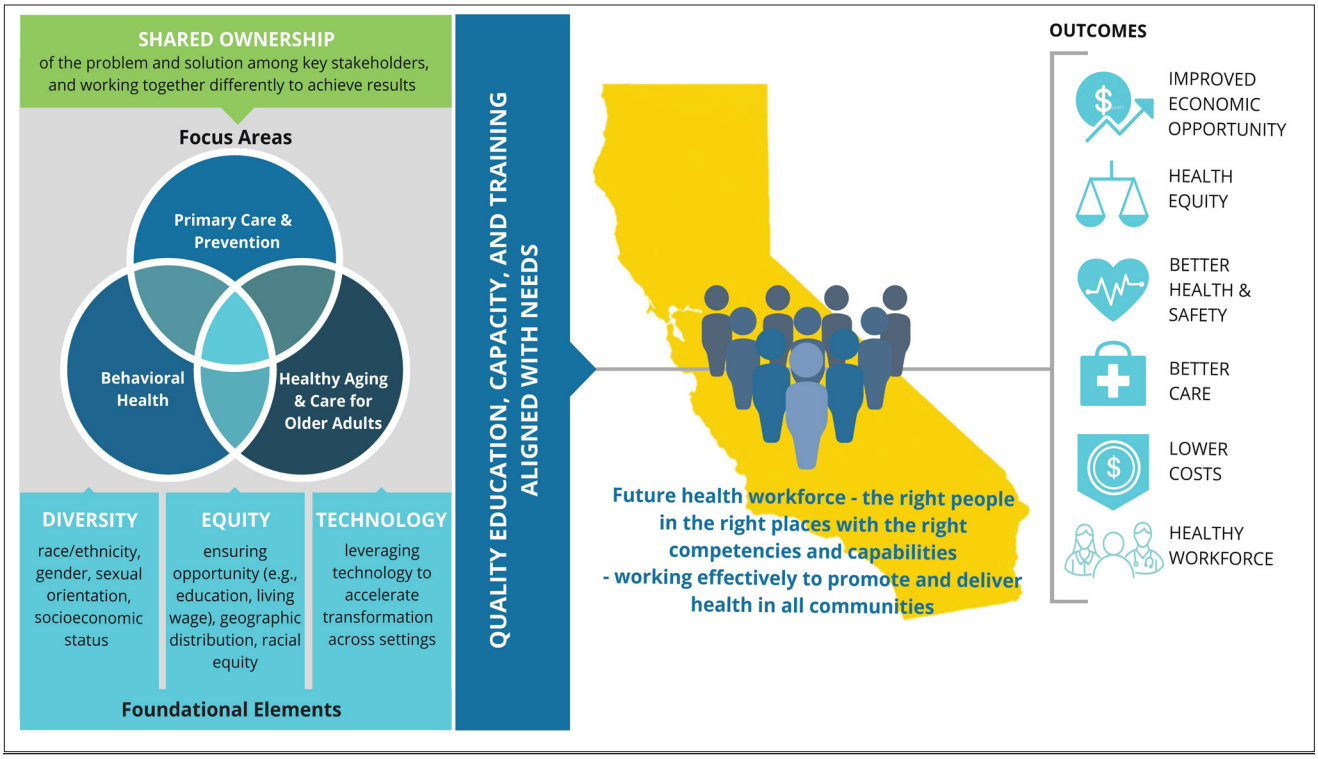
Although the consequences of the growing workforce challenges will fall most heavily on people in rural and inner-city areas, those with mental illness or addiction, those lacking English proficiency, those without health coverage, and the elderly, all Californians will likely be affected. Both professional 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.[10]

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.

Figure 1. Foundational Elements, Focus Areas, and Outcomes



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.[11] 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.[12] 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.[13]

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 per year; an associate's degree adds $750,000 in lifetime earnings, to $43,200 per 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 per 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.

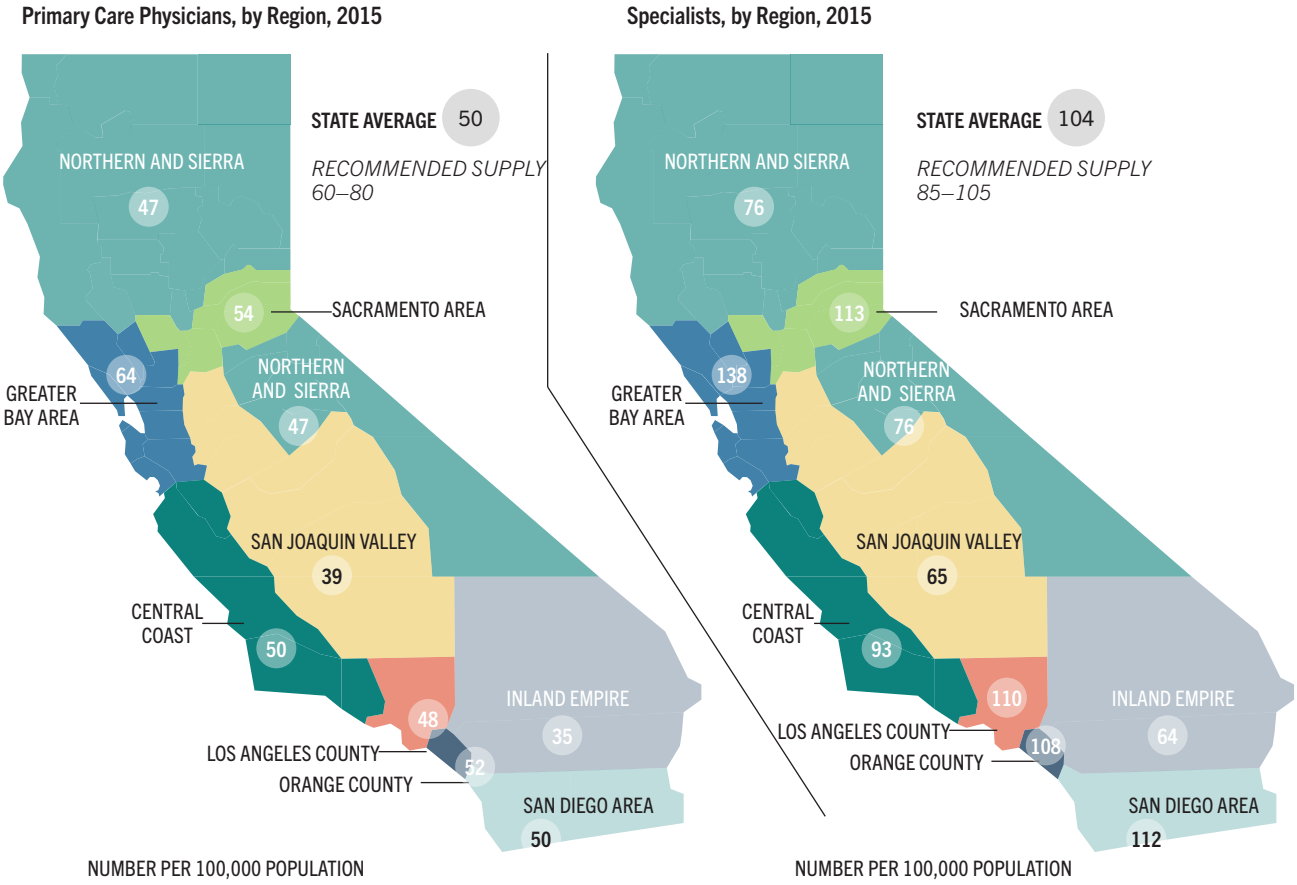
Primary care teams are most commonly led by physicians. California is experiencing acute and growing primary care physician supply and distribution challenges. The Council on Graduate Medical Education (COGME), part of the US Department of Health and Human Services, studies physician workforce trends 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

Figure 2. Supply of Primary Care Physicians and Specialists in California, by Region, 2015



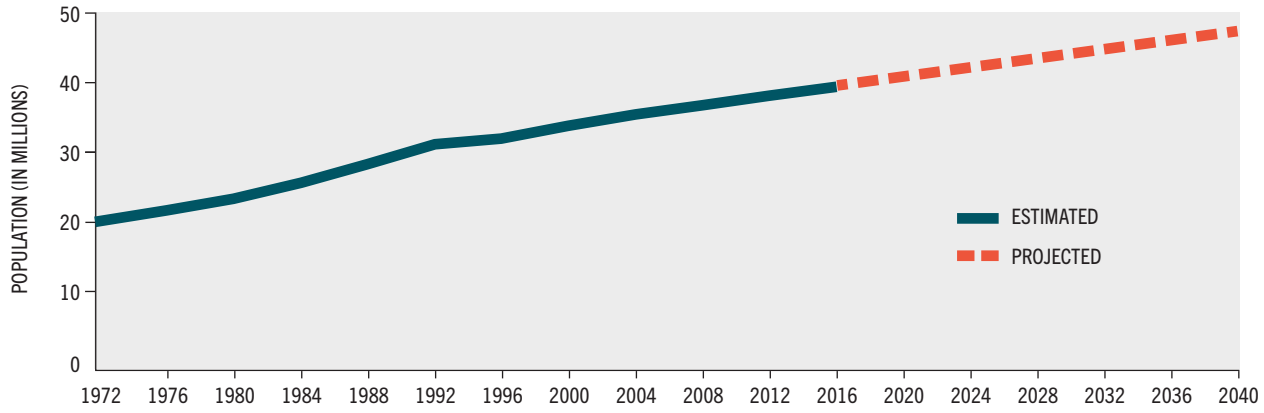
Source: *California Physicians: Quick Reference Guide*, CHCF, 2017, www.chcf.org/wp-content/uploads/2017/12/PDF-CaliforniaPhysiciansQRG2017.pdf (PDF).

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 on page 15).[25] 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.[26] Approximately 70% of those living in HPSAs are Latino, African American, and Native American, raising serious concerns about the impact of California's workforce shortage on health equity.[27] 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.[28] 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.[29] 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.[30]

Some areas are experiencing supply challenges with other members of the primary care team, such as medical assistants. In California, the number of MAs is expected to grow much faster than the average growth rate for all

Figure 3. California's Population Will Continue to Grow



Source: "California's Future: Population," Public Policy Institute of California, 2018, www.ppic.org/wp-content/uploads/r-118hj2r.pdf (PDF).

Note: Population as of July of each year.

occupations. Jobs for MAs are expected to increase by 29.2%, or 24,800 jobs between 2016 and 2026.[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. More than 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.[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.[33] 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.[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.[35]

More than 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.

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.[36] The California Department of Public Health estimates that two-thirds of its workforce will retire in the next five years.[37] Both state and local public health agencies face increasing competition with the private sector, which provides higher pay, and amenities such as updated technology.[38]

Local public health agencies have an increasing demand for skilled professionals in areas such as epidemiology to better design and monitor evidence-based

CASE STUDY

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 the San Joaquin Valley 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 San Joaquin Valley will also face a shortage of RNs.‡‡

* Improving Health Care Access in the San Joaquin Valley: A Regional Approach Through Collaboration and Innovation, University of California (UC), April 2018, www.ucop.edu/uc-health/_files/uc-sjv-final-report-april-2018.pdf (PDF).

† UC, Improving Health Care Access.

‡ UC.

** UC.

†† Janet Coffman, Timothy Bates, and Igor Geyn, Current & Future Health Professions Workforce Needs in the San Joaquin Valley, Healthforce Center at UCSF, July 2017, www.ucop.edu/uc-health/_files/sjv-health-workforce-report-july-2017.pdf (PDF).

‡‡ Joanne Spetz, Janet Coffman, and Timothy Bates, The San Joaquin Valley Registered Nurse Workforce: Forecasted Supply and Demand, 2016-2030, Healthforce Center at UCSF, March 26, 2018, https://healthforce.ucsf.edu/publications/californias-san-joaquin-valley-faces-nurse-shortfall.

interventions that optimize use of available resources. A 2005 study found that only 25% of local public health agencies employed people with epidemiological expertise;[39] 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.[40] Moreover, approximately 95% of current funding for government public health is tied to categorical programs,[41] 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.[42] In 2016, 14% of California adults were diagnosed with a depressive disorder.[43] About two-thirds of California adults with a mental illness and two-thirds of adolescents with major depressive episodes do not receive treatment.[44] 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

Two-thirds of California adults with a mental illness do not receive treatment.

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.[45] Studies suggest that more timely access to outpatient treatment and specialized psychiatric crisis services could reduce the need for inpatient care.[46]

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.[47] 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.[48] 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.[49] However, timely access remains a challenge; only two of California's 56 county mental health plans met time- and network-access requirements in 2017.[50]

These workforce projections related to behavioral health providers are cause for concern, as 45% of psychiatrists and 37% of psychologists are over age 60,[51] 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,

Only 2 of California's 56 county mental health plans met time- and network-access requirements in 2017.

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,[52] and PCPs now provide over half of all mental health treatment in this country,[53] 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.[54]

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,

Primary care physicians now provide over half of all mental health treatment, yet they receive limited formal psychiatric education or experience during their training.

and self-care. Over 2.7 million students attend colleges and universities in California.[55] An estimated 18.5% of US college students have clinically significant depression, and 16.7% have one or more clinically significant anxiety disorders.[56] These disorders increase the risk for academic disengagement, behavioral problems, and suicide.[57] Suicide is the second leading cause of death among college students.[58] 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.[59] Unlike previous generations, this cohort of older adults is more likely to be single or childless, live alone, and live in poverty.[60] In the same period, the population of older adults facing self-care difficulties will double to approximately one million.[61] Fifty percent of older adults will be widowed, divorced or separated, or never have married,[62] 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.[63]

National survey data indicate that 76% of older adults prefer to age in place rather than transition to institutional care.[64] For older adults to age in place with

76% of older adults prefer to age in place rather than transition to institutional care — and most will need assistance with social, medical, or household activities.

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.[65] 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.[66]

About one-fourth of California's 65+ population has multiple chronic conditions,[67] 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.[68] 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

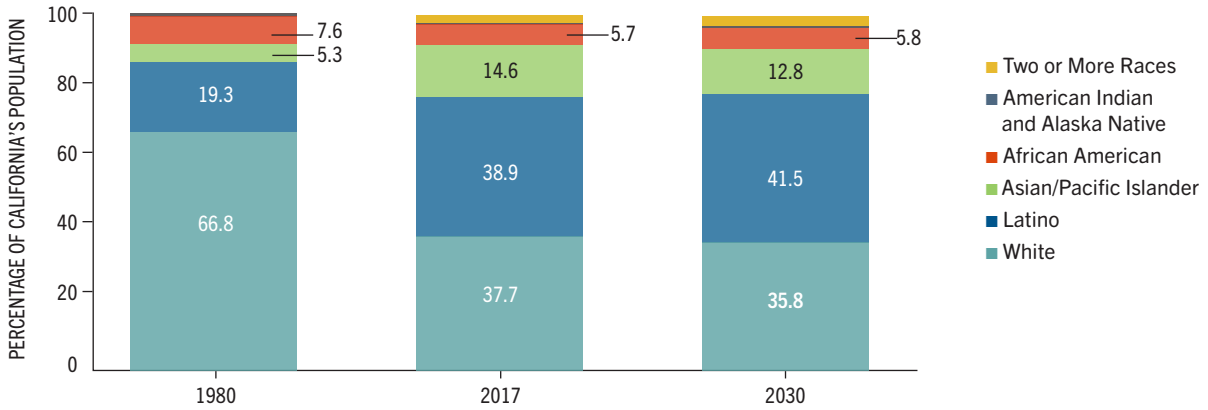
Greater diversity among health professionals is associated with improved access to care for people who are racial and ethnic minorities, enhanced provider choice and patient satisfaction, better patient-provider communication, and better educational experiences for students while in training.[69] In addition, it is well documented that physicians from minority backgrounds are more likely to practice in HPSAs[70] and to care for minority, Medicaid, and uninsured people than their counterparts.[71]

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.

By 2030, communities of color will make up over 65% of California's population,[72] 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.[73] The distribution of groups is presented in Figure 4 on page 19. 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.

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

Figure 4. Latinos Have Become California's Largest Ethnic Group



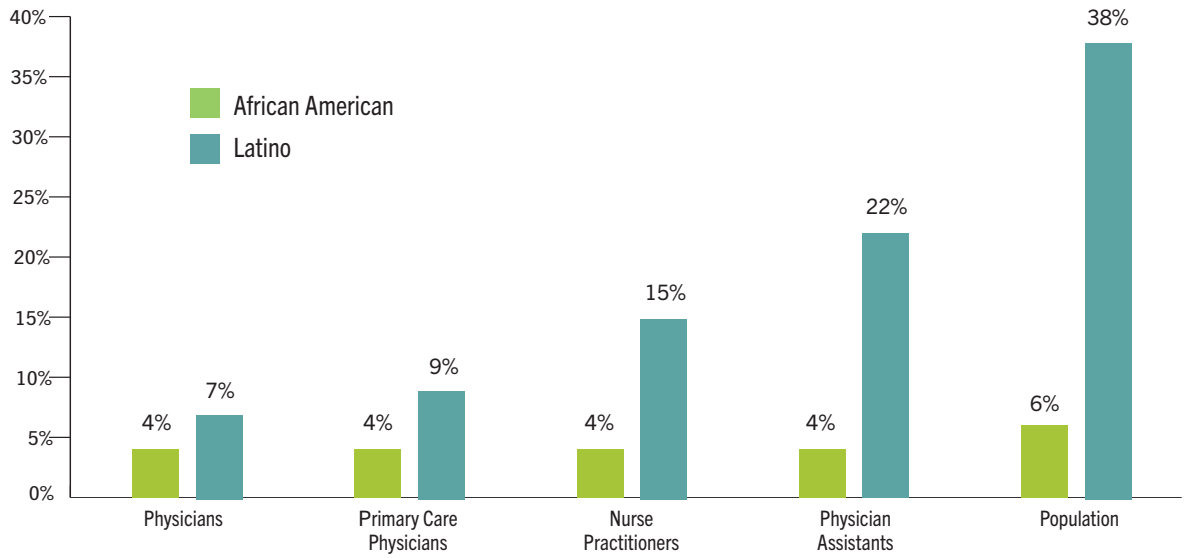
Sources: "Annual Estimates of the Residential Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010, to July 1, 2016," US Census Bureau; and California Department of Finance projections; "California's Future: Population," Public Policy Institute of California, 2018, www.ppic.org/wp-content/uploads/r-118hj2r.pdf (PDF).

Californians have limited English proficiency and need access to multilingual providers, who are currently underrepresented in the workforce.[74] Spanish is the most underrepresented language among health care providers, with only 62.1 Spanish-speaking physicians for every 100,000 people who only speak Spanish; by contrast, there are 344 English-only-speaking physicians for every 100,000 people who only speak English.[75]

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 5.

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.[76]

Figure 5. Diversity of Clinicians Compared to California's Population, 2015



Source: California's Primary Care Workforce: Current Supply, Characteristics, and Pipeline of Trainees, Healthforce Center at UCSF, 2017, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/Research-Report_CA-Primary-Care-Workforce.pdf (PDF).

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.[77] The University of California (UC) alone operates the largest health sciences instructional program in the nation, enrolling more than 15,000 students annually.[78] 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.[79]

California is the most populous state in the nation yet is has the third-lowest medical school enrollment rate per capita. In fact, the state outsources medical education: Over 60% of Californians who attended medical school in 2017 did so out of state.

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).[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.[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 to 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.[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.[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.[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.[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,[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,[87] whose economic resources are lower, on average, than those of other students.[88] 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%.[89]

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.[90]

To attract a more diverse health care workforce, California policymakers should consider a range of options to make medical school more affordable.[91] There is significant evidence that loan repayment is effective for recruiting practitioners into underserved and rural areas.[92] 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.[93] 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.[94] 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.[95] From 1997 to 2012 the annual number of physicians graduating from primary care residencies in California has steadily declined.[96] 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 A1, 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.[97] 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.

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).[98] 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.

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.

* Timothy Bates and Joanne Spetz, *California Nurses: Taking the Pulse,* California Health Care Foundation, August 2017, www.chcf.org/publication/california-nurses-taking-the-pulse/.

† *California Nurse Education Initiative Annual Report, 2009,* State of California, March 2010, www.labor.ca.gov/pdf/NEI_Annual_Report_2009.pdf (PDF).

‡ State of California, *California Nurse Education*.

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.[99] 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 propriety 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.[100] 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 was $97 billion in FY 2017-18. Medi-Cal accounts for 15% of total General Fund expenditures making Medi-Cal the second largest budget outlay after K-14 education.[101] 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%.[102] 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.‡

* *Results from the 2015 National Survey on Drug Use and Health: Detailed Tables, Substance Abuse and Mental Health Services Administration* (SAMHSA), September 8, 2016, www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs-2015/NSDUH-DetTabs-2015/NSDUH-DetTabs-2015.pdf (PDF).

† 2015 National Survey on Drug Use and Health, SAMHSA.

‡ MaryBeth Musumeci and Erica Reaves, *Medicaid Beneficiaries Who Need Home and Community-Based Services: Supporting Independent Living and Community Integration, Kaiser Family Foundation*, March 2014, www.kff.org/medicaid/report/medicaid-beneficiaries-who-need-home-and-community-based-services-supporting-independent-living-and-community-integration/.

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 US Health and Human Services (HHS) 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 four-year-olds attended a pre-K program in 2016, and 69% of those were eligible for public subsidies.[128] 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 four-year-olds accessed pre-K programs in 2016, while the percentage was 42% in Tulare County.[129]

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.[130] 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.[131] 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.[132]

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.[133] 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.[134] 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 27 actionable recommendations to operationalize them. Figure 6 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.

Figure 6. The Commission's Vision for California's Health Workforce

By 2030, California's health workforce will reflect the diversity of the state and have the capacity and competencies to:

- Improve health, equity, and well-being in all communities.
- Provide accessible, affordable, high-quality services at the right time, at the right level, and in the right places.
- Transform health care delivery to address social needs and improve health outcomes across the life course.

Table 1. Key Factors Addressed by Each Strategy

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.
■ Expand career awareness and assessment ■ Support academic preparation and entry ■ Make health professions education and training financially and logistically feasible ■ Provide incentives and support systems for practice in underserved communities	■ Expand educational capacity, emphasizing primary care and regions with significant shortages ■ Accelerate training and deployment of health professionals in priority professions and regions ■ Recruit, select, and support students with characteristics and capabilities needed in the health workforce ■ Prepare students with essential skills necessary for optimal care (e.g., social determinants of health) ■ Expand online learning ■ Increase the number of primary care and psychiatric residencies, particularly in outpatient settings and underserved communities	■ Expand roles and contributions of frontline workers ■ Build skills and capacity of existing providers ■ Increase investments in primary care ■ Increase investments in prevention ■ Understand challenges facing providers, and design targeted solutions

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 A1. 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.

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

Table 2. Strategy 1 Approaches, Recommendations, and Intended Outcomes

Approach	Recommendations	Intended Outcome
Expand career awareness and assessment	1.1 Expand pipeline programs 1.2 College student support 1.7 California Health Corps 1.8 College student mental health 1.9 K–12 and mental health	Larger and more diverse pool of motivated candidates for health careers, particularly priority professions and those in underserved regions.
Support academic preparation and entry	1.1 Expand pipeline programs 1.2 College student support 1.4 Postbaccalaureate 1.7 California Health Corps 1.8 College student mental health	A larger, more qualified, and more diverse candidate pool who gain entry to California health professions schools.
Make health professions education and training financially and logistically feasible	1.3 Scholarship program 1.5 Financial support for behavioral health	Increased number and diversity of California students completing health professions education in primary care, public health, behavioral health, and aging.
Provide incentives and support systems for practice in underserved communities	1.3 Scholarship program 1.5 Financial support for behavioral health 1.6 Primary care loan repayment	Increased number and diversity of providers practicing in primary care, public health, behavioral health, and aging in underserved communities and safety-net settings.

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 above.

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 A1.

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, including community college students, from underrepresented regions and backgrounds to pursue health careers.

The recommendation is to fund and establish a California Health Career Opportunity Program (HCOP) and associated HCOP partnerships, which will support more than 4,800 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, NP, RN, PA, Master of Public Health (MPH), and Master of Social Welfare (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.

* Thomas Bodenheimer and Christine Sinsky, "From Triple to Quadruple Aim: Care of the Patient Requires Care of the Provider," Annals of Family Medicine 12, no. 6 (Nov./Dec. 2014): 573–76, doi:10.1370/afm.1713.

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, 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, and educational capacity. This initiative includes three areas of activity: (1) increase support for loan forgiveness and stipend programs 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 a 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 eight recommendations for Strategy 2, as outlined in the table on the next page. 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.

The Strategy 2 recommendation are briefly summarized below. The full text of the recommendations and an independent assessment of impact are available in Appendix A1.

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 funding sources that may not be reliable or sustainable 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. Permanent state funding for the ongoing steady enrollment of medical students in UC PRIME will assure long-term continuity and sustainability of these programs.

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

Approach	Recommendations	Intended Outcome
Expand educational capacity, emphasizing primary care and regions with significant shortages	2.1 PRIME 2.2 Primary care and psychiatry residencies 2.4 Medical school enrollment growth 2.5 Charles R. Drew University	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 Medical school enrollment growth 2.8 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 Medical school enrollment growth 2.5 Charles R. Drew University	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 2.6 Public health schools and health departments 2.7 Social determinants of health 2.8 Community colleges	Graduates prepared for effectiveness.
Expand online learning	2.4 Medical school enrollment growth 2.8 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	2.2 Primary care and psychiatry residencies	Increased number of primary care providers, particularly in safety-net settings and underserved communities.

2.2 Expand the number of primary care physician and psychiatry residency positions.

This recommendation calls for both the expansion of primary care and psychiatry residency programs and the establishment of new 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 and other underresourced communities 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 in an underserved area of California for four years; 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 medical school enrollment at public institutions for the benefit of medically underserved areas.

This recommendation would (1) expand the existing three-year MD program at UC Davis, provide full-tuition scholarships to graduates

of the UC Davis program who agree to practice in underserved areas, and establish two three-year medical school programs in rural areas of California; (2) secure increased, permanent operating resources to increase enrollment at the UC Riverside (UCR) medical school and the residency programs affiliated with UCR; and (3) establish and expand a branch campus of the UCSF School of Medicine in the San Joaquin Valley that would build on the existing UCSF Fresno program.

2.5 Develop a four-year medical education program at Charles R. Drew University of Medicine and Science (CDU).

This recommendation calls for an unspecified entity to fund a planning grant to position Charles R. Drew University of Medicine and Science 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 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.

2.7 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.

2.8 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.

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

Approach	Recommendations	Intended Outcome
Expand roles and contributions of frontline workers	3.2 Home care workers 3.4 Community health workers and peer providers	Increased capacity to provide timely access to quality care in a broad spectrum of settings.
Build skills and capacity of existing providers	2.1 Role of nurse practitioners 3.3 Psychiatric nurse practitioner program 3.5 Train PCPs in behavioral health 3.6 Health technology center	Increased capacity and effectiveness of existing health care providers, and improved access to care.
Increase investments in primary care	3.8 Primary care spending targets 3.10 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 and peer providers 3.9 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	3.6 Health technology center 3.7 Provider burnout	Increased student and provider well-being and retention.

Five approaches were pursued in the 10 recommendations for Strategy 3, as outlined in the table on the next page.

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 A1.

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, *promotores*, and peer providers through certification, training, and reimbursement.

This recommendation proposes: (1) a three-year pilot project to create a formal certification

process for CHW/P training programs, expand CHW/P training programs, and modify reimbursement mechanisms to increase employment opportunities for CHW/Ps; and (2) 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.

3.5 Strengthen training for primary care providers on behavioral health and wellness using train-the-trainer modalities.

This recommendation calls for expanded participation in two 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.

3.6 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.

3.7 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.

3.8 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.

3.9 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.

3.10 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.

Impact Statement for Prioritized Recommendations

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 27 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 by 2030.

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, including community 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 and psychiatry residency positions (Recommendation 2.2).
6. Recruit and train students from rural areas and other underresourced communities 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, *promotores*, and peer providers through certification, training, and reimbursement (Recommendation 3.4).

Refer to Appendix A1 for a full listing of recommendations.

Objective and Scope of Impact Analyses

Healthforce Center at UCSF and Health Management Associates evaluated each of the 27 Commission recommendations. The analyses offer unbiased and realistic estimates of the potential impact to California's health workforce, should the recommendations be implemented. The analyses did not include assessments of operational feasibility or funding availability.

Impact analysis findings are presented in the Main Takeaways and Summary sections of each recommendation in Appendix A1. Full impact assessments can be found on the Commission website at https://futurehealthworkforce.org/.

Impact Takeaways for 10 Priority Recommendation

Recommendation	Anticipated Impact by 2030	Est. Cost (millions)
1.1 Expand and scale pipeline programs to recruit and prepare students from underrepresented and low-income backgrounds for health careers.	Prepares approximately 7,000 underrepresented minority students, increasing California's health workforce by 5,500–5,700 over 10 years.	$62.0
1.2 Recruit and support college students, including community college students, from underrepresented regions and backgrounds to pursue health careers.	Supports approximately 53,000 college students, adding at least 25,500 new health care workers over 10 years, including 20,000–23,000 from underrepresented minority communities.	$159.0
1.3 Support scholarships for qualified students who pursue priority health professions and serve in underserved communities.	Provides full-tuition scholarships for 3,810 low-income, first-generation, and underrepresented health professions students over 10 years (1,707 allopathic and osteopathic physicians, 696 nurse practitioners, 152 physician assistants, 325 public health professionals, and 930 social workers).	$479.8
2.1 Sustain and expand the PRIME program across UC campuses.	Adds 630 graduates from UC medical school PRIME programs over 10 years.	$93.5
2.2 Expand the number of primary care physician and psychiatry residency positions.	Adds 1,872 primary care physicians and 2,202 psychiatrists over 10 years.	$1,562.0
2.3 Recruit and train students from rural areas and other underresourced communities to practice in community health centers in their home region.	Increases medical school graduates by 280–560 over 10 years.	$64.4
3.1 Maximize the role of nurse practitioners as part of the care team to help fill gaps in primary care.	Adds 7,000 nurse practitioners, of whom 5,500 would practice in primary care. Increases rural distribution, access to services, reduces avoidable ED visits and hospitalizations, and reduces costs of primary care.	$462.2*
3.2 Establish and scale a universal home care worker family of jobs with career ladders and associated training.	Increases supply, capacity, and retention of home care workers over four years.	$7.0
3.3 Develop a psychiatric nurse practitioner program that recruits from and trains providers to serve in underserved rural and urban communities.	Adds 300 psychiatric mental health nurse practioners over five years.	$24.6
3.4 Scale the engagement of community health workers, *promotores*, and peer providers through certification, training, and reimbursement.	Establishes certification for education programs, standardizes training, and addresses reimbursement over 10 years, resulting in increased supply of workers focused on prevention and behavioral health.	$68.0
Total cost		**$2,982.5**

* The cost estimate for this recommendation is a range; this figure is the high end of the range.

Collective Impact of Investments over a Decade

The Commission's prioritized recommendations would:

1. **Grow, support, and sustain California's health workforce pipeline by reaching an estimated 60,000 students and cultivating pursuit of the health professions:**
   - Provide mentorship, academic enrichment, and career support to an estimated 53,000 college students, targeting students from economically disadvantaged and underrepresented backgrounds to become competitive applicants for health professions schools.
   - Create a statewide pipeline for middle school, high school, and college students to generate interest in the health professions, reaching an estimated 7,000 underrepresented minority students over 10 years.
2. **Increase the number of health workers by over 47,000, and improve diversity in the health professions by reducing financial barriers to training and expanding capacity of health professions training programs:**
   - Train approximately 30,000 workers from underrepresented communities, including those who are low income, first generation, bilingual, and/or from medically underserved areas.
   - Train over 14,500 providers, including allopathic and osteopathic physicians, nurse practitioners, and physician assistants.
3. **Eliminate the primary care and psychiatry shortage:**
   - Expand primary care residencies to add 1,872 primary care physicians and expand NP education to add 5,500 primary care NPs, eliminating the anticipated shortage of primary care providers by 2028.
   - Expand psychiatric residencies to add 2,202 psychiatrists, meeting 75% of the projected demand by 2029, augmented by an additional 300 psychiatric nurse practitioners combined with other mental health professionals and primary care providers.
4. **Train more frontline health workers from underserved communities who provide care where Californians live:**
   - Increase supply of health professionals who come from and train in rural and other underserved communities.
   - Increase supply, capacity, and retention of home care workers.
   - Stimulate supply of community health workers, promotores, and peer providers.

The impact assessments are based on several assumptions. First, concurrent investment in all priorities would increase the number of primary care providers, create synergy, and help eliminate projected workforce shortages. Second, using published evidence and leveraging lessons from past and current efforts would help ensure that programs are effective. Third, bold initiatives assume favorable state and federal policy environment for implementation; if successful, efforts would offer important strategies for shaping the workforce of the future. Of note, unexpected events including disruptions in the economy and health care could affect recruitment of, demand for, and distribution of workers.

Endorsement

Commissioners unanimously endorsed the report and its recommendations and priorities with the following exceptions:

- Barbara Ferrer, Director, Los Angeles County Department of Public Health, dissented on Recommendations 2.4 and 2.5 (see Appendix A2).
- Alma Hernandez, Executive Director, SEIU California, abstained on Recommendation 3.2.
- Michael Wilkening, Secretary, California Health and Human Services Agency, abstained from the endorsement process.

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.[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.

Total Cost

The cost of the 10 priority recommendations is $3 billion over 10 years — less than 1% of what Californians are projected to spend across the health care system in 2019 alone.[137] The cost of all 27 recommendations is $6 billion over 10 years. A summary of the time frame and cost for each of the recommendations is provided in Appendix A1, and a detailed cost table is included in the text of each of the 27 recommendations.

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, and 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.

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APPENDIX A1: RECOMMENDATIONS

FINAL REPORT OF THE
CALIFORNIA FUTURE HEALTH
WORKFORCE COMMISSION

FEBRUARY 2019

Recommendations Summary Table

	Strategy 1: Increase opportunity for all Californians to advance in the health professions.	Timeframe (Years)	Total Cost ($ Millions)
1.1	Expand and scale pipeline programs to recruit and prepare students from underrepresented and low-income backgrounds for health careers.	10	**$62.0**
1.2	Recruit and support college students, including community college students, from underrepresented regions and backgrounds to pursue health careers.	10	**$159.0**
1.3	Support scholarships for qualified students who pursue priority health professions and serve in underserved communities.	10	**$479.8**
1.4	Increase postbaccalaureate program slots for students reapplying to medical school from underserved communities.	10	**$26.0**
1.5	Expand funding for educational capacity, stipends, and scholarships to strengthen the size, distribution, and diversity of the behavioral health workforce.	10	**$341.5**
1.6	Expand and strengthen loan-repayment programs for primary care clinicians practicing in safety-net settings and underserved communities.	10	**$353.8**
1.7	Create a California Health Corps to engage students, health workers, and retirees in addressing health workforce gaps.	3	**$4.0**
1.8	Assess, treat, and improve college student mental health and promote behavioral health careers.	3	**$8.6**
1.9	Implement a statewide prevention and early intervention mental health and workforce development model for K–12 students.	5	**$2.5**
	Strategy 2: Align and expand education and training to prepare health workers to meet California's health needs		
2.1	Sustain and expand the PRIME program across UC campuses.	10	**$93.5**
2.2	Expand the number of primary care physician and psychiatry residency positions.	10	**$1,562.0**
2.3	Recruit and train students from rural areas and other underresourced communities to practice in community health centers in their home region.	10	**$64.4**
2.4	Expand medical school enrollment at public institutions for the benefit of medically underserved areas.	10	**$755.3***
2.5	Develop a four-year medical education program at Charles R. Drew University of Medicine and Science.	3	**$1.0**
2.6	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.	7	**$15.5**
2.7	Integrate training on social determinants into all health professions training programs.	4	**$21.8**
2.8	Expand the role of the California Community Colleges system and its new online college in training the future health workforce.	TBD	**$0.1**
	Strategy 3: Strengthen the capacity, effectiveness, well-being, and retention of the health workforce		
3.1	Maximize the role of nurse practitioners as part of the care team to help fill gaps in primary care.	10	**$462.2***
3.2	Establish and scale a universal home care worker family of jobs with career ladders and associated training.	4	**$7.0**
3.3	Develop a psychiatric nurse practitioner program that recruits from and trains providers to serve in underserved rural and urban communities.	5	**$24.6**
3.4	Scale the engagement of community health workers, *promotores*, and peer providers through certification, training, and reimbursement.	3	**$68.0**
3.5	Strengthen training for primary care providers on behavioral health and wellness using train-the-trainer modalities.	10	**$44.0**
3.6	Establish a California Health Workforce Technology and Data Center to support the adoption of technologies that increase access to quality care.	2	**$2.0**

3.7	Assess the well-being of health professions students and providers, and develop a statewide action plan to proactively address burnout.	1	**$0.9**
3.8	Establish primary care spending targets and requirements for public and private payers.	4	**$1.1**
3.9	Build capacity of local public health agencies to support collaborative community health improvement through state-hospital matching funds.	3	**$33.5**
3.10	Engage health plans in regional workforce partnerships and initiatives.	10	**$1,401.0**

*The cost estimate for this recommendation is a range; this figure represents the high end of the range.

Contents

Bolding indicates recommendations identified as priorities.

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

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

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

3.10 Engage health plans in regional workforce partnerships and initiatives.

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. For more information on Healthforce Center and Health Management Associates, refer to Appendix B: Acknowledgments.

STRATEGY: INCREASE OPPORTUNITY FOR ALL CALIFORNIANS TO ADVANCE IN THE HEALTH PROFESSIONS.

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

Main Takeaway

Implementation of the proposed four-component strategy could result in as many as 5,500–5,700 underrepresented minority professionals joining the California health care workforce during a 10-year period. The program will cost $62 million over 10 years, including $1.2 million for capacity building, $50 million for program funding, $3 million for administration, $3.75 million for the Center for Pipeline and Inclusive Excellence, and $2.25 million for the California Health Professions Consortium Statewide Network. If the target numbers are achieved, cost per person would be approximately $11,000.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

An urgent and growing need exists for California to expand its pool of talented, diverse health workers and to connect them more effectively to jobs in all communities. Over the next decade it is projected that California will have 4,100 fewer primary care providers than it will need.[1] More than seven million Californians live in designated Health Professional Shortage Areas, which include some of the state's largest and fastest-growing regions (e.g., Los Angeles, Central Valley, and Inland Empire).[2] And while California is one of the most ethnically diverse states in the US, Latinos, African Americans, Native Americans, and some Asian populations are severely underrepresented in the health professions,[3] and the state's health workforce is increasingly unable to meet the needs of an estimated 7.3 million patients with limited English proficiency.[4]

Rationale

Health pipeline programs[5] provide middle school, high school, and college students with mentorship, as well as with academic, career, and psychosocial support, to successfully pursue health careers. Health pipeline programs recruit, prepare, and provide hope and opportunity to students from underrepresented and low-income backgrounds. These programs also level the playing field by providing role models, information, and connections that students from more privileged backgrounds already have in their daily lives. A systematic review conducted by the federal Health Resources and Services Administration in 2009 of health pipeline program evaluation studies found pipeline interventions are associated with positive outcomes for racial/ethnic minority and disadvantaged students on several meaningful metrics, including academic performance and the likelihood of enrolling in a health professions school.[6]

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4. P. Hsu et al., *California's Language Concordance Mismatch: Clear Evidence for Increasing Physician Diversity*, UCLA Latino Policy & Politics Initiative, September 2018, https://latino.ucla.edu/wp-content/uploads/2018/09/UCLA-AltaMed-Language-Concordance-Brief-2018.pdf (PDF).
5. Health pipeline programs are nondegree granting programs that offer one or more of the following components to students, recent graduates, or opportunity youth to enhance their education and health career success: academic preparation and support; psychosocial support; college and career readiness; health career exposure and experience; work-based learning (internships, shadowing, projects, speakers etc.); parental engagement; mentorship; and networking.
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A 2017 inventory funded by the California Health Care Foundation identified over 280 health pipeline programs in California serving all educational levels and regions of the state — many for 10 or more years.[7] Due to funding limits, privacy constraints for legal minors, and the challenge of tracking students over long periods of time, documentation of impacts to date are generally limited to internal data — often on near-term impacts. Those internal data, however, often document success. One pipeline program, Doctors Academy at UCSF Fresno, has supported high school students for the last 20 years; 100% of those students have graduated from high schools at which the average graduation rate is under 50% — and all of them have gone on to attend four-year colleges. Doctors Academy students have high college graduation rates, and many have entered into health professions schools in medicine, nursing, public health, behavioral health, pharmacy, and social work.[8] The majority have returned to practice in the Central Valley.

Despite their promising results, California health pipeline programs do not have the scale to measurably increase health workforce diversity. Programs operated within universities, health professions schools, or health employers are often promoted as signature programs, but too often have not been institutionalized or sufficiently funded. In recent decades, private philanthropic organizations such as The California Wellness Foundation and The California Endowment have provided funding for programs across the state that emphasize early intervention and support of young people who are underrepresented in the health professions. While this support has provided committed leaders with the temporary means to keep programs in place, dedicated funding and technical assistance to stabilize, sustain, and scale these programs is needed. Strategic investment in early interventions to address inequities in opportunity in low-income communities represents a critically important action to build a future health workforce that reflects the increasing diversity of our communities.

Proposed Action

To implement a four-component strategy over a 10-year period to support model health pipeline programs. In this context, "model" programs are those that have demonstrated effectiveness and/or have received recognition, have secured funding from multiple sources, and are at least five years old.

1. **Build capacity:** In the first five years, 60 programs (12 per year) would be selected to participate in a "boot camp" to develop business plans to meet scale, sustainability, and impact goals. Selection criteria ensure a focus on programs that would benefit substantially from technical assistance.
2. **Sustain and scale:** In years 2–10, 10 programs per year (50 total) that "graduate" from the boot camp would receive up to $200,000 each over five years ($1 million) in core support to stabilize, sustain, and scale efforts.
3. **Establish Center for Pipeline and Inclusive Excellence (CPIE):** CPIE would identify best practices from established and successful model programs and disseminate, scale, and replicate those practices throughout the University of California (UC), California State University, and community college systems, and in precollege and community-based settings.[9] Researchers would develop approaches to evaluation that increase accountability and the validation of effective programs. CPIE would also conduct an evaluation over the course of the five-year pilot project to assess its effectiveness and impact and to inform decisions regarding future investment. CPIE would also advance and accelerate institutional partnerships, tailored student support and faculty engagement, and institutional change recommended by the UCSF Healthforce Center to increase underrepresented minority (URM) admissions to health professions schools.[10]
4. **CHPC Statewide Network:** The California Health Professions Consortium (CHPC) was established in 2005 to engage and share innovations among pipeline programs throughout the state. Work to date has enhanced

7. "Search Pathway Programs," California Health Professions Consortium, n.d. https://www.calhpc.org/files/Career%20Pipeline%20Program.xlsx (XLS).
8. Internal Assessment provided by UCSF Fresno Latino Center.
9. Proposed by Dr. John Matsui at UC Berkeley, who has led the model Biology Scholars Program for 26 years.
10. Christopher Toretsky, Sunita Mutha, and Janet Coffman, *Breaking Barriers for Underrepresented Minorities in the Health Professions*, Healthforce Center at UCSF, July 30, 2018, https://healthforce.ucsf.edu/publications/breaking-barriers-underrepresented-minorities-health-professions.

programs, provided opportunities to students as they advance across educational and career paths, and led to numerous successful partnerships. CHPC has built strong connections with health professions schools and employers and created a platform for shared advocacy for pipeline programs, students, and health workforce diversity. With stable funding, CHPC could sustain and grow a statewide pipeline network and achieve intended results. CHPC could also create and/or partner with networks of health professionals from backgrounds similar to students' to assist with recruitment, mentorship, professional development, and job placement of pipeline students.

These actions and investments would be separate from and complementary to the proposed Health Career Opportunity Program (HCOP) and Health Corps projects. Pipeline programs would include those that support K–16 students (in some cases across all levels) and would not necessarily be based in a university or health professions school setting, whereas HCOP programs would all be focused on college students and college campuses. While HCOP programs focus on preparing competitive applicants for health professions graduate schools, many model pipeline programs are community-based or health employer–based and focus on supporting students from their own communities to succeed and progress to the next educational level, and connecting them back to college or employment in their local communities. The Health Corps would be a channel for generating student interest in health careers and more systematically connecting them to local model pipeline programs and HCOP programs and tracking their progress across educational and career levels rather than delivering programs. All are needed to advance increasing health workforce diversity, opportunity, and equity for Californians.

Estimated Cost

A total of $62 million is needed over the 10-year project to (1) build capacity by supporting a cohort of 12 programs per year at a cost of $50,000 per program for five years, a total of $600,000/year and $3 million over five years for 60 programs; (2) sustain and scale by supporting up to 50 model programs that "graduate" from the boot camp, each of which would receive $200,000 per year for five years for a total of $1 million each — an additional $3 million is allocated to administer and manage the initiative, for a total of $53 million; (3) establish the Center for Pipeline and Inclusive Excellence, at $500,000 per year, including $200,000 annual evaluation costs, for a total of $2.5 million over five years and $250,000 annually in years 6–10 for a total of $3.75 million; and (4) support the CHPC statewide network at $300,000 per year for five years and $150,000 annually in years 6–10 for a total of $2.25 million. Funding for the center of excellence and statewide network are reduced in years 6–10 based on the assumption that they will secure additional revenue sources during the first five years.

Cost	Year 1	Years 2–5 (annual avg.)	Years 6–10 (annual avg.)	Total
Build capacity	$600,000	$600,000		**$3,000,000**
Sustain and scale – program funding		$5,000,000	$6,000,00	**$50,000,000**
Sustain and scale – administration cost	$300,000	$300,000	$300,000	**$3,000,000**
Center for Pipeline and Inclusive Excellence	$500,000	$500,000	$250,000	**$3,750,000**
California Health Professions Consortium Statewide Network	$300,000	$300,000	$150,000	**$2,250,000**
Total	**$1,700,000**	**$6,700,000**	**$6,700,000**	**$62,000,000**

The appendix provides a more detailed breakdown of sustain and scale pipeline program funding.

Impact Summary

The recommended activities are intended to support pipeline programs' ability to increase the participation of minorities in health professions. The combined activities have the potential to increase the number of minority health care professionals practicing in California. The program cost of $62 million over 10 years funds capacity building ($1.2 million), direct program funding ($50 million), program administration ($3 million), the Center for Pipeline and Inclusive Excellence ($3.75 million), and the California Health Professions Consortium Statewide Network ($2.25 million).

Research has shown that well-run and adequately funded pipeline programs help students from disadvantaged backgrounds aspire to and achieve successful careers as health care professionals. There is also evidence suggesting that some members of minority communities prefer practitioners who share their race/ethnicity and/or language. Research shows that over a 20-year period, a pipeline program can increase college graduation rates for African American students by 62%, for Hispanic students by 73%, and for Native American students by 72%. The expanded programs supported by the Center for Pipeline and Inclusive Excellence and the California Health Professions Consortium together have the potential to achieve the results suggested in the recommendation. In a program scaled to the extent envisioned by the recommendation, graduation rates for underrepresented minorities (URMs) could be as high as 78% –82% overall, which, assuming that about 7,000 URM students are in the program over the envisioned 10-year period, the California health care workforce could see an increase of about 5,500–5,700 URM professionals. Such an increase could improve access for patients in minority communities, as minority providers are more likely to treat minority patients and more likely to serve in poor and rural areas. The correlation between race/ethnicity concordance and improved outcomes is much weaker, suggesting other factors impact outcomes as much as race/ethnicity concordance.

(Excerpt from impact assessment conducted by Health Management Associates.)

Appendix: Breakdown of Pipeline Program Sustain and Scale Costs

The table below shows the number of pipeline programs funded each year and the annual costs.

Pipeline Programs Funded	Programs	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Group 1	10	$2 M	$2 M	$2 M	$2 M	$2 M				
Group 2	10		$2 M	$2 M	$2 M	$2 M	$2 M			
Group 3	10			$2 M	$2 M	$2 M	$2 M	$2 M		
Group 4	10				$2 M	$2 M	$2 M	$2 M	$2 M	
Group 5	10					$2 M	$2 M	$2 M	$2 M	$2 M
Total	**50**	**$2 M**	**$4 M**	**$6 M**	**$8 M**	**$10 M**	**$8 M**	**$6 M**	**$4 M**	**$2 M**
Average	**Annual average $5 M, years 2–5**					**Annual average $6 M, years 6–10**				

STRATEGY: INCREASE OPPORTUNITY FOR ALL CALIFORNIANS TO ADVANCE IN THE HEALTH PROFESSIONS.

Recommendation 1.2: Recruit and support college students, including community college students, from underrepresented regions and backgrounds to pursue health careers.

Main Takeaway

The California Health Career Opportunity Program (CAHCOP) and associated HCOP partnerships have the potential to add at least 25,500 new California health care workers, including 20,000 to 23,000 from underrepresented minority communities. Proposed 10-year funding is $159 million, with $100 million to support the 20 HCOP pilots, $45 million for fellowships and internships, and the remaining $14 million supporting the CAHCOP office and the administration of internships and fellowships.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

An urgent and growing need exists for California to expand its pool of talented, diverse health workers and to connect them more effectively to jobs in all communities. Over the next decade it is projected that California will have 4,100 fewer primary care providers than it will need.[1] More than seven million Californians live in designated Health Professional Shortage Areas (HPSAs), which include some of the state's largest and fastest-growing regions (e.g., Los Angeles, Central Valley, and Inland Empire).[2] And while California is one of the most ethnically diverse states in the US, Latinos, African Americans, Native Americans, and some Asian populations are severely underrepresented in the health professions,[3] and the state's health workforce is increasingly unable to meet the needs of an estimated 7.3 million patients with limited English proficiency.[4]

Regions of California that lack a sufficient and diverse supply of primary care providers do have large populations of "place-committed" individuals[5] — many from underrepresented backgrounds. With sufficient support, these Californians could become workers in priority health professions in HPSAs.

Rationale

With communities of color projected to make up 65% of California's population by 2030,[6] it is imperative that greater action and investment be taken to increase health workforce diversity. Students from underrepresented minority (URM) and low-income backgrounds face many barriers to obtaining undergraduate and graduate degrees in the health professions. A recent UCSF Healthforce Center report identified these major barriers: cost; lack of academic preparation and admission requirements, particularly for doctoral programs; lack of concordant mentors; stereotype threat; limited exposure to health careers; and poor advising.[7] To address these barriers, the report recommended comprehensive strategies from a three-part framework, developed by Brown University's Initiative to Maximize

1. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/California%E2%80%99s%20Current%20and%20Future%20Behavioral%20Health%20Workforce.pdf (PDF).
2. "Designated Health Professional Shortage Areas Statistics," Health Resources and Services Administration, last modified September 30, 2018, https://ersrs.hrsa.gov/ReportServer?/HGDW_Reports/BCD_HPSA/BCD_HPSA_SCR50_Qtr_Smry_HTML&rc:Toolbar=false.
3. Tim Bates, Susan Chapman, and Catherine Dower, *Men of Color in California's Health Professions Education Programs*, Center for the Health Professions at UCSF, 2010, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/2.%202010-10_Men_of_Color_in_Californias_Health_Education_Programs.pdf (PDF).
4. P. Hsu et al., *California's Language Concordance Mismatch: Clear Evidence for Increasing Physician Diversity*, UCLA Latino Policy & Politics Initiative, September 2018, https://latino.ucla.edu/wp-content/uploads/2018/09/UCLA-AltaMed-Language-Concordance-Brief-2018.pdf (PDF).
5. *Place-committed individuals* are defined as people who live in a region and by virtue of their motivations and circumstances are highly committed to staying and working in that area.
6. Sarah Bohn et al., *California's Future*, Public Policy Institute of California, January 1, 2018, www.ppic.org/publication/californias-future/.
7. Catherine Toretsky, Sunita Mutha, and Janet Coffman, *Breaking Barriers for Underrepresented Minorities in the Health Professions*, Healthforce Center at UCSF, July 30, 2018, https://healthforce.ucsf.edu/publications/breaking-barriers-underrepresented-minorities-health-professions.

Student Development:[8] forming institutional partnerships, providing tailored student support / academic success, and engaging faculty/institutional change.

The federally administered Health Career Opportunity Program (HCOP) funds institutional partnerships that provide tailored programmatic support and opportunities for high school and college students from economically disadvantaged and underrepresented backgrounds to become competitive applicants for health professions schools. HCOP has funded partnerships between health professions schools and collaborating colleges and high schools since the 1970s. Many California health professions schools have had HCOP grants, but only one still receives federal funds.

HCOP successfully recruits and provides support to cohorts of students from URM and economically disadvantaged backgrounds. In 2016–17, over 80% of HCOP participants were underrepresented minorities (39% Hispanic/Latino, 40% black/African American, and 3% American Indian or Alaska Native).[9] While evidence of HCOP's effectiveness at increasing participant entry into health professions school has not been published, internal program assessments in California HCOP programs have shown positive results. For example, UCSF Fresno, in collaboration with CSU Fresno, has served 418 disadvantaged students from 2007 to 2018. More than half of those students who graduated subsequently enrolled in health professional schools, and a high percentage practice in the Central Valley. Of the 300 low-income sophomore community college students who participated in Stanford Medical School's summer HCOP program, all but one graduated from college and 73% enrolled in or completed a graduate program in the health professions, with MD/DO being the most common degree. Despite success in California and nationally, HCOP program funding has been insufficient and highly variable depending on the federal budget and shifting political dynamics.

Development of HCOP programs in California would increase diversity in the health professions and contribute to addressing provider shortages by recruiting and significantly expanding the number of college students from economically disadvantaged and URM backgrounds and of underserved California communities who gain entry into health professions schools. Recruitment would include a focus on college students from subpopulations in each region who are experiencing disparities in health access and outcomes and/or are underrepresented in the area's health sector. California Community College and California State University campuses have large numbers of students from these backgrounds who are motivated to become health professionals and would benefit from greater support to pursue health careers.

Proposed Action

Invest in a statewide California Health Career Opportunity Program (CAHCOP) and associated new HCOP partnerships. Together, these programs could recruit more than 4,800 prehealth college students annually at institutions across California. They would provide cohorts of students with comprehensive academic enrichment, career development, mentorship, and advising needed to enter health professions school. Support provided would enable participants to become competitive candidates for graduate education in medicine, behavioral health, aging, public health, dentistry, physician assistant, pharmacy, nursing, and allied health careers. Programs would target students from HPSAs, low-income and first-generation backgrounds, and groups underrepresented in the health professions.

The proposed actions include:

1. Fund 20 ten-year HCOP pilot programs: one on five campuses in each of the University of California, California State University, and California Community College System and up to five programs at private universities for a total of more than 4,800 students annually. Priority would be given to campuses with large numbers of URM and

8. "Brown Initiative to Maximize Student Development: Participating Graduate Programs," Brown Univ., n.d., www.brown.edu/initiatives/maximize-student-development/participating-graduate-programs.
9. *Health Careers Pipeline and Diversity Programs: Academic Year 2016-17*, Health Resources and Services Administration, https://bhw.hrsa.gov/sites/default/files/bhw/health-workforce-analysis/program-highlights/diversity-and-pipeline-training-programs-2017.pdf (PDF).

low-income students, a demonstrated commitment to diversity and associated institutional change, a track record of providing tailored student support, and strong health professions school partnerships. Participating systems and campuses would commit to sustaining successful programs, spreading innovations, and pursuing additional HCOP programs if intended outcomes are achieved.

2. Create a public-private CAHCOP office to secure ongoing funding and establish the statewide infrastructure to develop, implement, and manage programs. CAHCOP would administer a competitive application process for interested institutions, and five-year pilot program grants. It would provide technical assistance, serve as a repository for best practices, conduct evaluation, and advocate on behalf of programs.
3. Fund internships and fellowships to enable more students to compete for admission to graduate health professions schools or employment in the field. This effort would fund: (1) paid summer internships for college students in community health centers, public health departments, public behavioral health settings, providers serving older adults, and community-based initiatives that promote health equity; and (2) one-year, post-undergraduate fellowships for HCOP and other URM students for in-depth, pre-graduate school experience in primary care and prevention, behavioral health, and older-adult health.

Estimated Cost

CAHCOP would require $15.9 million annually ($159 million over 10 years) to establish, scale, and sustain comprehensive statewide and regional programs in partnership with public and private universities and health professions schools. This includes:

1. 20 five-year HCOP pilot programs ($500,000 per year each).
2. CAHCOP office: Funding would cover staff, office and operational costs, travel, and meeting expenses ($900,000 per year).
3. Internships at $5,000 each for 400 students annually ($2 million per year), and fellowships at $25,000 each for 100 students annually ($2.5 million per year), costs to establish and administer both programs ($500,000 year), totaling $5 million per year.

Cost	Years 1–10 (annual)	Total
20 HCOP pilot programs	$10,000,000	**$100,000,000**
CAHCOP office	$900,000	**$9,000,000**
Internships	$2,000,000	**$20,000,000**
Fellowships	$2,500,000	**$25,000,000**
Administration of internships and fellowships	$500,000	**$5,000,000**
Total	**$15,900,000**	**$159,000,000**

Impact Summary

The CAHCOP and associated HCOP partnerships have the potential to add underrepresented minority (URM) providers to California's health care workforce. The effort would be funded at $159 million over 10 years ($100 million supporting 20 HCOP pilots, $45 million for fellowships and internships, and $14 million supporting the CAHCOP office and the administration of internships and fellowships). If deployed on the scale proposed (about 48,000 students over 10 years) with training course completion rates similar to those in Health Profession Opportunity Grants (74%), at least 35,500 students would complete occupational training over a 10-year period. At least 72% of those students (25,500) would be expected to be employed in a health care position after completing training.

As current research does not identify the long-term rate of workforce participation for similarly situated students, it is not clear how many such health care professionals would remain in the workforce over 10 or more years. Research from the biology diversity program at UC Berkeley does not show consistent results among all participating students but has found improved grade point average results for minority students. Research also has shown that students who complete health care training programs and achieve occupational licensing earn as much as $4,500 more than students in a control group over a two-year period. Students completing certification through programs such as CAHCOP might have slightly greater earning power, at least in the early years of their careers. If CAHCOP targets the same students as do other federal programs, 80%–90% of the funded students would be from URMs, for a 10-year increase in URM health care professionals of about 20,400–23,000. Additionally, the program envisions 5,000 internships and fellowships in addition to the 48,000 students participating in CAHCOP.

(Excerpt from impact assessment conducted by Health Management Associates.)

STRATEGY: INCREASE OPPORTUNITY FOR ALL CALIFORNIANS TO ADVANCE IN THE HEALTH PROFESSIONS.

Recommendation 1.3: Support scholarships for qualified students who pursue priority health professions and serve in underserved communities.

Main Takeaway

The development and launch of the Emerging California Health Leaders Scholarship Program (ECHLSP) is estimated to cost $480 million over 10 years and would result in thousands of students receiving tuition scholarships (1 to 4 years) in exchange for service agreements of 1 to 4 years in underserved regions in California. Assuming the program is designed to maximize the length of service agreement years by providing as many full-tuition scholarships as possible, approximately 3,810 (1,707 MD/DOs, 696 nurse practitioners, 152 physician assistants, 325 public health professionals, and 930 social workers) would be supported over the next 10 years at a per-student cost of $126,000. This would increase the number of health professionals working in underserved communities (assuming all fulfilled their service agreements) and diversify the health care workforce.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

An urgent and growing need exists for California to expand its pool of talented, diverse health workers and to connect them more effectively to jobs in all communities. Over the next decade it is projected that California will have 4,100 fewer primary care providers than it will need.[1] More than seven million Californians live in designated Health Professional Shortage Areas (HPSAs), which include some of the state's largest and fastest-growing regions (e.g., Los Angeles, Central Valley, and Inland Empire).[2] And while California is one of the most ethnically diverse states in the US, Latinos, African Americans, Native Americans, and some Asian populations are severely underrepresented in the health professions,[3] and the state's health workforce is increasingly unable to meet the needs of an estimated 7.3 million patients with limited English proficiency.[4]

The rising cost of health professions education, California's high cost of living, and low levels of compensation create barriers for many Californians to pursue health careers and practice in professions and regions of greatest need. Financial support has become a major factor in how candidates choose health careers, graduate education, and post-training practice locations.

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 non-URM students.[5] According to the Association of American Medical Colleges (AAMC), only 3% of medical students nationwide come from families with incomes in the lowest 20%. (By comparison, 60% of medical students come from families with incomes in the top 20%.[6]) In 2018, the median debt for medical students was $192,000.[7] Costs have become the overriding factor for many low-income and URM students when deciding what health profession and subspecialty

1. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/California%E2%80%99s%20Current%20and%20Future%20Behavioral%20Health%20Workforce.pdf (PDF).
2. "Designated Health Professional Shortage Areas Statistics," Health Resources and Services Administration, last modified September 30, 2018, https://ersrs.hrsa.gov/ReportServer?/HGDW_Reports/BCD_HPSA/BCD_HPSA_SCR50_Qtr_Smry_HTML&rc:Toolbar=false.
3. Tim Bates, Susan Chapman, and Catherine Dower, *Men of Color in California's Health Professions Education Programs*, Center for the Health Professions at UCSF, 2010, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/2.%202010-10_Men_of_Color_in_Californias_Health_Education_Programs.pdf (PDF).
4. P. Hsu et al., *California's Language Concordance Mismatch: Clear Evidence for Increasing Physician Diversity*, UCLA Latino Policy & Politics Initiative, September 2018, https://latino.ucla.edu/wp-content/uploads/2018/09/UCLA-AltaMed-Language-Concordance-Brief-2018.pdf (PDF).
5. Brian D. Smedley, Adrienne Stith Butler, and Lonnie R. Bristow, eds., *In the Nation's Compelling Interest: Ensuring Diversity in the Health-Care Workforce*, National Academies Press, 2004, www.nap.edu/catalog/10885/in-the-nations-compelling-interest-ensuring-diversity-in-the-health.
6. Nina Bai, "Student Debt in the Health Professions Limits School Choice, Career Paths," UCSF News Center, January 26, 2017, www.ucsf.edu/news/2017/01/405656/student-debt-health-professions-limits-school-choice-career-paths.
7. James Youngclaus, "An Exploration of the Recent Decline in the Percentage of U.S. Medical School Graduates with Education Debt," *Analysis* (AAMC) 18, no. 4 (Sept. 2018), www.aamc.org/download/492284/data/september2018anexplorationoftherecentdeclineinthepercentageofu.pdf (PDF)

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 non-URMs.[8]

Rationale

A statewide scholarship program would enable more California residents to pursue priority, high-need health professions and practice in underserved communities by easing the financial burden of education up front in return for a service commitment. Historically, funding programs have emphasized loan repayment over scholarships because of concerns about students changing their minds. In addition, scholarships support recruitment and retention of providers who have completed training in a needed profession. However, there is growing recognition that up-front scholarships may be a more effective way to motivate and support students to pursue service goals rather than waiting for them to incur significant debt first.

Many states and health professions schools have been increasing investments in health professions scholarship programs to meet these challenges. California examples include the following: Advanced Practice Healthcare scholarships offered though the Health Professions Education Foundation and UC Riverside School of Medicine Dean's Mission Award Service Scholars (see Appendix A). New York University recently announced tuition-free medical school for all incoming students going forward. And in Texas, the Joint Admission Medical Program (JAMP), which was created by the state legislature in 2003, provides scholarship support for qualified, economically disadvantaged Texas residents who pursue medical school. It also provides comprehensive support for participants, from early in college through medical school application, to gain medical school acceptance. JAMP students are recruited from and encouraged to practice in underserved rural and urban communities. JAMP has supported disadvantaged Texas students to become physicians, and graduates are more diverse than their counterparts and more likely to pursue primary care and complete residencies in Texas.[9] (See Appendix B.)

There is limited evidence regarding the impact of reducing medical school debt on candidate choice of health careers or practice location. Evidence is mixed on 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.[10] 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 a relatively low-paying specialty. The article recommended national service scholarships as an attractive option for students who aspire to become physicians but cannot afford a large education debt. If our nation wants to attract a more diverse health care workforce to meet its needs, policymakers should consider a range of options to make medical school more affordable.[11]

For decades, the US armed forces have provided funding for education in return for service commitments. There is growing recognition that up-front scholarships can be a more effective way to motivate and support students to pursue service goals than waiting for them to incur significant debt first. This is the rationale that both New York University and LA Care Scholarships at UCLA/Charles R. Drew University of Medicine and Science used when they decided to offer full-tuition scholarships.

Proposed Action

Develop a new Emerging California Health Leaders Scholarship Program (ECHLSP) to make the path to health professions school and service in underserved communities a reality for more Californians.

8. Institute of Medicine Committee on Institutional and Policy-Level Strategies for Increasing the Diversity of the U.S. Healthcare Workforce; and Smedley, Butler, and Bristow, *Compelling Interest*.
9. 2018 data provided via interview with the JAMP director.
10. Bryan T. Vaughn et al., "Can We Close the Income and Wealth Gap Between Specialists and Primary Care Physicians?," *Health Affairs* 29, no. 5 (May 2010): 933–40, doi:10.1377/hlthaff.2009.0675.
11. Mircea I. Marcu et al., "Borrow or Serve? An Economic Analysis of Options for Financing a Medical School Education," *Academic Medicine* 92, no. 7 (July 2017): 966–75, doi:10.1097/ACM.0000000000001572.

The ECHLSP would have two primary components: (1) scholarships for students from low-income, first-generation, and underrepresented backgrounds and/or from medically underserved areas with financial need (with an emphasis on bilingual students); and (2) a collective pipeline partnership among participating California health professions schools and undergraduate institutions (similar to JAMP in Texas) to provide a subset of scholarship students with comprehensive support to prepare for graduate programs. The ECHLSP will focus on California residents who commit to pursuing a priority health profession (e.g., primary care, public health, behavioral health, and geriatrics) and to practicing in an eligible, high-need area for each year of funding they receive.

ECHLSP scholarships would cover full tuition for priority professions and degree programs, including primary care/prevention, behavioral health, and care for aging (e.g., MD, DO, NP, PA, DDS, MSW), as well as public health (MPH) across participating California health professions schools. This opportunity would be marketed to students in health pipeline, undergraduate, and postbaccalaureate programs. Scholarships would be awarded to admitted students prior to their admission decision. Scholarships for recipients who change their minds about pursuing an eligible profession or service in a designated region would be converted to a loan or an alternative arrangement after consideration of circumstances.

Estimated Cost

The ECHLSP could be created through legislative action, as in Texas, and/or through a public-private partnership. Scholarship funds could be provided through the state budget, an endowment, and/or a high-profile fund with public and private contributions. The level of funding would be dependent on the following factors: the target number of students; percentage of tuition, fees, and additional expenses it covers; and allocation of funds across eligible professions.

If the program were to annually cover full tuition for 10% of students enrolled in eligible California health professions education programs, the costs of those scholarships would be $479.8 million. Refer to Appendix C for cost calculations. That scholarship funding would be spread across students in a range of priority professions. There would be a goal of 20% of scholarships for bilingual students. The specific professions supported and the allocation of funds across the types of programs and regions could be adjusted periodically based on documented emerging needs and evaluation of program results.

In addition, this program would require the following to develop and operate the program: $500,000 in annual administrative costs to establish, operate, market, and evaluate the program, and $400,000 for a two-year planning grant to explore and develop pipeline partnerships.

Based on the above, the total budget needed to launch the program and fund the first year would be $40.6 million. The table in Appendix C provides the assumptions upon which the proposed tuition costs were calculated to support 10% of currently enrolled students in MD, NP, PA, MPH, and MSW programs. Allocation of funds across the types of programs and regions could be adjusted periodically based on emerging needs and evaluation of program results.

Cost	Year 1	Years 2–10 (annual avg.)	Total
Student scholarships*	$39,500,000	$48,300,000	**$474,200,000**
Start-up costs	$200,000		**$200,000**
Operational costs	$500,000	$500,000	**$5,000,000**
Planning grant (for consortium)	$400,000		**$400,000**
Total	**$40,600,000**	**$48,800,000**	**$479,800,000**

*Assumes 4% annual increase in cost of education[12]

12. *An Updated Look at Attendance Cost and Medical Student Debt at U.S. Medical Schools*, AAMC, August 2017, www.aamc.org/download/482236/data/augustt2017anupdatedlookatattendancecostandmedicalstudentdebtatu.pdf (PDF). Based on the rate of increase of medical school tuition (in constant dollars) from 2006 to 2016.

Impact Summary

The proposed action — to develop and implement a new Emerging California Health Leaders Scholarship Program (ECHLSP) — would annually cover tuition for 10% of all students enrolled in eligible California health professions (1,032 students per year at current enrollment levels) to enable more Californians to pursue degrees in high-need professions and practice in underserved communities. Scholarships would be available to low-income, first-generation, and underrepresented students committed to primary care practice and pursuing nurse practitioner (NP), registered nurse (RN), physician assistant (PA), master's in public health (MPH), and master's in social welfare (MSW) degrees, and MD/DO degrees. Scholarship recipients would agree to serve in underserved communities for each year of tuition funding they received.

The program is estimated to cost $41 million to fund the first year of tuition for the first cohort plus start-up and administrative costs. Assuming 10% of students in eligible degree programs receive scholarships each year, the program would cost about $480 million over 10 years. The exact number of scholarships provided in exchange for service agreements will vary depending on when in their program students receive support and for how many years of their program, as well as other program design variables. A scenario that maximizes the length of service agreement years by providing as many full-tuition scholarships (ranging from two to four years depending on degree program) as possible would support 3,810 students from various programs (1,707 MDs, 696 NPs, 152 PAs, 325 MPHs, and 930 MSWs over 10 years) at a per-student cost of about $126,000. Assuming all students complete their degree programs and fulfill their service agreements, all of these students would go on to work for one to four years in underserved communities in California. And given that these would be low-income, first-generation, and underrepresented students, this recommendation would diversify the health care workforce. This increase in health professionals may in turn lead to expanded access to care in underserved communities and may increase the number of Californians with access to a provider of similar social, ethnic, and linguistic background, which may improve patient satisfaction.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Appendix A: Examples of California Health Professions Scholarship Programs

UC Riverside Dean's Mission Award - Service Program: Students entering their third year of medical school are selected annually to receive a two-year award to cover all required university fees not covered by other need-based financial aid sources. Each selected recipient is required to complete the following: two years and six months (30 months) of qualified service within San Bernardino, Riverside, or Imperial County in primary care or psychiatry. Failure to meet these requirements will automatically result in the conversion of the Dean's Mission Award into a loan that must be repaid upon graduation.

Health Professions Education Foundation Advanced Practice Healthcare Scholarship Program (APHSP): Those awarded the APHSP Scholarship may receive up to $25,000 for one year of school. If awarded, recipients agree to continue practicing full-time, direct patient care at a qualified facility in California for a twelve-month service obligation. Applicants can be awarded up to three times. Some examples of eligible professions include: dentists, nurse practitioners, physician assistants, and pharmacists.

Appendix B: Texas Joint Admissions Medical Program

Funded through the Texas Higher Education Coordinating Board, JAMP is a unique partnership between all nine Texas medical schools and 67 public and private four-year undergraduate institutions.

Since 2003, JAMP has been helping Texas students achieve their dreams with guaranteed admission to one of the state's nine medical schools, financial and academic support to help them get there, and access to resources that allow them to excel.

JAMP provides:

- Support through undergraduate scholarships and summer stipends
- Placement into JAMP Summer Internship experiences
- Hands-on experience through clinical enrichment opportunities
- Comprehensive, multiphase MCAT preparation program
- Personal and professional development through dedicated mentoring
- Guaranteed admission to a participating Texas medical school if all criteria are met
- Scholarships to attend medical school

JAMP's results:

Out of the 1,069 students who have participated in JAMP, 750 have completed or are in medical school, and 200 are undergraduates. Sixty-six percent of JAMP medical school graduates have completed residencies in Texas; 62% in primary care. JAMP graduates are more diverse than their counterparts, including 29% Latino and 9% African American.[13]

Read about JAMP's legislative history.

13. 2018 data provided via interview with the JAMP director.

Appendix C: Proposed Initial Emerging California Health Leaders Scholarship Program Funding

The proposed initial level of funding for the scholarship program is based on the following assumptions.

Degree Program	Average CA Enrollment	Average Annual Tuition Cost	Total Annual Scholarships (10% of avg. enrollment)	Est. Annual Scholarship Cost (100% of tuition)†	Est. 10-Year Total Scholarship Cost (100% of tuition)‡
MD/DO	5,686	$48,024	569	$32,807,475	**$328,074,753**
NP	1,744	$36,018	174	$7,524,386	**$75,243,858**
PA	375	$64,035	38	$2,921,482	**$29,214,820**
MPH	654*	$15,608	65	$1,218,043	**$12,180,436**
MSW	1,862*	$13,207	186	$2,949,303	**$29,493,026**
Total target students / estimated cost			**1,032**	**$47,420,689**	**$474,206,894**†

*Public institutions only (UC, CSU)

†Average annual tuition multiplied by the number of eligible students (e.g., $40,000 × 569 med students).

‡Assumes years per program use are four for MD/DO, three for NP, 27 months for PA, and two for MPH and MSW.

Note: Scholarship will target 20% of eligible students who can speak more than one threshold language.

Source: Preliminary Report to the California Future Health Workforce Commission, California Higher Education Health Professions Steering Committee, last modified April 20, 2018.

STRATEGY: INCREASE OPPORTUNITY FOR ALL CALIFORNIANS TO ADVANCE IN THE HEALTH PROFESSIONS.

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

Main Takeaway

The recommendation would provide training and guidance to enable 795 Californians to graduate from medical school, 581 of whom would be members of racial/ethnic groups that are underrepresented among physicians. Estimated to cost $26 million over 10 years, this recommendation would cost approximately $32,700 per participant graduated from medical school.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

An urgent and growing need exists for California to expand its pool of talented, diverse health workers and to connect them more effectively to jobs in all communities. Over the next decade it is projected that California will have 4,100 fewer primary care providers than it will need.[1] More than seven million Californians live in designated Health Professional Shortage Areas (HPSAs), which include some of the state's largest and fastest-growing regions (e.g., Los Angeles, Central Valley, and Inland Empire).[2] And while California is one of the most ethnically diverse states in the US, Latinos, African Americans, Native Americans, and some Asian populations are severely underrepresented in the health professions,[3] and the state's health workforce is increasingly unable to meet the needs of an estimated 7.3 million patients with limited English proficiency.[4]

Rationale

In 2017 a total of 1,187 underrepresented minority (URM) Californians applied for medical school admission, and 694 were not accepted into any medical school to which they applied.[5] Postbaccalaureate reapplicant premed programs offer an alternative opportunity to prepare for and be accepted to medical school. They support students who might otherwise be qualified to overcome barriers to acceptance, such as those with low prerequisite science GPAs and standardized test scores. Programs are generally one-year long and include upper division science courses, an intensive Medical College Admission Test (MCAT) review course, learning skills workshops, and guidance on strengthening medical school applications. Postbaccalaureate graduates are three to six times more likely to be accepted to medical school than are nonparticipants.[6]

Postbaccalaureate programs have been successful in California for over 30 years, and 7% of URM Californians accepted to medical school are postbaccalaureate alumni. Such alumni are almost twice as likely to pursue primary care specialties as are general California medical school graduates (60% vs. <35%) and about four times more likely to pursue family medicine (37% vs. <9%). Many possess cultural, experiential, and linguistic skills needed to enhance access to culturally and linguistically concordant care for underserved minority patients.

1. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/California%E2%80%99s%20Current%20and%20Future%20Behavioral%20Health%20Workforce.pdf (PDF).
2. "Designated Health Professional Shortage Areas Statistics," Health Resources and Services Administration, last modified September 30, 2018, https://ersrs.hrsa.gov/ReportServer?/HGDW_Reports/BCD_HPSA/BCD_HPSA_SCR50_Qtr_Smry_HTML&rc:Toolbar=false.
3. Tim Bates, Susan Chapman, and Catherine Dower, *Men of Color in California's Health Professions Education Programs*, Center for the Health Professions at UCSF, 2010, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/2.%202010-10_Men_of_Color_in_Californias_Health_Education_Programs.pdf (PDF).
4. P. Hsu et al., *California's Language Concordance Mismatch: Clear Evidence for Increasing Physician Diversity*, UCLA Latino Policy & Politics Initiative, September 2018, https://latino.ucla.edu/wp-content/uploads/2018/09/UCLA-AltaMed-Language-Concordance-Brief-2018.pdf (PDF).
5. Special request of Assn. of Amer. Medical Colleges, February 27, 2018.
6. Kevin Grumbach and Eric Chen, "Effectiveness of University of California Postbaccalaureate Premedical Programs in Increasing Medical School Matriculation for Minority and Disadvantaged Students," *JAMA* 296, no. 9 (Sept. 6, 2006): 1079–85, doi:10.1001/jama.296.9.1079.

Studies consistently find that, once graduated from medical school, high proportions (up to 50%–80%) of URM physicians practice in designated shortage areas.[7] This is critical to care access and health equity given that roughly 70% of the seven million Californians living in such shortage areas are Latino, African American, and Native American.[8] Poor access to effective health care can result in costly urgent care or emergency department visits and delayed treatment, causing preventable, costly hospitalizations.

Proposed Action

This proposal aims to (1) add 100 postbaccalaureate reapplicant slots annually at existing University of California (UC), California State University (CSU), and private California-based programs; and (2) provide student scholarships for reapplicant postbaccalaureate students to cover 100% of program tuition.

The 100 additional postbaccalaureate reapplicant slots would be prioritized for URM students from designated Health Professional Shortage Areas. Priority would also be given to students with demonstrated interest in the Commission's three priority areas — primary care and prevention, behavioral health, and aging. The programs would support the 100 additional students with learning skills specialists, advisors, or counselors; MCAT preparation courses, books, and teaching materials; and other resources.

Currently, UC medical schools operate five postbaccalaureate programs enrolling a total of 60 students. Programs include UC Irvine (started 1986), UC Davis (1991), UCSF (1999), UCLA (2000), and UC Riverside (2008). The appendix includes the additional postbaccalaureate programs at CSU, private colleges, and nonmedical school–based UC campuses. In 2017, 694 applicants were not accepted into any medical school to which they applied. With the addition of 100 slots, UC programs will have a total of 160. This means that less than 25% of those not accepted could be accommodated in a UC postbaccalaureate program.

Estimated Cost

Postbaccalaureate programs can be expanded at an incremental cost of $10,000 per additional slot, for a total of $1 million annually for 100 students. An additional $100,000 would be used to augment and strengthen the activities of the central postbaccalaureate consortium office. Since these programs are currently operating, no start-up costs are needed. An additional $1.5 million in annual funds would provide scholarships for these additional 100 postbaccalaureate students. With tuition and fees varying widely across California campuses, scholarships would be offered to cover 100% of a student's tuition and fees. It would not cover living expenses of approximately $10,000. Cost data come from current program experience.

7. Robert C. Davidson and Roberto Montoya, "The Distribution of Services to the Underserved: A Comparison of Minority and Majority Medical Graduates in California" *Western Journal of Medicine* 146, no. 1 (Jan. 1987): 114–17, www.ncbi.nlm.nih.gov/pmc/articles/PMC1307223/.
8. "Designated," Health Resources and Services Administration.

Costs	Years 1–10 (annual)	Total
Incremental costs to add postbaccalaureate slots ($10,000 each for 100 students)	$1,000,000	**$10,000,000**
Program administration	$100,000	**$1,000,000**
Scholarships for postbaccalaureate medical school ($15,000 each for 100 students)	$1,500,000	**$15,000,000**
Total	**$2,600,000**	**$26,000,000**

Over the years, postbaccalaureate programs have been supported by a combination of UC medical school funds, The California Endowment, Kaiser Community Benefits programs, the federal Health Career Opportunity Program, centers of excellence, and other sources.

Impact Summary

Over 10 years, this recommendation would enable 1,000 additional California medical school reapplicants from underrepresented or disadvantaged backgrounds to obtain additional training and guidance that would increase their likelihood of admission to medical school. If participants are admitted to and graduate from medical school at the same rates as alumni of the UC Postbac Consortium, 820 participants (82%) would be admitted to medical school, and 795 (79.5%) would graduate from medical school; 599 of those admitted to medical school and 581 of those who graduate from medical school would be URMs. Data provided to the Commission suggest that the cost associated with this recommendation would be $2.6 million per year and $26 million over 10 years. The estimated cost per participant graduated would be $32,700.

Findings from a study of alumni of the UC Postbac Consortium indicate that alumni who practice in California are more likely than other California physicians who attended the same medical schools during the same time period to practice in communities with high rates of poverty and in communities with high percentages of Latino or African American residents. Thus, the recommendation may increase the supply of physicians in these communities, which could reduce travel times and wait times for appointments. Data on alumni of the UC Postbac Consortium suggest that 60% of participants who are admitted to medical school (estimated at 477 of the physicians produced by this recommendation) would practice as primary care physicians, a percentage that is substantially higher than the percentage of all US physicians (<35%). Increasing the number of URMs who participate in reapplicant postbaccalaureate programs similar to those of the UC Postbac Consortium would also increase the number of Californians with access to a physician of the same race/ethnicity, which may improve patient trust and satisfaction.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Appendix: Postbaccalaureate Programs Operated by CSU, Private Colleges, and UC Campuses Without Medical Schools

- California Northstate University (academic enhancement)
- CSU East Bay
- CSU Fullerton (career-changer oriented)
- CSU Los Angeles (both career-changer and academic enhancement)
- CSU San Marcos (career-changer oriented)
- Keck Graduate Institute (academic enhancement)
- Loyola Marymount University (career-changer oriented)
- Mills College
- San Francisco State
- Scripps (career-changer oriented)
- USC
- UC Berkeley Extension
- UCLA School of Dentistry
- UC San Diego

Source: UC San Diego Health Advisor website.

STRATEGY: INCREASE OPPORTUNITY FOR ALL CALIFORNIANS TO ADVANCE IN THE HEALTH PROFESSIONS.

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

Main Takeaway

Increasing the availability of financial support to offset the costs of graduate and other professional education has the potential to increase the supply of providers in underserved areas and to address the growing demand for behavioral health services. The total program cost, $341.5 million over 10 years, would increase the number of behavioral health (BH) providers over 10 years: $314.5 million in loan forgiveness and stipends for 25,000 providers ($12,580/provider); and $25 million in scholarships for 1,000 total bilingual BH providers ($25,000/provider). Although most of the literature on loan forgiveness and other financial incentives focuses on physician programs and behaviors, one can infer that stipends for nonphysician behavioral health (BH) providers and scholarships for bilingual BH providers would positively influence retention of these providers in underserved areas. Challenges to implementation reduce the potential positive impacts to the supply of health professionals and improved access to care.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

California is facing a severe and growing behavioral health workforce crisis, which will have a significant negative impact on health care access, quality, and costs.[1,2] Over the next decade it is projected that California will have 41% fewer psychiatrists and 11% fewer psychologists, marriage and family therapists, clinical counselors, and social workers than it will need.[3] People of color and bilingual providers are underrepresented in the workforce, a large segment of the workforce is aging and approaching retirement, and there is insufficient education and training capacity.[4]

The rising cost of health professions education, California's high cost of living, and low levels of compensation create barriers for many Californians to pursue health careers and practice in professions and regions of greatest need. Financial support has become a major factor in how candidates choose health careers, graduate education, and post-training practice locations.

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 non-URM students.[5] According to the Association of American Medical Colleges (AAMC), only 3% of medical students nationwide come from families with incomes in the lowest 20%. (By comparison, 60% of medical students come from families with incomes in the top 20%.[6]) In 2018, the median debt for medical students was $192,000.[7] Costs have become the overriding factor for many low-income and URM students when deciding what health profession and subspecialty

1. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/publications/california-s-current-and-future-behavioral-health-workforce (PDF).
2. Hannah Holzer, "California Needs More Mental Health Professionals — and the Shortage Will Get Worse, Experts Say," *Sacramento Bee*, July 11, 2018, www.sacbee.com/news/local/health-and-medicine/article214019489.html.
3. Coffman et al., *California's Current.*
4. Coffman et al..
5. Brian D. Smedley, Adrienne Stith Butler, and Lonnie R. Bristow, eds., *In the Nation's Compelling Interest: Ensuring Diversity in the Health-Care Workforce* (Washington, DC: National Academies Press, 2004), www.nap.edu/catalog/10885/in-the-nations-compelling-interest-ensuring-diversity-in-the-health.
6. Nina Bai, "Student Debt in the Health Professions Limits School Choice, Career Paths," UCSF News Center, January 26, 2017, www.ucsf.edu/news/2017/01/405656/student-debt-health-professions-limits-school-choice-career-paths.
7. James Youngclaus, "An Exploration of the Recent Decline in the Percentage of U.S. Medical School Graduates with Education Debt" *Analysis* (AAMC) 18, no. 4 (Sept. 2018), www.aamc.org/download/492284/data/september2018anexplorationoftherecentdeclineinthepercentageofu.pdf (PDF).

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 non-URMs.[8]

Rationale

Substantial investment is needed in financial incentives and educational capacity to increase the number of Californians pursuing behavioral health careers. Incentives would stimulate interest in behavioral health careers and offset costs of required internships and prelicensure training. Incentives should influence motivated students to choose service in public health care systems and in underserved communities, despite opportunity for higher compensation in private behavioral health settings. Financial support is also critical to enabling more candidates from low-income and underrepresented and bilingual backgrounds to pursue behavioral health careers. Funding for educational capacity and pipeline development would help ensure that enough candidates can be trained in priority behavioral health professions and regions to meet population needs.

Financial incentives are particularly important to support student and trainee interests in behavioral health, given compensation and reimbursement levels. Salaries in behavioral health professions are well below those for comparable positions in other health care sectors and in business, according to a Substance Abuse and Mental Health Services Administration report to Congress.[9] According to an American Hospital Association literature review, one of the primary reasons for the shortage of psychiatrists and psychologists is financial: because salaries and reimbursements are so much lower, students are avoiding behavioral health professions altogether. Additionally, since many students graduate with significant student loan debt, many may pursue better reimbursed clinical specialties so they can begin to pay off this debt. In fact, the median compensation for psychiatrists is the third lowest among the 30 medical specialties.[10]

California's primary source of financial incentives to date has been the Mental Health Services Act (MHSA). It included $228 million over 10 years for statewide workforce education and training (WET), including $20 million in annual funding for qualified, diverse individuals to complete training and practice in the public behavioral health system. Counties also received funding from MHSA, and used up to 5% of their funds for WET. The statewide WET program is administered by the Office of Statewide Health Planning and Development (OSHPD), which over the past five years has provided loan assumption to 8,237 mental health professionals; 950 stipends to psychiatric-mental health nurse practitioners (PMH-NPs), social workers, clinical psychologists, and marriage and family therapists; and residency and training rotations for 135 clinical psychiatrists and 138 psychiatric-mental health nurse practitioners.[11] Funding was insufficient to accommodate applicant demand, but without these investments, behavioral health workforce shortages and distribution challenges would have been even more severe. With WET funding sunsetting after FY 2017–18, as specified in the MHSA, the legislature made a one-time $5 million FY 2018–19 budget augmentation for stipends for graduate social workers, clinical psychologists, and PMH-NPs. There is currently no plan for additional statewide WET funding. Some counties may have unspent WET funds for workforce investments.

Two studies are underway to assess the impact of WET funds relative to their intended workforce outcomes. An evaluation of WET programs is currently underway and will be completed in 2019. OSHPD is also conducting a follow-up study of stipend recipients to determine their current employment status and location. Unfortunately, outcomes from previous WET investments are not yet documented, and some legislators are concerned about making additional

8. Institute of Medicine Committee on Institutional and Policy-Level Strategies for Increasing the Diversity of the U.S. Healthcare Workforce; and Smedley, Butler, and Bristow, *Compelling Interest*.
9. Michael A. Hoge et al., "Mental Health and Addiction Workforce Development: Federal Leadership Is Needed to Address the Growing Crisis," *Health Affairs* 32, no. 11 (Nov. 2013): 2005–12, doi:10.1377/hlthaff.2013.0541.
10. *The State of the Behavioral Health Workforce: A Literature Review*, Amer. Hospital Assn., 2015, www.aha.org/ahahret-guides/2016-06-06-state-behavioral-health-workforce-literature-review.
11. Data provided by Office of Statewide Health Planning and Development, June 2018.

investments without supporting evidence. While acknowledging these concerns, the urgency of the growing behavioral health workforce crisis — and the long lead time required to recruit, train, and license providers — create an imperative to act now. As findings from the evaluation findings of the current WET programs become available, future program design can be adjusted, but investment in the behavioral health workforce should move forward, as strongly recommended by the California Future Health Workforce Commission's Behavioral Health Subcommittee.

Proposed Action

Action is needed to restore, make permanent, and increase the level of funding available for investment in behavioral health scholarships, stipends, and educational capacity. This initiative would (1) increase support for loan forgiveness and stipend programs for psychiatrists, clinical psychologists, marriage and family therapists, licensed professional clinical counselors, clinical social workers, and psychiatric-mental health nurse practitioners 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) develop large-scale scholarship programs for bilingual candidates. Funding for some aspects of the initiative could come from the MHSA to restore and increase WET funding, or alternative sources could be identified. The infrastructure is in place at OSHPD to continue and expand administration of the WET program; alternative organizational homes could also be considered.

Estimated Cost

Investments of $27.7 million in year 1 and $341.5 million over 10 years are needed to implement this proposal. Specific investments include:

- $314.5 million for stipends, loan forgiveness, educational capacity, and pipeline development to replace sunsetting WET funding. $25 million would be provided in year 1 plus 5% annual increases to accelerate progress toward target workforce goals.
- $2 million for program evaluation and tracking at $200,000 annually to support annual and cumulative outcomes reporting.
- $25 million in scholarship funding for bilingual students to pursue graduate training in social work, nursing, psychology, and therapist professions. Scholarships of $25,000 per year for 100 students would be provided annually. The scholarship program could be modeled after the St. David's Foundation endowment at the University of Texas at Austin School of Social Work[12] or the New Jersey Mental Health Institute's Hispanic Higher Education Scholarship fund, which support bilingual, bicultural students from their states to become mental health professionals.[13]

Given the magnitude of need and long-term investment required, permanent state funds would be the best source of ongoing funds. Public-private investment could also be considered, including funding from health plans that are accountable for meeting network adequacy requirements. Use of unspent and ongoing county MHSA funding should also be explored. Funding, strategic use of funds, and targeted outcomes should be incorporated into the next five-year WET strategic plan (to be completed in 2019). Consideration should be given to aligning the WET strategic plan with the recommendations and implementation of the Commission's plans.

12. "Se Habla Español," Univ. of Texas at Austin, https://socialwork.utexas.edu/featured/speaking-language-st-davids-foundation-endowment/.
13. "Hispanic Higher Education Scholarship Fund," New Jersey Mental Health Institute, n.d., www.njmhi.org/scholarshipfunds.html.

Cost	Year 1	Year 2 – 10 (annual)	Total
Stipends, loans, educational capacity, pipeline development	$25 million	$25 million + annual increase of 5%	**$314.5 million**
Program evaluation	$200,000	$200,000	**$2.0 million**
Scholarships for bilingual students	$2.5 million	$2.5 million	**$25.0 million**
Total	**$27.7 million**	**$29.0 - $41.5 million**	**$341.5 million**

Note: Figures may not sum due to rounding.

Impact Summary

Increase loan forgiveness and stipend programs for behavioral health providers: Addressing educational debt for behavioral health (BH) providers is an important undertaking, justified in part by numerous studies indicating that physicians (and presumably other health professionals) with lower levels of debt are more likely to practice in underserved areas. Dedicating $10,000 on average (including the proposed annual adjustment) per potential BH licensee as a one-time allocation toward stipends, scholarships, or loan repayment is likely to support about 12,500 BH providers over five years (62.5% of the projected 20,000 BH provider increase). Over 10 years at the same dollar amount, nearly 25,000 BH licensees could be supported (at a cost of $314.5 million). While there is limited literature showing the effectiveness of these types of financial incentives in retaining and sustaining nonphysician BH providers in underserved areas, based on the evidence for physicians, nonphysician BH providers accessing this program would be 20%–30% more likely to remain in practice in underserved areas.

Develop large-scale scholarship programs for bilingual candidates: There are now several programs in California and elsewhere in the US targeting and developing bilingual BH workers for degree studies and work in underserved areas, but no useful evaluations to date. Based on anecdotal data on program costs and outcomes, they tend to be resource intensive due to the need for more support to prepare "faculty" in agencies and other community settings. The sooner that programs such as these are replicated, the sooner the costs of such programs will be reduced. Program implementation (one-time $25,000 scholarships each year for 10 years for 100 nonphysician, degree-seeking, bilingual BH providers, for a total of $25 million) is likely to have higher costs in the first 5–10 years of implementation. A rigorous evaluation would be informative for future endeavors in support of BH workforce development.

(Excerpt from impact assessment conducted by Health Management Associates.)

STRATEGY: INCREASE OPPORTUNITY FOR ALL CALIFORNIANS TO ADVANCE IN THE HEALTH PROFESSIONS.

Recommendation 1.6: Expand and strengthen loan repayment programs for primary care clinicians practicing in safety-net settings and underserved communities.

Main Takeaway

Increasing the availability of loan repayment programs (LRPs) to primary care providers (PCPs) would increase the supply of PCPs in underserved areas and increase access to care as measured by outpatient visits, although not at the levels proposed in the recommendation. Using conservative calculations, by year 5 of the program, 727 new PCPs (750, adjusted down for attrition) would be participating in the LRP. Assuming an attrition rate of 2%–3%, the LRP participants would provide 7.08 million total additional visits during the first 5 years, and close to 28 million cumulative after 10 years of the program. There is limited literature and data to assess the impact of marketing and placement services for these programs. The total program cost would be $353.75 million, including $350 million for loan repayment over 10 years, along with $3.65 million for placement in years 1–3 and $100,000 for a year 1 program assessment.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

An urgent and growing need exists for California to expand its pool of talented, diverse health workers and to connect them more effectively to jobs in all communities. Over the next decade it is projected that California will have 4,100 fewer primary care providers than it will need.[1] More than seven million Californians live in designated Health Professional Shortage Areas (HPSAs), which include some of the state's largest and fastest-growing regions (e.g., Los Angeles, Central Valley, and Inland Empire).[2] And while California is one of the most ethnically diverse states in the US, Latinos, African Americans, Native Americans, and some Asian populations are severely underrepresented in the health professions,[3] and the state's health workforce is increasingly unable to meet the needs of an estimated 7.3 million patients with limited English proficiency.[4]

Five million previously uninsured Californians gained health coverage through the Affordable Care Act. Most who gained coverage were enrolled in Medi-Cal, which now covers 14 million members — about one-third of all Californians.[5] Unfortunately, health provider capacity did not increase commensurately, leading to access challenges. Access challenges can lead to delayed care, which worsens health and increases use of higher-cost settings such as urgent care and emergency departments.[6] According to a 2018 Department of Health Care Services Network Certification Report, only 29 of California's 59 Medi-Cal managed care plans met state network adequacy access standards in 2017.[7]

1. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/California%E2%80%99s%20Current%20and%20Future%20Behavioral%20Health%20Workforce.pdf (PDF).
2. "Designated Health Professional Shortage Areas Statistics," Health Resources and Services Administration, last modified September 30, 2018, https://ersrs.hrsa.gov/ReportServer?/HGDW_Reports/BCD_HPSA/BCD_HPSA_SCR50_Qtr_Smry_HTML&rc:Toolbar=false.
3. Tim Bates, Susan Chapman, and Catherine Dower, *Men of Color in California's Health Professions Education Programs*, Center for the Health Professions at UCSF, 2010, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/2.%202010-10_Men_of_Color_in_Californias_Health_Education_Programs.pdf (PDF).
4. P. Hsu et al., *California's Language Concordance Mismatch: Clear Evidence for Increasing Physician Diversity*, UCLA Latino Policy & Politics Initiative, September 2018, https://latino.ucla.edu/wp-content/uploads/2018/09/UCLA-AltaMed-Language-Concordance-Brief-2018.pdf (PDF).
5. Shannon McConville, "Just the Facts: The Medi-Cal Program," Public Policy Institute of California, last modified April 2017, https://www.ppic.org/publication/the-medi-cal-program/.
6. Renee M. Gindi, Robin A. Cohen, and Whitney K. Kirzinger, *Emergency Room Use Among Adults Aged 18–64: Early Release of Estimates from the National Health Interview Survey, January–June 2011*, Centers for Disease Control and Prevention, May 2012, www.cdc.gov/nchs/data/nhis/earlyrelease/emergency_room_use_january-june_2011.pdf (PDF); and Interview with health plan CEOs convened by Local Health Plans of California, 2018.
7. *Compliance Assurance Report: 2018 Annual Network Certification*, California Department of Health Care Services, 2018, www.dhcs.ca.gov/formsandpubs/Documents/AssuranceofComplianceReportMCP.pdf (PDF).

Current and future primary care provider shortages have intensified competition among California health employers.[8] With the rising cost of medical education and high cost of living in many California communities, student loan repayment has become an increasingly important factor in provider recruitment and retention.

Rationale

The median debt for medical school graduates in 2018 nationally was $192,000.[9] Whereas well-resourced employers can offer substantial loan repayment packages to attract providers coming out of residency and to recruit providers from the safety net, community health centers and other safety-net providers rely on state loan repayment programs and the federal National Health Service Corps (NHSC), which are more limited in dollars and eligibility and have more restrictions (see appendix). Funding amounts and conditions have not been adequate to meet the demand for awards, and these programs suffer from funding instability and uncertainty. For example, over 200 eligible providers each year applied but were not awarded funds from the Steven M. Thompson Loan Repayment Program in 2016-17 and 2017-18 due to funding limitations.[10]

Medi-Cal managed care plans have tried to address network gaps by making multimillion-dollar investments in provider incentive programs that include student loan repayment.[11] These investments have made a meaningful impact on provider recruitment and retention in areas with access challenges. However, in many cases, according some plan executives, investments were funded by reserves and cannot be counted on to continue.

California's 2018–19 budget included a one-time $220 million allocation (unspent Proposition 56 funds) to establish a Medi-Cal physician and dentist loan repayment program. This funding will be administered by Physicians for Healthy California (PHC). According to PHC's CEO, around $190 million will be awarded over five years in loan repayment to approximately 633 physicians (across all specialties) who have caseloads of at least 30% Medi-Cal patients. The goal is to strengthen physician recruitment and retention to improve access for Medi-Cal members. However, additional and permanent state and/or private funds for loan repayment will be needed to meet Medi-Cal network adequacy requirements and to address the state's severe and growing primary care physician shortage, maldistribution and access challenges.

There is significant evidence that loan repayment programs are effective for recruiting practitioners into underserved and rural areas.[12] In a Health Resources and Services Administration (HRSA) report to the Government Accountability Office regarding the safety-net workforce, loan repayment programs were described as more effective and cost-efficient for recruitment and retention than were scholarships. Further, HRSA data show that 48% of NHSC recipients remain in their practice after their obligation has been fulfilled.[13] There is also evidence that many providers in these programs remain in underserved areas even after they leave the originating employer.

Given the urgency of the growing primary care workforce crisis, California needs effective loan repayment programs to increase the number of physicians pursuing primary care and practicing in underserved communities and safety-net settings. To meet access and network adequacy requirements for Medi-Cal recipients, it is imperative to invest in sufficient levels of loan repayment alongside increases in primary care–related scholarships, medical school capacity, and residencies.

8. Interviews with California Future Health Workforce Commission members and key stakeholders, 2017–18.
9. James Youngclaus, "An Exploration of the Recent Decline in the Percentage of U.S. Medical School Graduates with Education Debt" *Analysis* (Assn. of Amer. Medical Colleges) 18, no. 4 (Sept. 2018), www.aamc.org/download/492284/data/september2018anexplorationoftherecentdeclineinthepercentageofu.pdf (PDF).
10. Internal data provided by the Health Professions Education Foundation, which administers the Steven M. Thompson Loan Repayment Program.
11. Major investments have been made by Inland Empire Health Plan, Central California Care Alliance, Partnership Health Plan, L.A. Care, Kern, and others.
12. Amelia Goodfellow et al., "Predictors of Primary Care Physician Practice Location in Underserved Urban or Rural Areas in the United States: A Systematic Literature Review," *Academic Medicine* 91, no. 9 (Sept. 2016): 1313–21, doi:10.1097/ACM.0000000000001203.
13. "Provider Retention in High-Need Areas. NHSC Enrollment and Retention," US Dept. of Health and Human Services, December 22, 2014, https://aspe.hhs.gov/report/provider-retention-high-need-areas/nhsc-enrollment-and-retention.

Proposed Action

Implement a three-part strategy to expand and strengthen loan repayment programs:

1. **Address structural issues with current state loan repayment programs.** Conduct a formal assessment to identify ways to strengthen state loan repayment programs to enhance the distribution of primary care clinicians. Current programs are designed to promote access and provider retention in medically underserved areas, and participants in the Commission's deliberative process recommended several adjustments to strengthen program impact:
   - Simplify application processes and coordinate the timing to align better with each other and with federal programs.
   - Reduce requirements for safety-net provider match and/or provide public or private subsidies for providers less able to afford the match in order to meet priority needs and promote equity.
   - Expand eligible types of professionals who play key roles in increasing primary care access, and increase allocation of funds to those categories (e.g., physician assistant, nurse practitioner, social worker, etc.).
   - Consider increasing loan repayment annual amounts, given the increasing cost of education and the resulting increased loan burden of recent graduates.
   - Ensure that the ability to speak threshold languages is a priority factor in award allocation.

   These factors should be taken into consideration when allocating the FY 2018–19 $220 million budget. The total program assessment one-time cost in 2019: $100,000.
2. **Increase funding for current and new programs tied to achieving target staffing levels.** Invest in loan repayment awards for 1,750 additional safety-net primary care physicians over the next 10 years at $200,000 each.[14] Awardees could include eligible physicians practicing in community health centers, public settings, and private practices in underserved areas that meet patient-mix threshold guidelines. Awardees would receive the funding over a five-year period and commit to one year of service in a medically underserved area for each year of funding. The 1750-award total was determined based on an estimated need for 200 additional loans for primary care physicians per year over the next 10 years.[15] It assumes that the new PHC-administered loan repayment program will fund approximately 50 primary care physicians[16] per year for five years for a total of 250 and not fund any thereafter. Therefore, funds proposed through this proposal would cover 150 physicians per year for the first 5 years and 200 per year for years 6-10. The project also proposes that a formula would be developed in 2019 to link future levels of funding to a target number of providers — by profession and region — necessary to meet Medi-Cal network access goals. Future year funding levels should be adjusted annually and tied to documented needs. Over time, needs may change with implementation of workforce development strategies and due to emerging payment and delivery models, team-based care, and technology use. Total cost: $350 million.
3. **Strengthen marketing of loan repayment programs and safety-net job placement assistance.** Marketing and promotion would begin at the prehealth undergraduate major level and continue through health professions education and postgraduate training for primary care clinicians. There currently is no formal mechanism to connect graduates of residency and other clinician training programs to jobs with safety-net provider organizations in medically underserved areas.[17] To fill this void, a three-year pilot program would be established in three high-need regions of the state to formally market safety-net job opportunities at residency programs and NP and PA

14. The $200,000 loan repayment level was determined based on the median national level of debt of 2018 medical school graduates reported by the AAMC and the approximate target level of physician awards for the PHC loan repayment program. Current State Loan repayment programs pay significantly less. For example, Steven M. Thompson is $105,000.
15. Estimate based on the number of eligible applicants for current the Steven M. Thompson Loan Repayment Program who were not funded in 2016–27 (255) and 2018 (212).
16. Assumes that 234 primary care physicians would be funded through the 633 awards over five years, since according to the Health Force Center at UCSF, 37% of California physicians are primary care physicians.

education and postgraduate training programs. A network of recruiters and connectors at the regional level would be established. Funding is proposed for three regional recruiters and for marketing and support. Residency programs funded by Song-Brown would be a key target for job promotion. Start-up costs would be $500,000 for development, systems, and marketing, plus $1.05 million in annual operating costs for recruiter salary, travel, and marketing events ($350,000 per pilot region). Total cost: $3.65 million.

Estimated Cost

A total of $31.65 million is needed in year 1, and $353.75 million total over 10 years.

Funding from commercial and managed care health plans should be explored for state-level programs and regional investment toward meeting network adequacy requirements. Consideration should also be given to funding from health systems, medical groups, and private industry into a safety-net provider loan-and-recruitment pool. Systems could pay into the pool prospectively or relative to the number of providers they recruited from the safety net during a year. Philanthropies have already invested significantly in California loan repayment programs as part of their commitment to access to care and could be considered for funding.

Cost	Year 1 (start-up)	Years 2–3 (annual)	Years 4–5 (annual)	Years 6–10 (annual)	Total
Program assessment	$100,000				**$100,000**
Loan repayment*	$30,000,000 (150 physicians)	$30,000,000 (150 physicians)	$30,000,000 (150 physicians)	$40,000,000 (200 physicians)	**$350,000,000**
Placement in 3 regions	$1,550,000	$1,050,000			**$3,650,000**
Total	**$31,650,000**	**$31,050,000**	**$30,000,000**	**$40,000,000**	**$353,750,000**

*Annual costs are based on the number of physician loan repayment awards in that year at the total 5-year loan repayment commitment cost of $200,000. Actual annual cost will vary based on the number of active loan recipients providing service in that year.

17. Interviews with Song-Brown commissioners, 2018.

Impact Summary

This analysis addresses the three elements of this recommendation.

Identify ways to address structural issues with current loan repayment programs: In the face of ongoing disparities in access to and the distribution of primary care physicians in California and across the US, there is a pressing need to identify effective incentives to encourage primary care providers (PCPs) to practice in underserved areas. Addressing educational debt for PCPs is an important undertaking, justified in part by numerous, mostly observational studies indicating that physicians (and presumably other primary care professionals) with lower levels of debt are more likely to practice in underserved areas. Understanding the true effect of LRPs is somewhat complicated by what appears to be a self-selection bias that occurs in choosing practice locations in underserved areas (i.e., for many providers the choice to serve in high-needs areas would have occurred regardless of a financial debt reduction incentive). Importantly, providers participating in certain LRPs tend to remain in underserved areas even after their service obligations are completed, compared to providers without an LRP option or those who participate in other incentivized loan forgiveness programs. Some debt relief programs still have additional challenges, and it may be useful to identify ways to improve the administrative and structural aspects of these programs. This evaluation would cost $100,000.

Increase funding for LRPs tied to achieving targeted staffing levels: Although the recommendation does not identify specific strategies for the funding of the proposed expansion of current and new LRP programs, a large number of PCPs who applied for LRP support could not be funded through California LRPs, federal, or other loan repayment programs. Should funding be made available, there would surely be a ready supply of willing PCPs to take advantage of the generous LRP package being made available to 150–200 applicants each year beginning in program year 1 (using a service obligation that targets Health Professional Shortage Areas). Total 10-year funding for these LRP slots would be $350 million. Most of the literature on LRPs indicates a short-term retention benefit from these programs (i.e., 1–2 years after the end of the service obligation), and we would expect to retain more participating PCPs in underserved areas than those not involved in LRPs. Using conservative calculations, by year 5 of the program, 727 new PCPs (750, adjusted down for attrition) would be participating in the LRP. Assuming an attrition rate of 2%–3%, as indicated in HRSA reporting, the LRP participants provide 7.08 million total additional visits during the first 5 years, and close to 28 million cumulative after 10 years of the program. This is not as large or as rapid as proposed, but still a significant contribution to health care access. It is difficult to quantify total benefit to underserved communities from the program, as some (although likely not all) PCPs would act similarly with or without participation in an LRP.

Pilot efforts to strengthen the marketing of LRPs and the provision of safety-net job placement assistance: There is very little, and only observational, information on the effectiveness of marketing and of job placement or job matching efforts among safety-net LRP programs. While this strategy is worth testing, a well-planned evaluation would be a significant contribution to this proposed pilot effort. Three-year costs would be $3.65 million.

(Excerpt from impact assessment conducted by Health Management Associates.)

Appendix: Federal and State Loan Repayment Programs[18]

- The Health Resources and Services Administration (HRSA) National Health Service Corps (NHSC) Loan Repayment Program provides up to $100,000, spread over five years, to physicians in return for their commitment to practice in approved community clinics in communities identified as underserved (HPSAs). The actual amount of assistance a physician might receive depends on how their clinic scores on the HPSA rating scale for community need. Even at the maximum award level (reserved for areas at the upper end of the 25-point rating scale), awards fall far short of physicians' actual debt. Most areas score 16 points or lower on the HPSA scale, and physicians in that situation get almost no help from NHSC. Only about 15% of physicians who apply get assistance through NHSC.
- The US Department of Education Public Service Loan Forgiveness (PSLF) program forgives remaining approved student loan debt if a physician practices in an underserved community for 10 years and makes 120 consecutive, on-time monthly payments (10%–15% of monthly discretionary income) to reduce indebtedness on their own before getting the assistance. However, in its FY 2019 budget proposal, the administration sought to begin eliminating this program by no longer accepting new participants and slowly winding down current commitments. Nonetheless, Congress approved the administration's request to renew funding for another two years, but the future of PSLF is uncertain.
- The California State Student Loan Repayment Program (SLRP) provides for up to $110,000 in tax-free grants for student debt relief over a six- to eight-year period, depending on whether the physician practices full-time or part-time. Similar to the NHSC program, SLRP requires service in approved community clinics in HPSA-targeted areas. To illustrate the significant difference between state and federal programs, the California SLRP requires community clinics to pay half of the amount SLRP provides to their physicians. This causes many clinics to turn down their physicians' requests for participation in the loan repayment program. California's SLRP is funded by federal discretionary dollars, further making its future uncertain. The Office of Statewide Health Planning and Development (OSHPD) administers the program.
- The Health Professions Education Foundation (HPEF) is a 501(c)(3) nonprofit founded by OSHPD to augment SLRP. HPEF offers six loan repayment programs:
  - The Steven M. Thompson Loan Repayment Program offers up to $105,000 of assistance over a three-year period in return for a three-year commitment to practice in underserved areas. It is funded through a surcharge on clinical license renewal fees and grant funding from The California Endowment, California Wellness Foundation, and Kaiser's Community Benefit Fund. However, according to HPEF's executive officer, the foundations are ending their support. HPEF's close relationship to OSHPD, a regulatory agency, limits its ability to expand its base of funders by soliciting organizations such as commercial health plans. Moreover, HPEF does not provide assistance to community clinics to help them with SLRP's matching-dollar requirement. In 2015–16, only 63 physicians statewide received loan repayment assistance through HPEF, and fewer than half were primary care physicians.
  - County Medical Services Program (CMSP) Loan Repayment Programs (administered by Healthcare Workforce Development Division along with the State Loan Repayment Program).
  - Advanced Practice Healthcare Loan Repayment Program.
  - Bachelor of Nursing Loan Repayment Program.
  - LVN Loan repayment program.
  - Allied Healthcare Loan Program (for community health workers, medical assistants, etc.).

18. Summary provided by Steve Heath, CEO, Capitol Health Network. Mr. Heath also provided additional information and input that informed this development of the proposal.

STRATEGY: INCREASE OPPORTUNITY FOR ALL CALIFORNIANS TO ADVANCE IN THE HEALTH PROFESSIONS.

Recommendation 1.7: Create a California Health Corps to engage students, health workers, and retirees in addressing health workforce gaps.

Main Takeaway

Although the innovative nature of the proposal could succeed in increasing California's total health care workforce over time (as well as increasing the numbers of underrepresented minorities in the workforce), the three-year planning and program development period does not include sufficient time for significant program impacts to be felt. Current research makes it difficult to predict the impact that the California Health Corps would have. The program would cost $4 million over three years ($750,000 to develop a business plan and prepare to launch the program, $3.1 million for initial operations, and $150,000 to evaluate the program and develop a sustainability plan).

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

An urgent and growing need exists for California to expand its pool of talented, diverse health workers and to connect them more effectively to jobs in all communities. Over the next decade it is projected that California will have 4,100 fewer primary care providers than it will need.[1] More than seven million Californians live in designated Health Professional Shortage Areas (HPSAs), which include some of the state's largest and fastest-growing regions (e.g., Los Angeles, Central Valley, and Inland Empire).[2] And while California is one of the most ethnically diverse states in the US, Latinos, African Americans, Native Americans, and some Asian populations are severely underrepresented in the health professions,[3] and the state's health workforce is increasingly unable to meet the needs of an estimated 7.3 million patients with limited English proficiency.[4]

At the same time, the health sector faces increased competition for talented, diverse workers from the technology sector and the flexibility of the "gig" economy. Competition also drives up labor costs, which make up 60% or more of health employers' expenses.[5] California's safety-net, government, and nonprofit providers may be hardest hit by these "talent wars" because they have more limited resources than for-profit health care employers. They face even greater competition for talent as large private companies like Amazon, Apple, and CVS expand their role in health.

1. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/California%E2%80%99s%20Current%20and%20Future%20Behavioral%20Health%20Workforce.pdf (PDF).
2. "Designated Health Professional Shortage Areas Statistics," Health Resources and Services Administration, last modified September 30, 2018, https://ersrs.hrsa.gov/ReportServer?/HGDW_Reports/BCD_HPSA/BCD_HPSA_SCR50_Qtr_Smry_HTML&rc:Toolbar=false.
3. Tim Bates, Susan Chapman, and Catherine Dower, *Men of Color in California's Health Professions Education Programs*, Center for the Health Professions at UCSF, 2010, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/2.%202010-10_Men_of_Color_in_Californias_Health_Education_Programs.pdf (PDF).
4. P. Hsu et al., *California's Language Concordance Mismatch: Clear Evidence for Increasing Physician Diversity*, UCLA Latino Policy & Politics Initiative, September 2018, https://latino.ucla.edu/wp-content/uploads/2018/09/UCLA-AltaMed-Language-Concordance-Brief-2018.pdf (PDF).
5. Jacqueline LaPointe, "Hospitals Target Labor Costs, Layoffs to Reduce Healthcare Costs," *RevCycleIntelligence.com*, March 2, 2018, https://revcycleintelligence.com/news/hospitals-target-labor-costs-layoffs-to-reduce-healthcare-costs.

Rationale

The California Future Health Workforce Commission (CFHWC) subcommittees recommended expansion of the number and roles of community health workers, peer support specialists, health coaches, nurses, medical assistants, and other workers in emerging health models. These workers play key roles in prevention, chronic disease management, and the social determinants of health to improve care, outcomes, and equity for our growing, aging, and diverse population.[6]

Given growing competition for talent and other workforce recruitment and retention barriers faced by HPSAs and safety-net providers,[7] CFHWC subcommittees recommended systematically mobilizing, engaging, and providing greater opportunity for Californians from all backgrounds to secure health careers in priority professions and improve community health. Many population groups are underutilized in health care and community health. a talent pool resides in the 38% of people in the US who are underutilized (unemployed, inactive, or working only part-time), 18% of whom have at least a 4-year college degree.[8] There is also increasing opportunity to engage a growing number of older adults and retirees who want or need to work in providing services and in mentoring the next generation.

The proposed California Health Corps (the corps) is a new, innovative idea meant to expand the pool of talented, diverse health workers and connect them more effectively to health jobs and service opportunities, particularly in underserved communities. By engaging members and tracking their educational and career progression, the corps would serve as a channel for promotion and greater engagement in other programs recommended by the Commission, and would provide data for evaluating effectiveness.

Proposed Action

A corps is "a body of persons having a common activity or occupation."[9] The California Health Corps would identify and recruit talent from California's communities, encouraging them to pursue health career and service opportunities on a massive scale. The corps would expand awareness of people from all backgrounds and communities about health careers and their importance to California, engage them in gaining meaningful experience through community health improvement projects, improve support to make well-informed choices, and connect them to job and service opportunities. The corps would:

- Develop a dynamic, large-scale media, social media, and community-level campaign to inspire Californians to pursue priority health careers and serve their communities.
- Operate a state-level, online platform to connect and prepare corps members for jobs, service learning, and health training opportunities.
- Mobilize health employers, health professions schools, and community health initiatives to provide corps members with greater support, learning opportunities, and professional development.
- Provide positive counseling leveraging online platforms on health careers and educational paths.
- Increase targeted, systematic promotion of existing scholarships, loan repayment, internships, jobs, and mentoring opportunities for people at all stages of health career development.

6. Kyounghae Kim et al., "Effects of Community-Based Health Worker Interventions to Improve Chronic Disease Management and Care Among Vulnerable Populations: A Systematic Review," *Amer. Journal of Public Health* 106, no. 4 (April 1, 2016): e3–28, doi:10.2105/AJPH.2015.302987; and Andrew Broderick and Kevin Barnett, *Community Health Workers in California: Sharpening Our Focus on Strategies to Expand Engagement*, California Health Workforce Alliance, January 2015: 11, https://calfutureworkforce.files.wordpress.com/2017/08/2015-chwa-community-health-workers-in-california-sharpening-our-focus-on-strategies-to-expand-engagement.pdf (PDF).
7. Jeff Oxendine and Kevin Barnett, *Horizon 2030: Meeting California's Primary Care Workforce Needs*, California Primary Care Association, 2016, https://calfutureworkforce.files.wordpress.com/2017/08/2016-cpca-horizon-2030-meeting-californias-primary-care-workforce-needs.pdf (PDF).
8. James Manyika et al., *A Labor Market That Works: Connecting Talent to Opportunity in the Digital Age*, McKinsey Global Institute, June 2015, www.mckinsey.com/featured-insights/employment-and-growth/connecting-talent-with-opportunity-in-the-digital-age.
9. *Webster's Third New International Dictionary, Unabridged*, s.v. "corps," n.d., http://unabridged.merriam-webster.com/unabridged/corps.

- Engage current professionals, health professions students, and older adults and retirees in mentoring.
- Track and support members during and after training and provide connections back to their communities.
- Target, track, and engage students from California attending college and/or health professions school out of state — including the over 60% of California residents who attend medical school out of the state[10] — to return to California for employment instead of practicing in other states.
- Connect prehealth and health professions school students to programs and projects focused on population health improvement and health equity in underserved California communities.

The corps would recruit and continuously engage and support the following audiences throughout their health career journeys: high school, college, and health professions school students and recent graduates; workers in health and other sectors; and groups outside of traditional pathways, including older adults and retirees, at-risk youth, unlicensed health workers, and immigrant health professionals. A priority focus would be people from and/or committed to serve in underserved communities and safety-net settings. Increasing opportunity, support, and equity for people from underrepresented and low-income backgrounds is also a top priority.

The corps could be developed as part of a neutral existing public or private organization with the required expertise, relationships, and capabilities. Health and nonhealth sector organizations can assist with corps development and operation. Significant investment would be needed to build the infrastructure and systems to launch and operate a multiyear pilot. Partnerships could be developed with leading California companies and state agencies to help engage target members, including companies like LinkedIn, Facebook, and Salesforce, that may have existing technology platforms to support corps goals.

The corps would be designed to align with and support existing regional health workforce and health pipeline initiatives. Regional initiatives would inform and partner with the corps on priority professions, and on promoting work-based and service learning. Initiatives and area educational programs would be channels for promotion of the corps. The corps would complement, support, and integrate these efforts rather than duplicate or subsume them.

While Commission subcommittees and the Technical Advisory Committee expressed strong interest in the corps, it still at a conceptual stage. A three-part action plan is proposed to refine its scope, priorities, and outcomes, assess its potential viability and return on investment and, if indicated, launch phase one of operations:

1. Develop a business plan and prepare for launch in year 1
2. Corps launch and phase 1 development in year 2
3. Operate and evaluate the corps in year 3

Estimated Cost

An initial investment of $4 million would be needed over three years to plan, launch, and develop the corps, starting with a $750,000 grant that would result in a business plan and launch preparation. Assuming the business plan demonstrates solid potential for large-scale impact and has clear, compelling, and achievable success metrics, additional funding would be provided: up to $750,000 in years 2 and 3 for launch staffing and infrastructure development and for phase 1 of operations; $500,000 to develop the technology platform in year 2, with $100,000 in year 3 for platform enhancement and maintenance; and $500,000 for annual communications and marketing. During year 3 an evaluation would be conducted and a sustainability plan completed at a cost of $150,000. Potential sources of funding include philanthropy, health employers, state government, federal funds, and private industry. The corps could also generate revenue through advertising, job posting, and placement fees.

10. "Applicants and Matriculants Data," Assn. of Amer. Medical Colleges, 2018–19, www.aamc.org/data/facts/applicantmatriculant/.

Cost	Year 1	Year 2	Year 3	Total
Develop business plan, prepare to launch	$750,000			**$750,000**
Staffing		$750,000*	$750,000	**$1,500,000**
Technology platform		$500,000*	$100,000	**$600,000**
Communications and marketing		$500,000*	$500,000	**$1,000,000**
Evaluation and sustainability plan			$150,000	**$150,000**
Total	**$750,000**	**$1,750,000**	**$1,500,000**	**$4,000,000**

*Contingent upon solid demonstration of success potential through business plan development.

Impact Summary

The recommended activities would cost $4 million over three years, including $750,000 to develop a business plan and prepare to launch the California Health Corps Program, $3.1 million for corps operations in years 2–3, and $150,000 to evaluate the program and develop a sustainability plan. The cost per participant is unknown, as an estimate of total participants is not part of the recommendation.

Recognizing that career decisionmaking can begin to take form as early as middle school and that students tend to prefer ongoing programs that link outside interests with health care–related topics and that provide rewards for participation and achievements in the program, the planned components of the California Health Corps may increase interest in participation and add underrepresented minorities (URMs) to California's health care workforce. If the program fosters educational achievements on par with the results seen in the AmeriCorps program, participants would see a 20% increase in four-year college degrees and a 26% increase in graduate degrees compared to the general US population. However, for full program impact, corps participants would need to stay in health care professions past the program. Sixty percent of two-year Teach for America (TFA) participants remain teachers for a third year, but just over a quarter of TFA members are still in the profession after five years. The corps and TFA have program differences that may impact corps participants' workforce longevity. Research on best practices related to social media platforms used to entice adolescents and students to engage with their health is incomplete, and research into the use of social media among disadvantaged populations to create social capital is mixed. These shortcomings make it difficult to give specific predictions related to the impact of the California Health Corps as currently envisioned.

(Excerpt from impact assessment conducted by Health Management Associates.)

STRATEGY: INCREASE OPPORTUNITY FOR ALL CALIFORNIANS TO ADVANCE IN THE HEALTH PROFESSIONS.

Recommendation 1.8: Assess, treat, and improve college student mental health and promote behavioral health careers.

Main Takeaway

This recommendation would likely increase access to behavioral health services for college students and may have a positive directional impact on college students choosing behavioral health careers and the number of jobs for mental health professionals in California. Given California's significant workforce shortages, ICare may be an effective way to increase access to behavioral health assessment and treatment services for college students. The cost would be $8.56 million over three years, not including the anticipated budget impacts related to mental health counselor staffing ratios.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

California is facing a severe and growing behavioral health workforce crisis, which will have a significant negative impact on health care access, quality, and costs.[1] Over the next decade it is projected that California will have 41% fewer psychiatrists and 11% fewer psychologists, marriage and family therapists, clinical counselors, and social workers than it will need.[2] People of color and bilingual providers are underrepresented in the workforce, a large segment of the workforce is aging and approaching retirement, and there is insufficient education and training capacity.[3]

College campuses face particularly acute challenges. Over 2.7 million students attend colleges and universities in California.[4] Surveys by the World Health Organization World Mental Health International College Student (WMH-ICS) initiative estimate that 18.5% of US college students have clinically significant depression and 16.7% have one or more clinically significant anxiety disorders.[5] These disorders increase the risk for academic disengagement, behavioral problems, and suicide.[6] Suicide is the second leading cause of death among college students.[7] Despite high prevalence of disorders, the WMH-ICS surveys found that only 15%–20% of US college students with clinically significant depression or anxiety receive treatment (i.e., counseling, medication).[8] 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.

Rationale

The Commission's Behavioral Health Subcommittee recommended prioritizing interventions with a strong focus on self-care, informal care, and accessible primary care. Focus at these levels improves prevention and early intervention, and leads to lower demand for services in more expensive settings.

1. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/California%E2%80%99s%20Current%20and%20Future%20Behavioral%20Health%20Workforce.pdf (PDF); and Hannah Holzer, "California Needs More Mental Health Professionals — and the Shortage Will Get Worse, Experts Say," *Sacramento Bee*, July 11, 2018, www.sacbee.com/news/local/health-and-medicine/article214019489.html.
2. Coffman et al., *California's Current.*
3. Coffman et al.
4. *Higher Education in California*, Public Policy Institute of California, April 2016, www.ppic.org/content/pubs/report/R_0416HEBKR.pdf (PDF).
5. Randy P. Auerbach et al., "WHO World Mental Health Surveys International College Student Project: Prevalence and Distribution of Mental Disorders," *Journal of Abnormal Psychology* 127, no. 7 (Oct. 2018): 623–38, doi:10.1037/abn0000362.
6. Jordi Alonso et al., "Severe Role Impairment Associated with Mental Disorders: Results of the WHO World Mental Health Surveys International College Student Project," *Depression and Anxiety* 35, no. 9 (Sept. 2018): 802–14, doi:10.1002/da.22778.
7. American College Health Association, December 2016.
8. Randy P. Auerbach et al., "Mental Disorders Among College Students in the World Health Organization World Mental Health Surveys," *Psychological Medicine* 46, no. 14 (Oct. 2016): 2955–70, doi:10.1017/S0033291716001665.

Students face anxiety, depression, and stress as they confront the challenges of campus life. To address the mental health needs of college students, technology can be leveraged to promote prevention and early intervention, increase access to counseling services, and reduce demand for and optimize use of the limited behavioral health workforce. In recent years, internet-based cognitive behavioral therapy (CBT) programs to treat depression and anxiety have grown rapidly in popularity and functional capacity because they are convenient and cost-effective. Students with depression and anxiety disorders substantially prefer counseling over medication.[9] Online CBT programs address three longstanding challenges facing traditional depression and anxiety treatment: lack of access, stigma, and inconvenience. Recent investigative and meta-analytic research has shown that internet-based interventions are effective for treating a wide range of mental disorders (e.g., depression, anxiety, eating disorders)[10] as well as related problems (stress management)[11] in university students. Large-scale promotion of this treatment modality would not only enhance access to quality care but also reduce demand for and complement in-person services, leading to more optimal use of limited behavioral health workforce capacity. Online CBT has been used with college students in Boston, New York, and internationally. There is not yet evidence to demonstrate reduced demand or cost for service, but online CBT has provided a resource for college students who are unlikely to seek care in counseling settings.[12]

While large-scale utilization of online CBT can help address the mental health needs of college students, sufficient access to on-campus mental health counselors for in-person care remains essential. Many college campuses in California do not meet established minimum levels of licensed mental health counselor-to-student staffing ratios. The University of California (UC) system overall reports meeting the standard, but the California State University (CSU) system and California Community Colleges (CCC) do not.[13] Senator Richard Pan introduced, and the California Legislature passed, SB 968 in September 2018. This bill required the UC, CSU, and CCC systems to hire one full-time equivalent licensed mental health counselor per 1,500 students.[14] It also specified that mental health counselors should reflect the diverse identities of the student population and be hired in accordance with additional needs identified on a campus. This bill also required campuses to provide regular assessments and reports on college student mental health needs and how well they were being met. While SB 968 has not been enacted, its intent to promote prevention and early intervention and increase the mental health workforce is timely.

Increased prevention and more effective early intervention and treatment of mental health issues for college students is also important for building the health workforce of the future. Untreated behavioral health conditions can lead to poorer academic performance in college and impact graduation rates and time to completion.[15] Prehealth professions preparation in college can be a very stressful and emotionally taxing experience. Enhancing student awareness of mental health conditions and reducing associated stigma, increasing access to treatment, and strengthening coping mechanisms can not only enhance academic performance and resilience required to gain entry into health professions school but also strengthen student capacity to handle the rigors of training programs and practice. Increasing rates of medical student suicide and provider burnout indicate the need to more effectively promote mental health and provide better treatment support for our future health workforce early on and throughout their health career journeys.

9. Van Schaik et al., "Patients' Preferences in the Treatment of Depressive Disorder in Primary Care," *General Hospital Psychiatry* 26, no. 3 (May-June 2004): 184–89, www.ncbi.nlm.nih.gov/pubmed/15121346.
10. Mathias Harrer et al., "Effectiveness of an Internet- and App-Based Intervention for College Students with Elevated Stress: Randomized Controlled Trial," *Journal of Medical Internet Research* 20, no. 4 (April 23, 2018): e136, doi:10.2196/jmir.9293.
11. Mathias Harrer et al., "Internet Interventions for Mental Health in University Students: A Systematic Review and Meta-Analysis." *Intl. Journal of Methods in Psychiatric Research*, published ahead of print, December 26, 2018, doi:10.1002/mpr.1759.
12. Randy P. Auerbach, Columbia Univ. College of Physicians and Surgeons.
13. SB 968 (Cal. 2018).
14. Intl. Assn. of Counseling Services and Assn. for Univ. and College Counseling Center Directors; and SB 968.
15. Auerbach et al., "Mental Disorders"; Philippe Mortier et al., "The Impact of Lifetime Suicidality on Academic Performance in College Freshmen," *Journal of Affective Disorders* 186 (Nov. 1, 2015): 254–60, doi:10.1016/j.jad.2015.07.030; and Ronny Bruffaerts et al., "Mental Health Problems in College Freshmen: Prevalence and Academic Functioning," *Journal of Affective Disorders* 225 (Jan. 1, 2018): 97–103, doi:10.1016/j.jad.2017.07.044.

Proposed Action

This proposal has three major components: (1) implement and evaluate ICare, an evidence-based, guided, internet-based CBT intervention adapted specifically for college students and designed to treat depression and anxiety across diverse populations;[16] (2) launch a program to expose students on the same campuses to behavioral health careers; and (3) change policies to require colleges/universities to meet minimum mental health counselor-to-student staffing ratios.

Implement and evaluate ICare: In coordination with the WMH-ICS initiative, conduct a three-year pilot to assess ICare's[17] effectiveness in California and with students from more diverse socioeconomic and racial backgrounds. During the 2019–20 school year, six pilot campuses would (1) implement a web-based survey of all students to assess their current depression, anxiety, and role impairment; (2) randomize students to ICare or usual care; (3) identify which students are most likely to be helped by ICare; and (4) assess the impact on student access to care and treatment, academic performance, and demand for services. Currently, four universities have agreed to participate in this project (UC Davis, CSU Sacramento, CSU Dominguez Hills, and Charles R. Drew University of Medicine and Science). Other candidates are one or more community colleges and UC Berkeley. From these pilots, this initiative could become a large-scale California consortium like the Boston consortium that includes Harvard University, MIT, Boston University, and the University of Massachusetts.

Behavioral Health Career Exposure Program (BHCEP): Launch a three-year pilot to address the severe behavioral health workforce shortage, diversity, and distribution challenges. With appropriate support, experience, and advising, college students could enter behavioral health training programs or be employed in the field within a short period of time. The BHCEP would provide students with exposure, experience, mentorship, and networking to pursue behavioral health careers, with priority emphasis on bilingual and underrepresented college students. Experts leading the WMH-ICS project would work with the career development team and campus representatives to support students and to develop, test, and evaluate program activities, including (1) multimedia and online career exposure, (2) engagement of students in campus behavioral health improvement projects, (3) paid internships, (4) behavioral health career and graduate education advising, and (5) connections to mentors, jobs, and graduate training scholarship opportunities. Infrastructure, program content, and lessons learned from the pilot could be leveraged to expand and replicate the program statewide. As a strategy for increasing the supply and diversity of behavioral health professionals, the initiative would annually expose over 500 undergraduate students per campus to behavioral health careers, provide advising to at least 100, engaging over 50 in on-campus or community mental health improvement projects, and supplying 15 per campus with paid internships in behavioral health.

Policy change: The proposed change, like SB 968, would require that the CSUs and CCs have – and request that UCs have – one full-time equivalent mental health counselor per 1,500 students enrolled at each of their campuses. Other elements of SB 968 could also be pursued, including mandatory campus reporting on students' behavioral health needs and how they are being addressed.

16. Isabelle M. Rosso et al., "Internet-Based Cognitive Behavior Therapy for Major Depressive Disorder: A Randomized Controlled Trial," *Depression and Anxiety* 34, no. 3 (Mar. 6, 2017): 236–45, doi:10.1002/da.22590.
17. ICare participants are advised to complete one session per week, each of which consists of 30–45 minutes of texts, testimonials, audios, educational video clips, and interactive elements tailored to engage participants by encouraging real-time choices. Each participant is assigned an eCoach to increase accountability and retention.

Estimated Cost

Multiyear initial funding would be needed for start-up and further development. The estimated direct cost includes:

- One-time start-up costs associated with each campus would be $635,000 in year 1 to support six campuses, and $317,500 in years 2 and 3 to support the addition of three campuses each year.
- Internet-Based Treatment and Study: $110,000 per campus annually, with six campuses in year 1 and three additional campuses each in years 2 and 3.
- Behavioral Health Career Exposure Program: $160,000 per campus annually. Assumes six campuses in year 1 and three additional campuses each in years 2 and 3.

Cost	Year 1	Year 2	Year 3	Total
One-time start-up costs for each new campus	$635,000	$317,500	$317,500	**$1,270,000**
Conduct internet-based treatment study	$660,000	$990,000	$1,320,000	**$2,970,000**
Behavioral Health Career Exposure Program	$960,000	$1,440,000	$1,920,000	**$4,320,000**
Total	**$2,255,000**	**$2,747,500**	**$3,557,500**	**$8,560,000**

According to the Senate Appropriations Committee analysis in 2018, the cost of reaching one full-time mental health counselor for every 1,500 students was estimated at approximately $10–$12 million for CSU and $110–$213 million for community college districts. For the UC system, costs would start at $1.9 million and grow, with increasing enrollment, to $9.9 million in the fifth year.

Impact Summary

ICare model: Given California's significant workforce shortages, ICare may be an effective way to increase access to behavioral health assessment and treatment services for college students. Increased access may decrease depression, anxiety, and role impairment in students, and therefore may have positive impacts on student academic performance and graduation rates. Both internet-based tailored, guided self-help treatments and internet-based standardized treatments have been shown to significantly reduce depression, anxiety, and distress symptoms. A systematic review demonstrated that the internet is an effective medium for the delivery of interventions designed to reduce the symptoms of depression and anxiety disorders, with effect sizes at least as large as standard psychological treatment and comparable to the treatment of depression with antidepressant medication. Based on the World Health Organization's World Mental Health International College Student Initiative project data of 3,240 students who start internet-based treatment, 1,620 would improve/remit with internet-based treatment, and the severe cases (840 of the 1,620) would improve with concurrent face-to-face psychotherapy/counseling. Internet-based cognitive behavioral therapy (iCBT) may address many barriers to adequate care, including geographic distance, prohibitive cost, lack of clinician availability, and perceived stigma, as well as enable treatment delivery to a large number of patients while minimizing costs and clinician time. With its potential to be delivered in a scalable, cost-efficient manner, iCBT is a promising strategy to enhance access to effective care.

Behavioral health career exposure and training: The Behavioral Health Career Exposure Program (BHCEP) is likely to have a positive impact on encouraging college students to choose behavioral health careers. Over the three-year period approximately 12,000 undergrad students would be exposed to behavioral health careers, with at least 2,800 students receiving advising and 500 getting paid behavioral health internships. In addition, it is estimated that 60%–70% of the BHCEP students would be members of underrepresented minorities, suggesting the program could increase the diversity of California's health professions workforce. Similar behavioral health training programs, such as the HRSA Behavioral Health Workforce Education and Training (BHWET) program, have successfully graduated students from degree and certificate-bearing programs to enter the behavioral health workforce. Upon completion of BHWET, 62% of students intended to pursue training and/or employment to serve at-risk children, adolescents, and youth.

Mental health counselor-to-student staffing ratios: The International Association of Counseling Services recommends a full-time equivalent mental health counselor to every 1,000–1,500 students. A required staffing ratio of 1:1,500 would increase access to prevention, early detection, and treatment services for the over 2.7 million college students throughout California. The recommendation would increase the number of jobs for mental health professionals in California; however, it would concurrently have a significant impact on state budget outlays. While the University of California system already meets the counselor-to-student threshold (1:1,156), the California State University system (1:2,176) would need to hire approximately 177 professionals at an approximate cost of $17.7 million annually. In addition, the California Community College system would need to make significant financial investments to meet the threshold, given their current systemwide ratio of 1:7,667.

(Excerpt from impact assessment conducted by Health Management Associates.)

STRATEGY: INCREASE OPPORTUNITY FOR ALL CALIFORNIANS TO ADVANCE IN THE HEALTH PROFESSIONS.

Recommendation 1.9: Implement a statewide prevention and early intervention mental health and workforce development model for K–12 students.

Main Takeaway

Over five years, 30 school-based pilots would train 150 teachers and 300 youth leaders, who would engage 3,000–4,000 students in the peer-to-peer mental health network. This could have a positive short-term effect on student mental health. Of 300 youth leaders trained during this period, 270 Cal-HOSA-Future Health Professionals (formerly known as Health Occupations Students of America) students can be expected to pursue a career in health professions. This group would include 121–197 minority students overall, which could marginally increase the diversity of California's health professions workforce. Total cost of the recommendation over five years is $2.5 million, which includes training and an evaluation. If the program is successful at encouraging 270 new health professionals, cost per professional would be approximately $9,300.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

California is facing a severe and growing behavioral health workforce crisis, which will have a significant negative impact on health care access, quality, and costs.[1] Over the next decade it is projected that California will have 41% fewer psychiatrists and 11% fewer psychologists, marriage and family therapists, clinical counselors, and social workers than it will need.[2] People of color and bilingual providers are underrepresented in the workforce, a large segment of the workforce is aging and approaching retirement, and there is insufficient education and training capacity.[3]

Psychiatric disorders with childhood onset increase the risk for poor physical health, problems with relationships, reduced psychological well-being, and financial difficulties. Recent studies have shown that nearly 70% of children as young as 12 living in California do not receive appropriate treatment for their depression.[4] Early detection combined with timely treatment in schools for children and youth exposed to risk factors (e.g., trauma, poverty, stress) is of critical importance.

Rationale

California HOSA (Cal-HOSA) is a starting point to prevention and early intervention treatment, as well as an entryway to a range of behavioral health career tracks. Cal-HOSA is a career technical student organization with nearly 200 chapters serving close to 9,000 students in middle and high school across California.[5] The Cal-HOSA curriculum is engrained within a school structure to increase students' academic engagement, leadership, and health/behavioral health literacy. Cal-HOSA promotes diversity and an approach based on social and environmental determinants to improving population health for vulnerable communities.[6] It emphasizes reaching the hardest-to-reach youth population and helping them reach their full potential. The Cal-HOSA Prevention and Early Intervention (PEI) Mental Health and Workforce Development Model is a school-based framework to address the risk factors associated with behavioral health issues, including substance use and suicide ideation.[7] Its purpose is to (1) increase school educators' training

1. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/California%E2%80%99s%20Current%20and%20Future%20Behavioral%20Health%20Workforce.pdf (PDF); and Hannah Holzer, "California Needs More Mental Health Professionals — and the Shortage Will Get Worse, Experts Say," *Sacramento Bee*, July 11, 2018, www.sacbee.com/news/local/health-and-medicine/article214019489.html.
2. Coffman et al., *California's Current*.
3. Coffman et al.
4. Wendy Holt, *Mental Health in California: For Too Many, Care Not There*, California Health Care Foundation, March 28, 2018, www.chcf.org/publication/mental-health-in-california-for-too-many-care-not-there/.
5. "California HOSA: Mission," California HOSA, www.cal-hosa.org/mission/.
6. "Mission," California HOSA.
7. "Mental Health Prevention and Early Intervention Project: Mental Health Program," California HOSA, www.cal-hosa.org/mental-health-program/.

in mental health and suicide PEI strategies to improve the early detection of youths' mental health issues and get them in treatment that is appropriate to their needs, and (2) increase the number and diversity of students entering the health / behavioral health fields, giving them promising careers and reducing the shortage of culturally and linguistically appropriate professionals caring for vulnerable populations.

Proposed Action

This project is a five-year initiative that includes three years of funding for implementation of Cal-HOSA PEI with a consortium of 30 schools that would adopt this framework to train educators and students in identifying social determinants earlier and changing the course of a serious disorder, along with an evaluation to assess results. Early detection combined with appropriate treatment can change a child's trajectory from severe mental illness to wellness and full participation in school, community life, and the workforce.

In year 1, 10 schools across California would implement a pilot program to (1) identify mental health risk factors and needs of their student populations, (2) equip school academic and career technical educators with the knowledge to recognize and appropriately respond to unmet needs by training 50 teachers across the 10 schools, (3) engage community partners to support their school district's PEI efforts, (4) connect with families and involve them in designing strategies that are best suited for their cultural and linguistic needs, and (5) work with school districts to ensure that schools are connected to on- and off-campus resources to address mental health needs and integrate strategies into curricula. At the end of the year, 100 youth leaders would be trained as behavioral health advocates across the 10 schools.

During years 2 and 3, educators from an additional 20 schools, mentored by the previous 10 schools, would train 100 more teachers and 200 additional Cal-HOSA youth leaders to serve as behavioral health advocates. These advocates would create a peer-to-peer network on their campuses to reach, engage, and support youth who are marginalized, excluded, and struggling with mental health problems. Example activities include using mindfulness, circle discussions, poetry, and hip-hop therapy to connect with other students struggling with traumatic experiences and mental health problems. The program would also provide mental health first aid training for youth and raise awareness about risk factors. The project's midterm goals are to train 150 teachers and 300 youth leaders across 30 schools and have them reach out and engage 3,000 to 4,000 students using the peer-to-peer network approach within schools. The overall aim is for youth to uncover personal and cultural protective factors based on lived experiences to overcome risk factors. The proposed project would pilot and evaluate the innovative PEI approach at schools throughout the state.

An evaluation that begins during the first year and continues throughout the three-year pilot would assess effectiveness on key indicators, including grade point average, graduation rates, postsecondary enrollment, and employment placement.

Estimated Cost

The total cost over five years is $2.5 million for implementation and evaluation of this training and curriculum. While Cal-HOSA students raise funds as part of their leadership development, additional funding would be needed to expand Cal-HOSA's PEI model.

Cost	Year 1	Years 2–3 (annual)	Year 4	Year 5	Total
Mental health training and professional development	$300,000	$300,000			**$900,000**
Training classroom teachers	$200,000	$237,500			**$675,000**
Training Cal-HOSA youth leaders	$100,000	$100,000			**$300,000**
Sustainability planning			$150,000		**$150,000**
Evaluation	$75,000	$100,000	$100,000	$100,000	**$475,000**
Total	**$675,000**	**$737,500**	**$250,000**	**$100,000**	**$2,500,000**

Impact Summary

Increase supply of students entering health professional training: Over 90% of HOSA students continue to pursue careers in the health professions after high school, meaning that participating Cal-HOSA students would likely demonstrate high levels of postsecondary enrollment and retention in the health professions. Because the high school years are a time when students commonly plan their careers or postsecondary educational pursuits, the high school setting is an effective location for recruitment into the allied health field. In addition, studies suggest recruitment initiatives may be equally effective if conducted prior to high school, meaning engagement of the middle school population may also have an impact. Students involved in career technical education programs like Cal-HOSA gain experience and knowledge of health care careers, with both improving by over a third compared to those not participating in these programs.

Increase the diversity of students entering health professional training: Nationally, approximately 45% of HOSA students are minorities. The California percentage is 73%. Therefore, it can be assumed that at least 121 of the estimated 270 Cal-HOSA program leaders who go on to pursue a career in health professions would be minorities, but this number could be closer to 200.

Increase access to behavioral health services: The Cal-HOSA program may have a positive effect on the early detection of youth mental health issues and on treatment, especially in the short term. Schools are a logical place for the delivery of mental health programs because most young people attend school regularly and are more likely to seek help from people with whom they already have some established and trusted relationships. The research evaluating student mental health (SMH) programs suggests that such programs can be effective in improving short-term and intermediate changes in mental health awareness. Evaluations of short-term changes in knowledge, skills, and attitudes resulting from SMH programs consistently show that such programs can improve staff, faculty, and student knowledge of mental illness; skills for identifying and referring students with symptoms; and attitudes toward mental illness. A number of studies show that SMH programs can result in intermediate positive changes in staff, faculty, and student behaviors. However, the evidence of long-term program effectiveness, safety, and cost-effectiveness in this area is somewhat insufficient, mostly due to the lack of rigorous research designs, the heterogeneity of school environments, and the complexities of interventions that require multisector collaboration. Evaluation of the long-term effects (e.g., student mental health service use, improved student mental health, lower dropout rates) of SMH programs on mental health are less common, but the programs that do show effects are commonly more comprehensive and intensive, of longer duration, are well structured, and attend to key components of implementation.

(Excerpt from impact assessment conducted by Health Management Associates.)

STRATEGY: ALIGN AND EXPAND EDUCATION AND TRAINING TO PREPARE HEALTH WORKERS TO MEET CALIFORNIA'S HEALTH NEEDS.

Recommendation 2.1: Sustain and expand the PRIME program across UC campuses.

Main Takeaway

This recommendation would provide more stable funding for the UC Programs in Medical Education (PRIME) programs and increase the number of graduates of UC medical schools. The state funds only 126 of the 354 students currently enrolled in UC PRIME programs. The recommendation calls for the state to fully fund all 354 students and to increase enrollment by 40 students per year. The estimated cost of implementing the recommendation would be $93.5 million over 10 years ($35,000 per student per year). Over 10 years (2020 to 2029), $79.8 million would be used to fund 228 of the existing slots in the UC PRIME program and would yield 570 graduates ($140,000 per graduate). Over the same 10-year period, $13.7 million would be used to increase the number of slots by 10 per year, which would yield 60 graduates ($227,000 per graduate); the cost per graduate is higher initially because medical school takes four years to complete. The majority of new PRIME graduates are likely to be from racial/ethnic groups that are underrepresented in medicine, likely to practice in California, and more likely to care for underserved populations than physicians who do not participate in similar programs during medical school. The impact of the recommendation would be maximized if implemented in conjunction with the recommendation on increasing the number of primary care medical residents in California.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

Workforce shortages in medically underserved regions of the state are projected to increase as a result of population growth, aging, and shifting demographics. According to the Association of American Medical Colleges's 2017 State Physician Workforce Data Report, California ranks number one in the percentage of physicians retained in the state who completed their undergraduate medical education at an in-state public institution (California retains 68.7% while the national median is 44.1%). This proposal would sustain and possibly expand the UC Programs in Medical Education (PRIME) initiative. Its six innovative programs work to alleviate the projected shortages of California's primary care physicians by increasing the capacity of UC medical schools to train highly motivated, socially conscious graduates who will become licensed physicians committed to practicing in the state's underserved communities. Each program includes a specified area of focus and combines structured activities ranging from student outreach and recruitment to specialized coursework, population-focused clinical training and research experiences, health care leadership and management training, community engagement experiences, master's degree educational opportunities, faculty mentoring, and sponsored events that are open to the broader campus community. Appendix A briefly summarizes the six PRIME programs.

Rationale

PRIME started in 2004; planning and development activities were made possible through a planning grant from The California Endowment. Current funding for instruction of medical students in the program comes from the state. However, more than two-thirds (246) of PRIME's 354-student enrollment remains unfunded, limiting student participation and placing programs at budgetary risk. Although AB 2597 (authored by Assemblymember Joaquin Arambula to fund PRIME) did not make it out of the state senate during the last session, UC continues to pursue strategies to secure permanent state support for enrollment funding.

The PRIME program has wide support from UC leaders, legislators, advocacy groups, and the workforce development sector. It has been recognized across the state and nationally for its creativity, alignment with state needs, and record of success for diversity, yet sustaining the program is challenged by the lack of stable, permanent funding. If funded to the resource level originally planned, PRIME programs could reach enrollments of approximately 375 to 400

students.[1] Systemwide, 354 PRIME students are enrolled for the 2018–19 academic year, and approximately 64% are underrepresented minorities (URM). Appendix B provides a breakdown of PRIME enrollment by race and ethnicity.

The majority of all PRIME graduates have trained in residency programs serving designated health workforce shortage specialties (e.g., primary care, psychiatry, general surgery, emergency medicine).[2] More than half have trained in primary care, over 60% of rural PRIME graduates are practicing in rural areas, and the majority of PRIME graduates are in California residency programs or are practicing in the state. These outcomes demonstrate that UC PRIME programs continue to have a substantial impact on increasing the number of UC medical school graduates who pursue careers devoted to improving the health of the underserved through leadership roles as community-engaged clinicians, educators, researchers, and social policy advocates.

Proposed Action

This proposal would secure permanent state funding at the originally planned enrollment levels of 393 medical students across all UC PRIME programs. Once the current program is sustained, UC would consider expanding the current program and/or developing new PRIME tracks focused on primary care and behavioral health. With adequate funding, a 20%–25% increase in enrollment (80–100 total students) could result in 20 new PRIME graduates per year. As with all PRIME programs, new programs would emphasize producing culturally and linguistically competent providers and recruiting students from underserved communities.

Estimated Cost

Of PRIME's current enrollment of 354, the state is funding 126 students. Based on today's estimated marginal cost support formula of $35,000 per UC medical student, the current funding gap is $8.7 million. However, due to lack of funding, some schools decided to scale back enrollments. If those slots are included, $9.35 million would be needed to fully fund PRIME at the enrollment levels originally planned; distribution across campuses is shown in the table below. Achieving funding at the planned level would produce 393 students (39 more than current enrollment). With augmented stable funding, existing programs would increase enrollment to planned levels in the near term. All UC medical schools have the space and infrastructure necessary to increase enrollments to planned levels.

Cost	Total Unfunded Enrollment (planned)	Years 1–10 (annual, $35,000/student)	10-Year Total
Rural PRIME (UCD)	48	$1,680,000	**$16,800,000**
PRIME-Latino Community (UCI)	16	$560,000	**$5,600,000**
UCLA PRIME (UCLA/Charles R. Drew Univ.)	90	$3,150,000	**$31,500,000**
San Joaquin Valley PRIME (UCSF/UCM)	0	$0	**$0**
PRIME-Health Equity (UCSD)	48	$1,680,000	**$16,800,000**
PRIME-Urban Underserved (UCSF/UCB)	65	$2,275,000	**$22,750,000**
Total	**267**	**$9,345,000**	**$93,450,000**

Plans for expanding PRIME to primary care and behavioral health have not yet been developed, so the size, location, and timing of the new tracks have not been determined. Assuming the same cost per student of $35,000, an additional 80–100 students (expanding the program by 20%–25%) would cost $2.8–$3.5 million annually.

1. These data are from UC Office of the President internal reports.
2. Ibid.

Impact Summary

This recommendation would increase stability of funding for the UC PRIME programs and increase the number of graduates of University of California (UC) medical schools, at an estimated cost of $93.5 million over 10 years. State funds currently support only 126 of 354 students enrolled in PRIME programs. Program directors negotiate with leaders of their medical schools to obtain funds to cover the cost of educating the remaining 228 PRIME students. Securing dedicated state funds to support the number of students that UC originally planned to enroll in the PRIME programs — 393 medical students — would enable program directors to focus on educating PRIME students.

The recommendation would also generate small increases in the number of graduates of UC medical schools and therefore physicians entering practice. If the first cohort of new first-year students is enrolled in 2020, the number of graduates would increase by 10 graduates per year between 2024 and 2029, resulting in an increase of 60 graduates over six years. The addition of 10 graduates per year would constitute a 0.4% increase over the number of graduates of medical schools in California in 2016–17, the most recent year for which data are available. Given that residency training in physician specialties takes at least three years (more for some specialties), at most half (30) of the additional graduates would begin practicing by 2029.

The estimated cost of implementing the recommendation would be $93.5 million over 10 years ($35,000 per student per year based on UC's marginal cost support formula). Over 10 years (2020 to 2029), $79.8 million would be used to fund 228 of the existing slots in the UC PRIME program and would yield 570 graduates ($140,000 per graduate). Over the same 10-year period, $13.7 million would be used to increase the number of slots by 10 per year, which would yield 60 graduates ($228,000 per graduate). The cost per additional graduate during this 10-year period is higher because medical school takes four years to complete. Only six classes of 10 additional graduates each would graduate during this time period.

The majority of new PRIME graduates are likely to be from racial/ethnic groups that are underrepresented in medicine because data from the UC Office of the President indicate that 64% of students enrolled in PRIME programs in 2018 are from underrepresented racial/ethnic groups. The majority of underrepresented students are Latino (66% of underrepresented students, 43% of total students enrolled), the racial/ethnic group that is the most underrepresented in medicine in California. These percentages are higher than the percentages of underrepresented minorities and Latinos among all graduates of California medical schools in 2016–17 (12% and 8%, respectively). The majority of PRIME graduates are likely to practice in California (data from the American Medical Association's Masterfile indicate that 68.7% of all graduates of UC medical schools practice in California). PRIME students are also more likely to care for underserved populations. The UC Office of the President reports that over 60% of graduates of UC Davis's Rural PRIME program practice in rural areas of California. In addition, the high percentage of students from underrepresented racial/ethnic groups suggests that a higher than average percentage of graduates would care for underserved populations because physicians from underrepresented groups are more likely to practice in urban or rural underserved areas. Expansion of PRIME may also increase the number of primary care physicians and psychiatrists in California because the UC Office of the President reports that the majority of PRIME graduates train in specialties in which shortages have been identified, such as primary care, psychiatry, general surgery, and emergency medicine.

The recommendation indicates that UC would consider further expansion of existing PRIME programs or establishment of new PRIME programs that would focus on primary care or behavioral health. If sufficient funds were available, UC would increase the number of students enrolled by 8 to 10 students per year (20% to 25% increase). If UC's marginal cost support formula of $35,000 per UC medical student is used to estimate cost, this proposed expansion of UC PRIME would cost $2.8 to $3.5 million per year. The impact of this proposal on the total number of graduates of California medical schools between 2020 and 2029 is unknown because the recommendation does not indicate when UC would begin enrolling medical students into new PRIME programs.

The impact of this recommendation would be maximized if it were implemented in tandem with the recommendation on increasing the number of primary care residents trained in California by 20%, and if the funded residency programs prioritized admission of graduates of California medical schools.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Appendix A: UC Programs in Medical Education (PRIME)

Rural PRIME (Rural California) at Davis, est. 2007
Incorporates the Davis campus's award-winning model program in telemedicine with a commitment to outreach and rural health care.

PRIME-LC (Latino Community) at Irvine, est. 2004
Emphasizes Latino health issues, including increased proficiency in medical Spanish and in Latino culture.

PRIME (Diverse Disadvantaged) at Los Angeles, est. 2008
Trains physicians to proactively address the needs of diverse communities by delivering culturally competent care and by developing future leadership for multicultural health delivery systems.

PRIME San Joaquin Valley, est. 2011
Provides specialized training for the next generation of San Joaquin Valley physicians by attracting students who have a strong interest in practicing in the region and by leveraging community-academic collaboration to improve the health and health care of the population in the valley.

PRIME-HEq (Health Equity) at San Diego, est. 2007
Builds upon research about health disparities and minority health issues to help students learn and contribute to achieving equity in health care delivery.

PRIME-US (Urban Underserved) at San Francisco, est. 2007
Offers students the opportunity to pursue interests in caring for homeless and other underserved populations in urban communities.

Appendix B: UC PRIME Enrollment 2018–19

Fall 2018 Race/Ethnicity	Rural PRIME (UCD)	PRIME — Latino Community (UCI)	UCLA PRIME (UCLA/ CDU)	PRIME — Health Equity (UCSD)	PRIME — Urban Under-served (UCSF/ UCB)	San Joaquin Valley PRIME (UCSF/ UCM)	Total
Native American / Alaskan Native	0	0	5	0	2	1	**8**
Black / African American	1	1	17	12	16	2	**49**
Mexican-American / Chicano / Latino / Other Hispanic	14	31	56	13	26	12	**152**
Pacific Islander	0	2	1	1	1	6	**11**
Multiple race/ ethnicity (URM)	1	3	1	0	3	0	**8**
Total URMs, other Hispanic/Latinos	16 (43%)	37 (63%)	80 (78%)	26 (51%)	48 (64%)	21 (70%)	**228 (64%)**
Asian American	4	3	17	14	15	6	**59**
White/Caucasian	16	17	5	11	7	2	**58**
Other/nonreporting	1	2	0	0	5	1	**9**
Total enrollment	**37**	**59**	**102**	**51**	**75**	**30**	**354**

Source: Data provided by UC Office of the President based on internal reports.

STRATEGY: ALIGN AND EXPAND EDUCATION AND TRAINING TO PREPARE HEALTH WORKERS TO MEET CALIFORNIA'S HEALTH NEEDS.

Recommendation 2.2: Expand the number of primary care physician and psychiatry residency positions.

Main Takeaway

This recommendation would increase the number of first-year residents in primary care and psychiatry residency programs in California. The number of first-year residents in primary care residency programs would increase by 20% (337 residents per year) between 2018 and 2024, and the increase would be maintained from 2024 to 2029. This would yield an increase of 1,872 graduates of primary care residency programs in California by 2029. Implementing this recommendation could eliminate the projected shortages of primary care physicians in California in 2030, if it is implemented in conjunction with the recommendations that would increase the number of primary care nurse practitioners trained in California. The number of first-year residents in psychiatry residency programs would increase by 152 to 527, which would yield a 247% (375 residents per year) increase in graduates of psychiatry residency programs between 2018 and 2025. The increase would be maintained from 2025 to 2029, which would yield an increase of 2,202 graduates of psychiatry residency programs by 2029. This increase would meet 75% of demand for additional psychiatrists; 25% of demand would be met by psychiatric-mental health nurse practitioners, other mental health professionals, primary care providers, and by early intervention via online or telehealth technologies. The impact of this recommendation would be maximized if implemented in tandem with the recommendations that would increase the number of medical students in California. This recommendation is estimated to cost $1.562 billion in total. Providing start-up funds for new primary care and psychiatry residency programs would use $122.4 million, $703 million to support operating costs of psychiatry residency programs, and $6.1 million to fund a single GME governance structure that would provide oversight of residency programs in primary care, psychiatry, and other specialties.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

A major contributing factor to California's primary care physician shortage is insufficient numbers of physicians completing residency training in primary care to replace those who retire. Despite growing primary care needs, California ranks 32nd in the nation at 9.5 primary care residents per 100,000 population, compared to New York, which ranked first at 31.3.[1] From 1997 to 2012 the annual number of physicians graduating from primary care residency in California steadily declined.[2] In 2018 1,708 first-year residents entered primary care residency programs. California will need to graduate an estimated 337 additional primary care residents per year from 2025 to 2030, an increase of 20%, to alleviate current and projected shortages, assuming that the Commission's recommendation to increase the number of graduates from nurse practitioner education programs (Recommendation 3.1) is also implemented.[3]

California is also facing a severe and growing shortage of psychiatrists, which will have a significant negative impact on access to mental health services.[4] Over the next decade it is projected that California will have 41% fewer psychiatrists than it will need.[5] A large segment of the psychiatrist workforce is aging and approaching retirement.[6]

1. *2017 State Physician Workforce Data Report*, Assn. of Amer. Medical Colleges (AAMC), November 2017, www.aamc.org/data/workforce/reports/484392/2017-state-physician-workforce-data-report.html.
2. Diane Rittenhouse et al., *Guide to Graduate Medical Education Funding in California*, California Health Care Foundation, September 6, 2018, www.chcf.org/publication/guide-graduate-medical-education-funding-california/.
3. Appendix A includes a summary of how estimates were derived by Healthforce Center at UCSF.
4. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/California%E2%80%99s%20Current%20and%20Future%20Behavioral%20Health%20Workforce.pdf (PDF); and Hannah Holzer, "California Needs More Mental Health Professionals — and the Shortage Will Get Worse, Experts Say," *Sacramento Bee*, July 11, 2018, www.sacbee.com/news/local/health-and-medicine/article214019489.html.
5. Coffman et al., *California's Current*.
6. Coffman et al.

Rationale

The main reason that primary care and psychiatry residency programs in California are not growing to meet the demand for more primary care physicians is lack of funding.[7] Residency positions at California institutions are highly subsidized, and funding derives from the federal government, the California government, and private sources. Despite these complexities, and lack of coordination, promising opportunities for primary care and psychiatry residency expansion in California exist.[8]

Two of the most effective strategies for meeting needs for primary care physicians and psychiatrists in California are (1) expanding the size of existing primary care and psychiatry residency programs and (2) establishing new primary care and psychiatry residency programs, especially targeting underserved areas and underserved populations, with an emphasis on community-based settings. The two strongest predictors of where physicians will practice are where they finish residency training and where they were raised.[9] California ranks first in the nation for physician retention after training, with 70% of its physicians who complete residency training in California remaining in the state to practice.[10] In addition, primary care residents provide 600 billable visits per year, on average, providing meaningful service to California's population while in training.[11] Immediate action is needed to begin the lengthy process of expanding and building residency programs and training new residents. Fortunately, there is evidence that filling newly created residency positions will not be a problem: Family medicine residencies within the state are currently overwhelmed with applications each year — in some cases receiving hundreds of applications for a single residency position.[12]

Proposed Action

This proposal includes a five-part strategy to expand the size of existing California primary care and psychiatry residency programs and to establish new primary care and psychiatry residency programs, especially targeting underserved areas and underserved populations, with an emphasis on community-based settings. Implementing this recommendation in conjunction with Recommendation 3.1, which would increase the number of nurse practitioners educated in California, could eliminate the projected shortage of primary care clinicians in 2030 and could alleviate 75% of the projected shortage of psychiatrists in 2030.

1. Secure the future of existing state funding for primary care residency programs.

a. **California's Song-Brown Program** provides funding to support existing primary care residency programs, including those in community clinic–based California Teaching Health Centers, and new primary care residency programs that meet three statutory priorities: (1) attract and admit underrepresented minorities and those from underserved communities, (2) train residents in underserved areas, and (3) place graduates in underserved areas.[13] The program is administered by the Office of Statewide Health Planning and Development. Despite having bipartisan support from the legislature for over 45 years, and the respect of leaders in primary care education statewide, the program's permanent funding is minimal (roughly $2.5 million per year). In 2017, California's budget appropriated a $100 million augmentation to the Song-Brown program over a three-year period (fiscal years 2017–19), resulting in a substantial expansion. Reinstating these funds at $33 million annually and making them permanent beyond 2020 is essential to sustaining and growing residency programs to meet primary care needs by 2030.

7. Rittenhouse et al., *Guide*.
8. Diane Rittenhouse, Alexandra Ament, and Kevin Grumbach, *Recommendations for Graduate Medical Education Funding in California*, California Health Care Foundation, forthcoming.
9. *Improving Health Care Access in the San Joaquin Valley A Regional Approach Through Collaboration and Innovation*, Univ. of California, April 2018, www.ucop.edu/uc-health/reports-resources/san-joaquin-valley/.
10. *2017 State Physician*, AAMC.
11. *California's Primary Care Physician Shortage to Worsen as New Family Medicine Residents Are Forced to Leave State*, press release, California Academy of Family Physicians, March 19, 2015, www.familydocs.org/f/PressReleaseMatchDay2015.pdf (PDF).
12. Rittenhouse et al., *Guide*.
13. Diane Rittenhouse et al., *The Song-Brown Program: Graduate Medical Education in California*, California Health Care Foundation, forthcoming.

b. **Proposition 56: California Healthcare, Research, and Prevention Tobacco Tax Act of 2016** generates new cigarette tax revenue, $40 million of which is to be allocated, annually, by the governor to grow and multiply residency programs in primary care, emergency medicine, and other specialties that have shortages of physicians, especially those serving medically underserved areas and populations. In its first year of disbursement (FY 2017) instead of providing new revenue, the governor allocated the $40 million to the University of California (UC) while eliminating the same amount previously allocated to UC from the general fund, essentially voiding any increase in funding for residency training. In the second year of the disbursement (FY 2018) UC and Physicians for a Healthy California (PHC) signed a memorandum of understanding whereby UC and PHC will collaboratively develop, administer, oversee, and implement a program that follows the provisions of Prop. 56. During FY 2018, PHC and UC have decided to allocate $30.4 million of the $40 million to fund primary care residency programs. Since this is a new source of funding, the allocation of funds to primary care versus non-primary care residency programs may not be the same in future years. The future of Prop. 56 funding for residency programs and Prop. 56's ability to meet California's primary care physician needs relies on the governor to appropriately allocate the $40 million each year. UC will continue to employ its 2019–20 state budget advocacy strategy to seek continuation of Prop. 56 funding, including meeting with the Department of Finance and the transition team for the incoming governor.

2. **Similar to Florida, Georgia, and Texas, use state funds to provide "start-up" matching dollars to up to 35 Medicare graduate medical education (GME) "naive" hospitals in California that have never before sponsored a residency teaching program.**[14] These hospitals typically require start-up funding for two to three years while they establish a new residency training program and become accredited. Matching dollars would incentivize hospitals to invest their own resources. Once accredited, these hospital-based programs can fund their residency positions in perpetuity using federal Medicare residency dollars. Programs could be required to partner with community organizations to increase the diversity of training opportunities for residents. In 2015, California had 260 Medicare GME-naive hospitals, a subset of which could, with the necessary short-term funding and technical assistance, launch new primary care and psychiatry residency programs over the next few years.[15] The recommendation would provide start-up funds to 25 hospitals to establish primary care residency programs and to 10 hospitals to establish psychiatry residency programs. Hospitals could choose to establish either a primary care residency program or a psychiatry residency program or both.

3. **Invest new state funds to establish up to 16 new California Teaching Health Centers.** The federal Teaching Health Center program is an innovative program intended to base primary care and psychiatry residencies in community-based settings. Teaching Health Centers (THCs) are residency teaching sites that are located in Federally Qualified Health Centers (FQHCs), rural health clinics, and tribal clinics. THCs provide care to low-income and otherwise underserved populations and are generally located in federally designated Health Professional Shortage Areas.

   THC graduates are more likely to practice in underserved communities and rural areas and to work in community health centers compared to graduates of traditional residency programs.[16] In California there are currently six THCs. Currently there are no federal dollars available for expanding or establishing new THCs. We therefore propose establishing up to 16 new California THCs using California state dollars. The recommendation would provide start-up funds to 10 clinics to establish primary care residency programs and to 6 clinics to establish psychiatry residency programs. Clinics could choose to establish either a primary care residency program or a psychiatry residency program or both.

14. Rittenhouse, Ament, and Grumbach, *Recommendations*.
15. Rittenhouse et al., *Guide*.
16. Leighton Ku et al., *Teaching Health Centers: A Promising Approach for Building Primary Care Workforce for the 21st Century*, The George Washington Univ., March 10, 2015, http://hsrc.himmelfarb.gwu.edu/sphhs_policy_ggrchn/46.

4. **Invest new state funds to request federal matching funds to expand residency teaching through the Medi-Cal program.**

   a. **Actively explore options for a broad Medi-Cal GME strategy** to provide stable, ongoing federal matching dollars to residency training settings, including hospitals and California Teaching Health Centers. Although most other states fund residency teaching explicitly through Medicaid, California's Medicaid (Medi-Cal) program uses a different hospital payment mechanism, through which payments for teaching are not explicit. Hospitals that receive these funds are not obligated to use them to support residency training. There is currently a Medi-Cal State Plan Amendment under review by the federal government that could bring new Medi-Cal money to designated public hospitals in California, but that money is not earmarked for expansion of residency programs.

   b. **Explore potential use of Proposition 55 funds for primary care residencies.** Prop. 55: Extension to Fund Education and Healthcare (2016) extended a temporary personal income tax on earnings over $250,000 to fund education and health care in California. Up to $2 billion each year was intended for Medi-Cal, through a formula administered by the Department of Finance; some of those funds could have been allocated to residency physician training in shortage areas. However, due to the administration's calculation of the workload budget — a key component of the formula — the approach provided no additional funds for Medi-Cal in 2018–19. The California Hospital Association is committed to advocating for proper administration of the Proposition 55 formula as the voters intended, which could result in hundreds of millions of dollars that may be used to draw matching funds for physician residency training through the Medi- Cal managed care program.

5. **Establish a single statewide governance council**, similar to graduate medical education governance structures in other states, to provide centralized planning, oversight, coordination, advocacy, guidance, and accountability as new residency programs are established in Medicare GME-naive hospitals and in California Teaching Health Centers.[17] The council's purview would encompass residency programs in primary care, psychiatry, and other specialties. The governance structure would coordinate with the work of Song-Brown, the UC-PHC partnership, and other efforts to ensure that residency program development and investment are effectively and efficiently aligned with emerging priority workforce needs. This council should be comprised of California experts in graduate medical education. In addition to championing residency expansion in California, this council could join efforts of other states — for example, the Graduate Medical Education Initiative[18] — to advocate for California at the federal level, promoting reforms such as those recommended by the Institute of Medicine in their 2014 report.[19] The governance council would also explore potential development of a Medi-Cal GME program and other sources of public and private funding for residency programs, as well as the integration of Medi-Cal residencies and associated training funding for nurse practitioners and physician assistants.

Estimated Cost

To expand the size of existing California primary care and psychiatry residency programs and establish new primary care and psychiatry residency programs, especially in underserved areas and for underserved populations, funds are needed to:

- Reinstate and make permanent $33 million in annual funding for primary care residencies through the Song-Brown Program beyond 2020.
- Allocate the voter-approved $40 million in annual funding for residencies from Proposition 56 and use $30.4 million to support primary care residency positions at new California Teaching Health Centers and additional residency positions at hospitals or other facilities that already sponsor residency programs.

17. Rittenhouse, Ament, and Grumbach, *Recommendations*.
18. The GME Initiative, www.gmeinitiative.org.
19. Committee on the Governance and Financing of Graduate Medical Education; Board on Health Care Services; Institute of Medicine; and Jill Eden, Donald Berwick, Gail Wilensky, eds., *Graduate Medical Education That Meets the Nation's Health Needs* (Washington, DC: National Academies Press, 2014), www.nationalacademies.org/hmd/Reports/2014/Graduate-Medical-Education-That-Meets-the-Nations-Health-Needs.aspx.

- Provide start-up funds for up to 35 Medicare GME-"naive" hospitals that have not previously sponsored residency programs to start primary care and/or psychiatry residency programs between 2020 and 2022.
- Provide start-up funds for up to 16 FQHCs, rural clinics, and tribal clinics to establish additional California Teaching Health Centers between 2020 and 2022.
- Provide ongoing funding for additional psychiatry residency positions at California Teaching Health Centers (Proposition 56 funds would be used to support primary care residency positions).
- Provide ongoing funding for additional residency positions at hospitals or other facilities that already sponsor psychiatry residency programs (Proposition 56 funds would be used to support primary care residency positions).
- Establish and sustain a California GME governance structure that would oversee residency training in primary care, psychiatry, and other specialties.

The total cost associated with implementing the proposed strategies is $1.562 billion from fiscal year 2020 through fiscal year 2029. Costs associated with each of the proposal components are described in the table below. Appendix B includes a detailed description of the cost assumptions and calculations.

Cost	Year 1 — FY 2020	Year 2 — FY 2021	Year 3 — FY 2022	Year 4 — FY 2023	Year 5 — FY 2024	Years 6–10 (annual, FY 2025–29)	Total
Song-Brown funding	$33 million	$33 million	$33 million	$33 million	$33 million	$33 million	**$330 million**
Prop. 56 funds*	$40 million	$40 million	$40 million	$40 million	$40 million	$40 million	**$400 million**
Start-up funds, naive hospitals	$14 million	$28 million	$28 million	$14 million	$0	$0	**$84 million**
Start-up funds, new THCs	$6.4 million	$12.8 million	$12.8 million	$6.4 million	$0	$0	**$38.4 million**
Ongoing funds for THC psychiatry residencies	$0	$1.3 million	$4.1 million	$6.7 million	$9.5 million	$10.8 million	**$75.6 million**
Ongoing funds for additional psychiatry residency positions in existing programs	$0	$20.9 million	$41.9 million	$62.8 million	$83.7 million	$83.7 million	**$627.8 million**
New CA GME governance structure	$612,000	$612,000	$612,000	$612,000	$612,000	$612,000	**$6.1 million**
Total	**$94 million**	**$136.6 million**	**$160.4 million**	**$163.5 million**	**$166.8 million**	**$168.1 million**	**$1.562 billion**

*Proposition 56 has been approved by the voters, and $40 million is available for distribution during fiscal year 2018. The proposal is to secure and sustain the annual allocation. During fiscal year 2018, UC and PHC have allocated $30.4 million to fund primary care residency programs. If $40 million is available every year for the next 10 years, and UC and PHC allocate $30.4 million per year to primary care residency programs, a total of $704 million would be available over 10 years.

Impact Summary

Implementing this recommendation, at an estimated cost of $1.562 billion, could eliminate the projected shortage of primary care physicians in California, if implemented in conjunction with the recommendation that would increase the number of primary care nurse practitioners trained in California. The recommendation would increase the number of first-year residents in primary care residency programs in California by 20% between 2018 and 2024 and maintain that increase from 2024 to 2029. The number of first-year residents would increase from 1,708 in 2018 to 2,045 in 2024 and hold steady through 2029, yielding an increase of 1,872 graduates from 2024 to 2029. (Medical educators refer to first-year residency positions as postgraduate year 1 [PGY1] positions because physicians typically enter these positions immediately after they graduate from medical school.) This increase in the number of graduates of primary care residency programs, coupled with migration of primary care physicians from other states to California, would result in an increase in the number of full-time equivalent (FTE) primary care physicians in California in 2030 from 19,289 to 22,501 (an increase of 3,212 FTE primary care physicians).

The recommendation would also meet 75% of projected demand for psychiatrists in 2030. The number of first-year residents in psychiatry residency programs would increase by 152 to 527 per year, which would yield a 247% (375 residents per year) increase in graduates of psychiatry residency programs between 2018 and 2025. The increase would be maintained from 2025 to 2029, which would yield an increase of 2,202 graduates of psychiatry residency programs by 2029. This increase in the number of graduates of primary care residency programs, coupled with migration of psychiatrists from other states to California, would result in an increase in the number of psychiatrists in California in 2030 from 3,609 to 4,962 (an increase of 1,353 psychiatrists). The recommendation assumes that 25% of demand for psychiatrists would be met by psychiatric-mental health nurse practitioners, other mental health professionals, primary care providers, and by early intervention via online or telehealth technologies.The recommendation is estimated to cost $1.562 billion in total. The costs directly associated with producing additional graduates of California primary care residency programs are $400 million in Proposition 56 funds. In fiscal year 2018–19, plans call for allocating $30.4 million of Prop. 56 funds to primary care residency programs at a cost of $75,000 per resident per year. Maintaining funding for the Song-Brown program, which funds primary care residency programs, would cost $330 million, at $33 million per year. Producing additional graduates of psychiatry residency programs would cost $703.3 million. Providing start-up funds for new primary care and psychiatry residency programs would use $122.4 million, and $6.1 million would fund a GME governance structure that would provide oversight of residency programs in primary care, psychiatry, and other specialties.

The recommendation would increase the supply of primary care and psychiatric services in the communities in which the additional primary care and psychiatry residents are trained. Evidence suggests that the 337 additional primary care residents who would enter training in 2024 would generate 202,200 primary care visits per year (600 visits per resident per year). Residents in family medicine, general internal medicine, and general pediatrics would generate 606,600 visits during their three-year residency programs. Residents in obstetrics/gynecology would generate 808,800 visits during their four-year residency program. Psychiatry residents provide outpatient and inpatient care for persons with mental health needs as part of their training.

Training additional primary care residents, and additional nurse practitioner students as proposed in another recommendation, could eliminate a projected statewide shortage of 4,103 primary care clinicians, which could increase access to care. The magnitude of the increase in access will depend on the extent to which these primary care residents remain in California, provide primary care exclusively after they complete residency, and practice in urban or rural communities in California that have shortages of primary care clinicians or practice in settings in which they care for underserved populations.

The recommendation assumes that 80% of additional residents would be trained in primary care residency programs in which 100% of graduates would go on to practice primary care exclusively. If a smaller percentage of funds are awarded to residency programs in which 100% of graduates provide primary care exclusively, the shortage would not be eliminated.

The recommendation documents the existence of 260 GME-naive hospitals in California (as of 2015), but an evaluation of the readiness for and interest level in either is beyond the scope of this analysis. There are currently four THCs with psychiatry residency programs in the entire country, suggesting that operating a psychiatry residency in a THC is a significant undertaking. Literature review, key informant interviews with psychiatry training program directors, and evaluator expertise identified multiple barriers to successful implementation of this recommendation at this scale. In contrast, nationwide THCs in 24 states operate 57 primary care residency programs. Six are in California and additional clinics in California have expressed interest in operating primary care residency programs.

Given the inadequacies of funding, and in the absence of a federated approach to financing physician GME, the decision to devote medical training resources to any particular specialty, is presently determined by the sponsoring institution. Commitments will need to be secured to achieve the target number of primary care and psychiatry residency spots without other incentives or creative negotiation. A GME governance council could address these challenges by providing centralized oversight, coordination, guidance, and accountability for new or expanded residency programs and monitoring the adequacy and distribution of physicians in primary care specialties, psychiatry, and other specialties.

The proposed level of psychiatry residency throughput, however ambitious, would still fall short of the 6,616 psychiatrists needed to meet demand by 2030. The recommendation proposes that additional clinical psychiatric positions be filled by recruiting psychiatrists from outside of California (assume 1,000 over ten years), and by training additional psychiatric-mental health nurse practitioners (PMH-NPs). Although there are currently only 10 PMH-NP programs in California, NP programs tend to have greater flexibility to increase "class size" than residency programs do. Tuition and the cost of operating such programs are also less than those associated with psychiatry residency programs. If approximately 3,000 PMH-NPs were trained over 10 years (and care delivery were augmented with tele-behavioral health and other innovative methods), the pool of providers moves closer to meeting patients' needs, but still does not completely address the demand for psychiatry.

Maximizing the number of graduates of California primary care and psychiatry residency programs who work in underserved areas of the state or care for underserved populations will depend on the extent to which entities that fund primary care and psychiatry residency training prioritize funding (1) existing primary care and psychiatry residency programs that have a strong track record of preparing graduates who practice in underserved areas or that have high percentages of underserved people in their practices (e.g., low-income people, Medi-Cal beneficiaries) and (2) new residency programs sponsored by hospitals or clinics that are in underserved areas or that serve underserved populations, such as California Teaching Health Centers or Medicare GME-naive hospitals (i.e., hospitals that have not previously received funding from Medicare for residency programs) in areas with shortages of primary care and mental health clinicians. Characteristics of residents are also important to increasing the supply of primary care and mental health clinicians who care for underserved Californians. Multiple studies have found that physicians from racial/ethnic groups that are underrepresented in medicine and physicians who grow up in rural areas are more likely to practice in underserved communities.

The impact of this recommendation would be maximized if it were implemented in tandem with the recommendations that would increase the number of students enrolled in California medical schools by 18% to 20%, and if the funded residency programs prioritize admission of graduates of California medical schools. Physicians who complete both medical school and residency in California are more likely to practice in the state than physicians who only complete either medical school or residency in California. Estimates from the American Medical Association suggest that 81% of physicians who complete both medical school and residency in California remain in the state to practice versus 70.4% of physicians who complete only residency in California and 62.8% of physicians who complete only medical school in California.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Appendix A: Estimated Need for Additional Primary Care and Psychiatry Residents Between 2023 and 2030

Healthforce Center at UCSF provided the Commission with an estimate of the number of additional residents needed to alleviate the shortage of primary care physicians by 2030. According to the National Resident Matching Program, 1,708 first-year residents entered primary care residency programs in California in 2018. Healthforce Center estimated that California will need to graduate 337 additional primary care residents per year from 2025 to 2029 to alleviate the projected shortage of primary care physicians. This estimate is based on demand projections for primary care that reflect rates of office visits by age group and gender.[1] Historical data on numbers of newly licensed physicians in California were used to estimate future supply if no action is taken to increase the number of residents trained. Estimates of the number of primary care residents needed to fill the gap between supply and demand were derived from estimates of the percentage of newly licensed physicians in California who completed residency in California and literature on the rate at which physicians who complete primary care residency programs practice exclusively as primary care physicians. The latter adjustment is particularly important because large percentages of physicians who complete general internal medicine or general pediatrics residency programs go on to subspecialize.[2]

Healthforce Center at UCSF also provided the Commission with an estimate of the number of additional residents needed to alleviate the shortage of psychiatrists by 2030. According to the National Resident Matching Program, 152 first-year residents entered psychiatry residency programs in California in 2018. Healthforce Center estimated that California will need to graduate 375 additional psychiatry residents per year from 2025 to 2029 to maintain the current level of use of behavioral health services in California. This estimate is based on a model that the US Health Resources and Services Administration (HRSA) uses to project future demand for behavioral health services.[3] HRSA's national estimates of gaps between supply and demand for psychiatrists were applied to California data on supply to estimate the number of psychiatrists needed in 2030. Historical data on numbers of newly licensed physicians in California were used to estimate the future supply of psychiatrists if no action is taken to increase the number of residents trained.24 The estimates assume that 25% of demand for additional psychiatrists would be met by psychiatric-mental health nurse practitioners, other mental health professionals, primary care providers, and by early intervention via online or telehealth technologies. Based on historical data, the estimates assume that 75% of the remaining demand for additional psychiatrists would be met by training additional psychiatrists in California and that 25% would be met by psychiatrists who migrate to California from other states.

20. Joanne Spetz, Janet Coffman, and Igor Geyn, *California's Primary Care Workforce: Forecasted Supply, Demand, and Pipeline of Trainees, 2016-2030*, Healthforce Center at UCSF, August 15 2017, https://healthforce.ucsf.edu/publications/californias-primary-care-workforce-forecasted-supply-demand-and-pipeline-trainees-2016.

21. Colin P. West and Denise M. Dupras, "General Medicine vs. Subspecialty Career Plans Among Internal Medicine Residents," *JAMA* 308, no. 21 (Dec. 5, 2012): 2241–47, doi:10.1001/jama.2012.47535; and JoAnna Leynaar and Mary Pat Frintner, "Graduating Pediatric Residents Entering the Hospital Medicine Workforce, 2006-2015," *Academic Pediatrics* 18, no. 2 (March 2018): 200–7, doi:10.1016/j.acap.2017.05.001.

22. Coffman et al., *California's Current.*

Appendix B: Detailed Proposal Cost Breakdown and Assumptions

The total cost associated with implementing the proposed strategies is $1.562 billion from 2020 to 2029. Costs include $33 million annually to reinstate and make permanent Song-Brown funding and allocation of the $40 million already approved for residencies through Prop. 56 on an annual basis. A detailed description of the costs associated with each of the five other project components is summarized below.

1. **Start-up funds for Medicare GME-naive hospitals that have not previously sponsored residency programs.** The proposal assumes that 25 of the 260 hospitals in California that have not previously sponsored residency programs would establish a primary care residency program if start-up funds were provided and that 10 would establish psychiatry residency programs. Some hospitals could choose to establish both a primary care residency program and a psychiatry residency program. The proposal further assumes that each of these hospitals would train an average of 30 primary care residents per year (three-year residency program with 10 residents per class) or 24 psychiatry residents per year (four-year residency program with six residents per class). Each hospital would begin training residents in 2021. The first class of primary care residents would graduate in 2024, which would result in an increase of 1,380 graduates of primary care residency programs in California between 2024 and 2029. The first class of psychiatry residents would graduate in 2025, which would result in an increase of 270 graduates of psychiatry residency programs in California between 2025 and 2029. Each of these hospitals would receive $2.4 million in start-up funds over a three-year period ($4.8 million if they establish both a primary care residency program and a psychiatry residency program). Up to 18 hospitals would receive start-up funds from 2020 to 2022, and up to 17 would receive start-up funds from 2021 to 2023. No additional funding would be provided to these hospitals because they would be able to fund their residency positions in perpetuity using federal Medicare dollars. ($84,000,000)
2. **Start-up funds for FQHCs, rural clinics, and tribal clinics to establish new California Teaching Health Centers.** The proposal assumes that 10 FQHCs, rural clinics, or tribal clinics would establish a California Teaching Health Center and train primary care residents if start-up funds were provided and that 6 clinics would train psychiatry residents. Some California Teaching Health Centers could choose to establish both a primary care residency program and a psychiatry residency program. Each of these clinics would receive $2.4 million in start-up funds over a three-year period ($4.8 million if they establish both a primary care residency program and a psychiatry residency program). Eight new California Teaching Health Centers would receive start-up funds from 2020 to 2022, and eight more would receive start-up funds from 2021 to 2023. Additional funding would be needed to cover costs associated with residency positions, as discussed below. ($38,400,000)
3. **Ongoing funds for primary care and psychiatry residency positions at California Teaching Health Centers.** In addition to start-up funds, new California Teaching Health Centers would need ongoing funding to cover costs associated with operating a residency program, because the federal government is not funding additional California Teaching Health Centers, and they are not eligible to receive Medicare payments. The proposal assumes that the 10 new California Teaching Health Centers would train 18 primary care residents per year (three-year residency program with 6 residents per class) and that 6 new California Teaching Health Centers would train 24 psychiatry residents per year (four-year program with 6 residents per class). For primary care, funding would be provided by Proposition 56 for nine years, from 2021 to 2029, and would yield an increase of 330 graduates of primary care residency programs in California during this period. Other sources of funding would be used to achieve an increase of 162 graduates of psychiatry residency programs during the same period. The California Teaching Health Centers would receive $75,000 per resident per year based on funding guidelines that Physicians for a Healthy California and the University of California have established for distribution of Proposition 56 funds. This amount would cover 50% of the estimated cost of training a resident per year ($150,000). New California Teaching Health Centers would need to use their own resources to cover remaining costs. Costs would be phased in from 2021 to 2024 as

additional classes of residents are added to the residency programs. ($101,250,000 in Proposition 56 funds for primary care residents plus $75,600,000 in other funds for psychiatry residents)

4. **Ongoing funds for additional primary care and psychiatry residency positions at facilities that already sponsor residency programs.** Training additional primary care and psychiatry residents at Medicare GME-naive hospitals and new California Teaching Health Centers will not be sufficient to alleviate the projected shortage of primary care physicians and psychiatrists. Estimates prepared for the Commission suggest that California will need to graduate an additional 337 primary care residents and 375 additional psychiatry residents per year between 2024 and 2029 to fill the gap between projected supply and projected demand for primary care physicians. Medicare GME-naive hospitals and new California Teaching Health Centers would graduate an estimated 160 primary care residents in 2024 and 310 residents per year from 2025 to 2029. An additional 81 primary care residents would need to graduate per year from primary care residency programs based at hospitals or California Teaching Health Centers that already sponsor residency programs from 2024 to 2029. Similarly, Medicare GME naive hospitals and new California Teaching Health Centers would graduate an estimated 48 psychiatry residents in 2025 and 96 residents per year from 2026 to 2029. An additional 837 psychiatry residents would need to graduate per year from psychiatry residency programs at hospitals or other facilities that already sponsor residency programs. These additional increases in primary care and psychiatry residents could be achieved by expanding existing primary care and psychiatry residency programs or establishing new programs. These facilities would need funding to cover costs associated with operating a residency program because they would not be eligible for Medicare funds for these additional residency positions. Funding would be provided for nine years, from 2021 to 2029, and would yield an increase of 162 graduates of primary care residency programs and 1,395 graduates of psychiatry residency programs in California from 2024 to 2029. These facilities would receive $75,000 per resident per year based on funding guidelines that Physicians for a Healthy California and the University of California have established for distribution of Proposition 56 funds. ($48,600,000 in Proposition 56 funds for primary care residents plus $627,750,000 in other funds for psychiatry residents)
5. **Funds for a single graduate medical education governance structure.** The proposal assumes that $612,000 per year would be needed from 2020 to 2029 to establish and sustain a single graduate medical education governance structure similar to those in other states that oversee residency programs in all specialties. This governance structure would provide centralized planning, oversight, coordination, advocacy, guidance, and accountability. Funds would be used for salaries and benefits for staff, and travel expenses for experts who would serve on the governing body. The estimate assumes that costs for these administrative expenses would be equal to 5% of the costs associated with providing start-up funds to Medicare naive hospitals and new California Teaching Health Centers to establish new primary care and psychiatry residency programs. Actual costs would be higher in the future if start-up funds were provided to support development of new residency programs in other specialties. Costs associated with providing ongoing funding for new residency positions at new California Teaching Health Centers and existing residency programs through Proposition 56 are not included in this calculation because Physicians for a Healthy California and UC have set aside 5% of Prop. 56 funds to cover administrative expenses. ($6,120,000)

STRATEGY: ALIGN AND EXPAND EDUCATION AND TRAINING TO PREPARE HEALTH WORKERS TO MEET CALIFORNIA'S HEALTH NEEDS.

Recommendation 2.3: Recruit and train students from rural areas and other underresourced communities to practice in community health centers in their home region.

Main Takeaway

This recommendation would increase the number of graduates from California medical schools by 280 to 560 between 2023 and 2030. One hundred eight medical students would receive a full-tuition scholarship for all four years of medical school in exchange for practicing as a primary care physician, psychiatrist, or geriatrician in an underserved area of California for four years. The recommendation also could establish more opportunities for training health professions students and residents in community health centers (CHCs). The estimated costs associated with this recommendation are $64.35 million over 10 years. Operating costs associated with educating students and providing scholarships ($89,018 to $178,035 per graduate) would total $49.85 million ($11.5 million would go to CHCs to support training, and $14.5 million would be used to support the Endorsed Applicant program and the Safety Net Professionals Workforce Institute). The impact of the recommendation would be maximized if implemented in conjunction with the recommendation to increase the number of primary care medical residents throughout California.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

California faces a critical shortage of physicians, with 4,100 more primary care providers needed by 2030 to ensure access to quality care for all residents.[1] While communities of color are projected to represent 62% of the state's population by 2030,[2] less than 5% of practicing physicians are Latino, and only 3% are African American.[3] The provider workforce shortage is worse in medically underserved regions, where 30% of Californians seek care in community health centers (CHCs).[4]

Rationale

A partnership between CHCs and health professions schools can align the recruitment, training, and retention of promising health professions students who want to practice primary care in their own or similar underserved communities. The A. T. Still University (ATSU) Hometown Scholars program is such a model.[5] In this model, CHC leaders identify prehealth students who possess the characteristics that their health center is looking for in a future provider. This often means a student who is from the community, has demonstrated a commitment to working in their CHC or a CHC in another region, and who possesses exceptional potential as a health professional. The CHC leader then submits an additional letter of recommendation in support of the applicant to the health professions school.

This proposal supports California developing its own Hometown Scholars–like program, along with a Safety Net Professionals Workforce Institute (SNPWI) to serve as the backbone organization for cross- sector partners. Unlike the ATSU model, this proposal aims to be adopted across many schools and professions in California. CHC partners in the

1. Joanne Spetz, Janet Coffman, and Igor Geyn, *California's Primary Care Workforce: Forecasted Supply, Demand, and Pipeline of Trainees, 2016-2030*, Healthforce Center at UCSF, August 15, 2017, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/UCSF%20PCP%20Workforce%20Study_Rpt%202%20-%20Final_081517.pdf (PDF).
2. *California's Future Report*, Public Policy Institute of California, January 2018, www.ppic.org/wp-content/uploads/r-118hj2r.pdf (PDF).
3. Janet Coffman, Igor Geyn, and Kristine Himmerick, *California's Primary Care Workforce: Current Supply, Characteristics, and Pipeline of Trainees*, Healthforce Center at UCSF, February 2017, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/Research-Report_CA-Primary-Care-Workforce.pdf (PDF).
4. *Partnering to Succeed: How Small Health Centers Can Improve Care and Thrive Under Value-Based Payment*, California Health Care Foundation, March 2018, www.chcf.org/wp-content/uploads/2018/03/PartneringtoSucceed.pdf (PDF).
5. "Hometown Scholars," A. T. Still Univ., www.atsu.edu/hometown-scholars.

ATSU program, for example, commit significant staffing to ensuring student applicants are eligible for the program, and coordinate and supervise the health professions students. In the California model, a SNPWI would also coordinate faculty training, offer technical assistance, and centralize training schedules, distance education, recommendations, evaluations, and feedback across multiple institutions and professions. Keys to this proposal are (1) CHC involvement and (2) training students in hometown communities because they are more likely to remain in the practice setting where they are trained.

Proposed Action

This proposal would develop a Hometown Scholars program at UC and other health professions schools with the following components:

1. **New Endorsed Applicant Program** where CHC leaders nominate highly qualified students to medical, nursing, nurse practitioner (NP), and physician assistant (PA) programs with the expectation that these students will spend some amount of their clinical training (e.g., one clinical year) at the CHC and then choose to stay in the region to practice. Aligned with the CHCs, endorsed applicant students will come from rural areas or other underresourced communities and receive special consideration for admission to the health professions school as California community medicine scholars meeting the workforce needs of the state. The UC Davis School of Medicine is prepared to pilot this program with the California Primary Care Association (CPCA) and rural CHCs with capacity in 2019 and 2020. In conjunction with the Safety Net Professionals Workforce Institute (see below), the Endorsed Applicant program model will be shared with other health professions schools and CHCs in additional rural and other underresourced communities, starting in 2021.
2. **New Community Medicine Track, modeled after the UC PRIME programs.** The track is aimed to recruit and support community-oriented primary care students to train in CHCs and practice in primary care / prevention, behavioral health, or geriatrics within CHCs (as physicians, NPs, and PAs). Many (not necessarily all) will come from the Endorsed Applicant pool. A new Community Medicine Track could be piloted to recruit students entering in 2020. Like the UC PRIME model, the program could be adopted at other schools and for other health professions based on strength and capacity. In the pilot, the medical school model includes one clinical year at the CHC. CHCs would receive a stipend per student and be expected to meet quality expectations for education, patient experience, and clinical placement; provide supervision, teaching, and access to video or in-person classes as required at the home institution; and ensure safe housing. Models for other specialties would be developed based on the pilot experience.
3. **Tuition-free or significantly reduced cost of health professions training** in primary care, behavioral health, or aging. Students who complete the Community Medicine Track could have their professional school tuition paid in return for a 1:1 service commitment (practicing one year post-training in a medically underserved area for each year of paid tuition received).
4. **Safety Net Professionals Workforce Institute** would be established immediately to bring together health professional schools and CHCs and serve as a backbone organization for cross- sector coordination, reduce the administrative burden incurred by training students in busy clinical environments, and create more clinical placements and residencies in participating CHCs. It would track quality expectations in the teaching CHCs; administer CHC financial support; ensure robust representation of rural students and sites (estimated 70% rural in each year); and coordinate revising rural versus urban ratios based on emerging workforce needs. It could partner with regional health pathway programs, academies, and workforce initiatives throughout the state to assist with recruitment, support, and placement of target local students.

The UC Davis School of Medicine, the Betty Irene Moore School of Nursing, CPCA, and 10 leading rural CHCs are already committed to this model. Two of the CHCs are current partners in the ATSU Hometown Scholars program and

host over 30 ATSU doctor of osteopathic medicine (DO) and NP students each year. These efforts and partnerships are positioned to pilot a California version of the program.

Critical to program success is the Safety Net Professionals Workforce Institute, which would require sufficient investment to start and sustain operations. With the Hometown Scholars model taking seven years to produce its first licensed physician (three to four years of medical school, three years of residency), CHCs with urgent workforce needs may wish to include physician assistant and nurse practitioner tracks in the program.

Estimated Cost

Multiyear initial investments would be needed for start-up, centralized support, and expansion based on the UC Davis partnership with CPCA and CHCs.

Safety Net Professional Workforce Institute: $1 million per year, $10 million total.
To staff a central office to provide training and technical assistance on delivering the Hometown Scholars model at partnering institutions. The central office will also work to ensure compliance with regulatory and accrediting bodies to facilitate uptake from other academic and community partners. Between five and eight staffers, including physician/provider effort, are required to design, implement, and evaluate the effort.

Endorsed Applicant Program Pilot: $250,000 per year, $500,000 total.
Funds would cover FTE staff within the health professions school and at CHCs as they work to develop and test the model. This will include faculty, provider, and administrative staff to operationalize the program. Funds for the pilot will also support a comprehensive evaluation using an implementation science framework. This will ensure that program leaders have the information required to replicate and scale the model within a variety of contexts. Pilot test years would include exploration of nursing, nurse practitioner (NP), and physician assistant (PA) partners.

Endorsed Applicant Program Dissemination and Student Support: $500,000 per year, $4 million total.
Allows work initiated in the pilot to spread to new sites. Costs include staff salaries to spread the model to private DO and MD schools as well as NP, PA, and behavioral health programs and funds to support housing costs for student rotations at CHCs. Costs also cover travel to regional and national conferences to disseminate the outcomes of the project. Funds would be housed within the Safety Net Professional Workforce Institute.

Community Medicine Track: $200,000 per track, $16.8 million total.
For health professions faculty FTE to establish and lead the program. Also covers dedicated education coordinators and other staff support for the tracks. Stipends for students to complete community medicine–focused research and quality-improvement activities will also be provided. Estimated $200,000 per track, with 2 schools funded per year for the first two years and 10 schools for the subsequent eight years. Tracks in nursing, NP, and PA programs can be substituted.

Scholarships for 50 Trainees: $50,000 per trainee, $21.5 million total.
Tuition and fees for 10 new trainees in year 1, 20 in year 2, and 50 annually for eight additional years. Tuitions and fees are estimated at $50,000 per student annually.

Stipends to Community Health Centers: $35,000 per trainee, $11.55 million total.
In the pilot, the medical school model includes one clinical year at the CHC. CHCs would receive a stipend per student and be expected to meet quality expectations for education (based on student satisfaction, faculty development) and experience with patients (based on breadth of conditions); provide supervision, teaching, and access to home school teaching (e.g., evaluations, videoconferencing availability); and ensure safe housing. In the medical school model, CHCs would qualify for $35,000 per year per student. Additional stipends to support housing costs would be available through the workforce institute. Models for other specialties would be developed based on the pilot experience. Covers 10 new trainees in year 3, 20 in year 4, and 50 annually for six additional years.

Cost	Year 1	Year 2	Year 3	Year 4	Years 5–10 (annual)	Total (10 years)
Safety Net Professionals Workforce Institute	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	**$10,000,000**
Endorsed Applicant program pilot	$250,000	$250,000				**$500,000**
Endorsed Applicant program dissemination			$500,000	$500,000	$500,000	**$4,000,000**
Community Medicine Track	$400,000	$400,000	$2,000,000	$2,000,000	$2,000,000	**$16,800,000**
Scholarships for 10 trainees in year 1, 20 trainees in year 2, and 50 trainees in years 3–10	$500,000	$1,000,000	$2,500,000	$2,500,000	$2,500,000	**$21,500,000**
Stipends to CHCs for clinical training (first trainees enter CHCs in year 3)	—		$350,000	$700,000	$1,750,000	**$11,550,000**
Total	**$2,150,000**	**$2,650,000**	**$6,350,000**	**$6,700,000**	**$7,750,000**	**$64,350,000**

Impact Summary

This recommendation would establish new community medicine tracks at 10 California medical schools at a cost of $64.35 million over 10 years. The increase in the number of first-year students enrolled in California medical schools would be phased in between 2019 and 2023. When the increase is fully implemented in 2026, 200 to 480 additional medical students would be enrolled in California medical schools per year, an increase of 3% to 7%, depending on whether enrollment at medical schools other than UC Davis increases by 50 or 100 students.

The first class of 20 additional students would graduate from medical school and enter residency training in 2024. A total of 280 to 560 additional physicians would graduate from California medical schools and enter residency between 2024 and 2030. Students who graduate in 2024 and complete a residency in a primary care specialty would enter practice as early as 2027.

The estimated costs associated with this recommendation are $64.35 million over 10 years. Operating costs of $49.85 million are associated with educating students and providing scholarships ($89,018 to $178,035 per graduate) depending on whether enrollment at medical schools other than UC Davis increases by 30 or 100 students per year). Support for the Endorsed Applicant Program and the Safety Net Professionals Workforce Institute would cost $14.5 million.

The majority of additional graduates are likely to practice in California, because data from the American Medical Association's Masterfile suggest that 62.8% of graduates of California medical schools practice in the state. At least 108 of these additional medical students would practice in an underserved area of California for four years following residency because they would receive a full-tuition scholarship for all four years of medical school in exchange for practicing as a primary care physician, psychiatrist, or geriatrician in an underserved area of the state for four years. The scholarships, which are valued at $50,000 per year ($200,000 over four years of medical school), would substantially reduce students' educational debt. In 2017, 73% of students at MD-granting medical schools had educational debt, and the average amount of debt was $190,694. In addition, students who are endorsed by CHCs may be especially likely to practice in rural or urban underserved areas over the long term because these students will have grown up in underserved areas and will have demonstrated interest in practicing in the areas served by the CHCs that endorse them. Studies have consistently found that physicians who grow up in rural areas are more likely to practice in rural areas and that physicians who grow up in underserved urban areas are more likely to practice in those areas.

The percentages of additional graduates who would be from disadvantaged backgrounds or racial/ethnic groups that are underrepresented in medicine is unknown but is likely to be higher than the percentages of all California medical school graduates. Students who are endorsed by CHCs are more likely to come from a disadvantaged background because people raised in medically underserved communities often experience high rates of poverty. Students endorsed by urban CHCs and some rural CHCs are more likely to be from underrepresented racial/ethnic groups because underserved communities in urban areas of California have high percentages of African American and Latino populations and because some rural areas have high percentages of Latinos or Native Americans community members.

The recommendation may also increase training opportunities for health professions students and residents in CHCs. The recommendation also proposes to establish a Safety Net Professionals Workforce Institute that would facilitate coordination between CHCs and health professions schools, which could reduce the administrative burden associated with training health professionals in CHCs and encourage more CHCs to provide training.

The impact of this recommendation would be maximized if it were implemented in tandem with the recommendation to increase the number of primary care residents trained in California by 20%, and if the funded residency programs prioritized admission of graduates of California medical schools.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

STRATEGY: ALIGN AND EXPAND EDUCATION AND TRAINING TO PREPARE HEALTH WORKERS TO MEET CALIFORNIA'S HEALTH NEEDS.

Recommendation 2.4: Expand medical school enrollment at public institutions for the benefit of medically underserved areas.

Main Takeaway

To ensure that the state has an adequate supply of primary care physicians to meet the health care needs of its population, expansion of medical student enrollment will be required. This recommendation has three components, totaling $730–$755 million over 10 years.

The first component would expand three-year medical school programs resulting in 498 additional graduates of California medical schools between 2023 and 2029. When fully implemented, the recommendation would yield a 6% increase in the number of people graduating from California medical schools per year. One hundred forty-seven medical students would receive a full-tuition scholarship for all three years of medical school in exchange for practicing as a primary care physician, psychiatrist, or geriatrician in an underserved area of California. The recommendation would also increase the numbers of physicians from groups that are underrepresented in medicine, from disadvantaged backgrounds, or who speak a language other than English. The estimated costs associated with this program are $117.8 million over 10 years. Operating costs of $35.3 million for the 248 students at UC Davis (including 147 full-tuition scholarships) would be $142,339 per student; an additional $2.5 million is allocated for a consortium to share best practices and accelerate evaluation of three-year programs. The recommendation also includes $80 million to establish two new three-year medical schools in rural areas. The second component would expand a branch campus of the University of California San Francisco (UCSF) School of Medicine in the San Joaquin Valley that would graduate 66 medical students between 2023 and 2028, many of whom are likely to be from the region and from racial/ethnic groups that are underrepresented in medicine. Implementing this part of the recommendation would cost $167.5 million over 10 years, which would consist of $20 million in capital costs and $147 million in operating costs ($2.2 million per graduating student). Thereafter, the annual operating cost would be $21.5 million to produce 50 graduates each year ($430,000 per graduating student).

In addition, this recommendation would increase the number of first-year medical students at the University of California Riverside (UCR) medical school from 70 students in 2019 to 125 students annually from 2023 to 2028, enabling the school to scale to full enrollment. As a result, the number of graduates of California medical schools would increase by 110 to 130 graduates by 2028. The recommendation would also increase the number of medical residents by 240 per year. The additional medical residents at UCR would provide 144,000 patient visits per year, which would increase availability of medical care in the Inland Empire, the region of California with the largest shortage of physicians. Some of the additional medical school graduates are likely to practice in the Inland Empire after graduation. Implementing this recommendation would cost $445–$470 million over 10 years: $370 million in operating costs and $75–$100 million in capital costs.

The impact of these recommendations would be maximized if implemented in conjunction with the recommendation on increasing the number of primary care medical residents throughout California.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

California faces a critical shortage and persistent maldistribution of primary care (PC) physicians. To ensure access to quality care for all Californians, the state will need to supply 4,100 more PC physicians by 2030 and address the diversity gap between the physician workforce and the California population.[1] In contrast to our majority-minority state, only 7% of physicians are Latino, and 3% are African American.[2] Approximately 7,000 students are enrolled in California's existing 12 medical schools. On a per capita basis, California's medical school enrollment is the third

1. Joanne Spetz, Janet Coffman, and Igor Geyn, *California's Primary Care Workforce: Forecasted Supply, Demand, and Pipeline of Trainees, 2016-2030*, Healthforce Center at UCSF, August 15, 2017, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/UCSF%20PCP%20Workforce%20Study_Rpt%202%20-%20Final_081517.pdf (PDF).
2. Janet Coffman, Igor Geyn, and Kristine Himmerick, *California's Primary Care Workforce: Current Supply, Characteristics, and Pipeline of Trainees*, Healthforce Center at UCSF, February 16, 2017, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/Research-Report_CA-Primary-Care-Workforce.pdf (PDF).

lowest in the nation (18.4 students per 100,000 population, in contrast to a national median of 30.3 per 100,000 population).[3] Increasing the supply of PCPs will require expanding medical school enrollment. State funding will be critical for expanding medical education opportunities for California students and producing more physicians to meet state needs.

While the limited supply of PCPs is a statewide challenge, two regions face particularly acute shortages:

- The San Joaquin Valley (SJV) — Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties — is one of fastest-growing and least healthy regions of California. With a population of more than four million, the region has some of the poorest air quality and highest rates of poverty and uninsured populations in the state and nation.[4] Approximately 41% of the population is covered by Medi-Cal, and among California's 58 counties, Fresno, Kern, Madera, and Tulare rank as 52nd, 53rd, 49th, and 50th, respectively, for health outcomes.[5] The SJV's long-standing shortages in health care professionals contribute substantially to the region's poorer health outcomes.[6] A June 2017 UCSF workforce assessment, *Current & Future Health Professions Workforce Needs in the San Joaquin Valley* (PDF), found that the SJV has a significantly lower supply of physicians compared to the state supply, with the per capita supply varying widely across SJV counties. In 2015 there were 138 active physicians per 100,000 SJV residents, well below the California average of 237. In addition, 30% of physicians in this region are age 60 or older and likely to retire within the next 10 years. This anticipated exodus increases the urgency for developing new plans to meet health care needs.
- Another region of concern is Inland Southern California, which has the greatest shortage of primary care and specialist physicians of any region in California, according to the California Health Care Foundation.[7] In August 2013, the UC Riverside School of Medicine (UCRSOM) welcomed its first class of 50 students and began carrying out the mission of addressing the health needs of the Inland Empire (IE), with a special focus on primary care. When UCRSOM opened, it was the first public medical school to have been established in California in more than 40 years. While private institutions have begun planning or developing medical schools, there are no plans in place to develop another public medical school. With the ongoing shortage of physicians in the region, UCRSOM faces substantial funding challenges in meeting regional needs. Future growth at UCR will not be possible without additional stable operating revenue to support increased numbers of students and faculty. It should be noted that UCRSOM's preliminary accreditation by the Liaison Committee on Medical Education (LCME) was initially denied because of concerns about the state's ability to provide adequate funding. LCME monitoring of UCRSOM resources continues, including evaluating levels of state support. Stable, ongoing operating revenues are required to teach more students, maintain program quality, and meet national requirements for LCME accreditation.

Rationale

Holistic recruitment, tailored training, and reducing education debt can increase primary care supply and improve geographic distribution. These strategies are significant elements of this proposal. Although all California medical schools are preparing and training future physicians for practice, UC schools overwhelmingly serve California students and have a record of success graduating physicians who practice in California, particularly when those graduates complete residency training in the state. Accelerated programs save a year of time in school and debt for qualified students, particularly for those interested in primary care, and can be modeled at other schools. Expanding enrollment at UCR and launching a branch campus in the San Joaquin Valley closely align with regional workforce needs and interests in expanding medical student educational opportunities and aligning these efforts across a continuum, from pipeline to practice.

3. *Improving Health Care Access in the San Joaquin Valley: A Regional Approach Through Collaboration and Innovation*, Univ. of California (UC), April 2018, www.ucop.edu/uc-health/_files/uc-sjv-final-report-april-2018.pdf (PDF).
4. UC, *Improving*.
5. UC.
6. UC.
7. Janet Coffman, Igor Geyn, and Margaret Fix, *California Physicians: Who They Are, How They Practice*, California Health Care Foundation, August 9, 2017, www.chcf.org/publication/california-physicians-who-they-are-how-they-practice/.

It is important that these proposed expansions be viewed as opportunities for innovation that include new educational models involving interprofessional training and team-based approaches to patient care. Efforts to significantly increase the diversity of the physician workforce should be vigorously pursued, with stable funding provided to support best practices and model programs. Innovative approaches to teaching, including telemedicine, distance learning, and use of new technologies should be utilized and supported.

Expand three-year medical school programs. Since 2013, the UC Davis School of Medicine (UCDSOM) has trained 29 primary care–bound students to complete their MD degrees in three years through a program called Accelerated Competency-Based Education in Primary Care (ACE-PC).[8] Students start medical school early, have a longitudinal PC clinic starting in the first week, and complete a curriculum tailored for a career in PC. Most of the eliminated weeks are from the traditional fourth year, during which other students explore specialty careers. Nearly 80% of ACE-PC students are from disadvantaged backgrounds, 60% are from a community underrepresented in medicine, and 75% speak a second language that is not English. ACE-PC students' undergraduate GPAs range from 3.5 to 3.7, and MCAT scores range from the 69th to the 78th percentile. ACE-PC students graduate with less education debt and enter the PC workforce one year earlier than their peers. All ACE-PC students receive $20,000–$45,000 scholarships funded by the Permanente Medical Group (TPMG) and UCDSOM. Funding from TPMG has been expended, so incoming students in 2019 will have significantly less scholarship support available at a time of critical need for accelerated production of more primary care providers with the backgrounds and language capabilities of graduates from ACE-PC.

Each year, more US medical schools offer the three-year MD as part of the solution to the PC shortage. As of 2018, 18 schools offer three-year PC campuses (e.g., NYU Winthrop, University of Wisconsin–Green Bay, Cooper Medical School) or pathways (e.g., Penn State, Texas Tech, UNC).[9] Others offer education based on flexible competency (e.g., Oregon Health Sciences University, Vanderbilt) to permit early graduation for students who demonstrate competence. To date, UC Davis is the only California medical school to offer a three-year MD. The primary factors limiting growth of this innovative program include faculty capacity, clinical site capacity, preceptor faculty development, and student financial aid. Aligning medical schools, health systems, and the California Primary Care Association (CPCA) will galvanize graduate medical education training (and subsequent practice) opportunities in areas of need throughout California.

Expand the San Joaquin Valley branch campus of UCSF Fresno. A UC branch campus in the SJV, targeting potential students interested in practicing there, could build upon the existing foundation at UCSF Fresno and its long-standing contributions toward improving health outcomes and access to care in the region. Such an effort could occur by creating a new program focused on expanding regional opportunities for medical education, providing increased opportunity for high school and college students from the region to prepare and become competitively eligible for admission. This effort would also reduce physician shortages to help address some of the region's most pressing health issues. The UCSF School of Medicine leadership and UCSF Fresno leadership and faculty have the expertise required to successfully design, develop, and implement a new branch campus. Leveraging the skills and experience available at UCSF and working together with partnering campuses would ensure top-quality education and training for medical students in the SJV.

Rather than developing a wholly independent campus, expanding a UCSF Fresno branch campus offers strategic advantages with respect to cost savings, timing, curriculum, program quality, accreditation, and the well-respected core education, research, and public service missions of UC.

8. These data are from UC Davis School of Medicine internal reports.
9. *Consortium of Accelerated Medical Pathway Programs*, NYU Langone Health, https://med.nyu.edu/education/md-degree/accelerated-three-year-md/consortium-accelerated-medical-pathway-programs.

Expand the UC Riverside Medical School. Although identifying funding sources is a challenge, finding qualified applicants is not. For the 2018–19 year, total enrollment includes 254 medical students.[10] For the entering class in fall 2018, UCRSOM received applications from 5,633 students, and 140 admission offers were made for an entering class of 70 students. The first-year class is 50% female and 50% male, 21.4% self-identified as underrepresented in medicine, approximately 37% identified as disadvantaged (English as a second language, first in family to complete college, socioeconomically and/or educationally disadvantaged), and 50% completed high school as California residents. In recognition of its mission and commitment to diversity, UCRSOM was recently recognized as 1 of 35 institutions of higher education to receive the national 2018 Health Professions Higher Education Excellence in Diversity Award.[11]

Sustainability and expansion of the UCR School of Medicine directly contributes to all aspects of the Commission's overarching goals, including producing California physicians with the capacity, competencies, agency, and diversity to improve health equity and well-being in the region and to help close health gaps within and across populations.

Proposed Action

This recommendation proposes three distinct, yet related courses of action to increase medical school enrollment in California: (1) expand three-year medical school programs, (2) expand the San Joaquin branch campus of UCSF Fresno, and (3) expand the UC Riverside Medical School.

1. **Expand the current three-year MD pathway and replicate it on new rural regional campuses:**
   - **Expand the current three-year MD program at UC Davis.** Over the course of five years, expand the cohort from 6 per year (current) to 50 students per year, with a focus on PC careers: family medicine, primary care internal medicine, pediatrics, psychiatry, and geriatrics.
   - **Provide full-tuition scholarships for ACE-PC trainees.** Applies to 147 trainees with financial need who commit to practice primary care, geriatrics, or psychiatry in a medically underserved area (per state or federal guidelines).
   - **Create three-year MD rural regional campuses.** Leverage technology and regional partnerships to create and sustain three-year MD rural regional campuses in Northern California (Redding or Modesto) and in Southern California for 25 students per year at each campus.
   - **Support best practices and data.** Form a consortium of MD and DO three-year programs and CPCA to share best practices and coordinate evaluation of accelerated training programs in California.
2. **Expand the San Joaquin Valley branch campus of UCSF Fresno:**
   - Secure permanent state funding for the development and operation of a new/expanded SJV branch campus of the UCSF School of Medicine, which would build on the existing UCSF School of Medicine (and the UCSF Fresno program) and would target prospective students interested in practicing in the valley.
   - Create pathways for high school and college students. Make opportunities, such as premed education, available for the region's high school and college students to become competitively eligible for admission to the new regional medical school geared toward addressing community needs.
   - Develop the infrastructure needed to support implementation of a full four-year curriculum located within the Central Valley. Begin with an expanded class of 12 first-year medical students at the UCSF main campus for the first phase of their curriculum, who would then transition to the UCSF Fresno campus for the final two phases of their medical education curriculum (i.e., for core and advanced clinical clerkships and scholarly projects). During this initial phase of expansion, additional faculty should be recruited. Once this is achieved, enrollment should target 50 students per year.

10. These data are from UC Riverside School of Medicine internal reports.
11. "2018 Health Professions HEED Recipients," Insight Into Diversity, n.d., www.insightintodiversity.com/about-the-heed-award/2018-health-professions-heed-recipients/.

3. Expand the UC Riverside Medical School:

- Secure financial resources to sustain infrastructure. Work with key stakeholders (including UC Office of the President and UCR leadership, the state, and the local community, including clinical providers) to identify and secure increased, permanent operating resources to build and sustain the infrastructure required for enrollment of approximately 125 students per incoming class (or a total enrollment of 500 students). Current state funding continues to be limited to $15 million in general fund support per year, which is insufficient for meeting operating revenue needs. Effective, stable investment is needed to meet current operating and capital needs before further growth is possible.
- Develop new community-based clinical programs. To continue and expand UCRSOM's positive, significant impact on the region's health workforce, the institution will need to secure sufficient additional funding and develop new clinical programs in the community. With its focus on students from the IE, UCRSOM is also expected to improve equity of regional educational opportunities. Educational pipelines are critical to long-term success. Given the importance of increasing the number of primary care providers who can meet the region's health workforce needs and reflect its population demographics, funding should be linked to accountability for fulfillment of UCRSOM's mission. This proposal has synergy with other strategies, including increasing medical school enrollment capacity, expanding regional access, and improving health workforce diversity.

Estimated Cost

This recommendation has three components, each with significant resource requirements. Dedicated, ongoing state and other public funding, as well as new philanthropic support, will be required in order to move forward with planning and future development of this proposal to support the operating budget needs of a high-quality medical education, as well as the capital needs that will be required to expand enrollment. The pressing need for scholarship support among this group will likely be greater than that of traditional medical students, as students from these regions and rural areas often experience economic disadvantage. Collectively, the expansion would occur over a 10-year timeline, as outlined in the tables and described below.

Estimated costs of **expanding three-year medical school programs:**

Cost	Year 1	Year 2	Years 3–10 (annual)	Total
Expand from 6 to 10 students at UCD	$140,000			**$140,000**
Expand to 30 students at UCD in year 2, and 50 thereafter		$840,000	$1,540,000	**$13,160,000**
Scholarships for 147 trainees (10 in year 1, 30 in year 2, a total of 107 from years 3–10)	$500,000	$1,500,000	$2,500,000	**$22,000,000**
Consortium to share best practices	$250,000	$250,000	$250,000	**$2,500,000**
Three-year rural campus			$10,000,000	**$80,000,000**
Total	**$890,000**	**$2,590,000**	**$14,290,000**	**$117,800,000**

Expand the current three-year MD program at UC Davis. UC Davis and the UC Office of the President estimate the marginal cost at $35,000 per student per year. Accelerated training demands a defined parallel program with a school of medicine. This cost represents 50% of the estimated training costs and would follow the student. That is, the funds would support preclinical training at the school of medicine, then move to support clinical training in the outpatient clinic or hospital. The clinical training for these students is heavily weighted in outpatient settings (community clinics, nursing homes, etc.) and in distant community sites that will require housing for visiting students. Over the course of five years, the cohort will initially grow from 6 per year to 50 students per year, with a focus on PC careers: family medicine, primary care internal medicine, pediatrics, psychiatry, and geriatrics.

Provide full-tuition scholarships for 147 PC trainees. Massive debt is a major deterrent for students choosing PC careers. The cost estimate includes tuition and fees for 10 new trainees in year 1, 20 new trainees in year 2, and a total of 107 trainees from years 3–10. Tuitions and fees are estimated at $50,000 per student annually.

Create three-year MD rural regional campuses. Training in a community supports students in staying to practice in that region, yet the opportunities to train in rural California are extremely limited. These funds would support the exploration and development of two rural regional campuses that leverage technology to maximize training time in the rural setting. Campuses could be designed for physician, nurse practitioner, and physician assistant training, with the potential to add other disciplines. The cost to create a new campus for 25 students per year is estimated to be upward of $10 million per year.

Support best practices and data. An ambitious plan to address the PC workforce needs of California requires sustained and centralized support for development and dissemination. These funds would support a small staff to coordinate sharing of best practices and evaluation of accelerated training programs in California.

The estimated costs for **launching a full four-year branch campus at UCSF Fresno:**

- $167.5 million for the first 10 years, including $20 million in capital expense
- $21.5 million annually after that

This amount includes an estimated $20 million in capital expenses to build and equip a new education building by 2023–24 to accommodate the class increase from 12 students per year to 50 students per year. It is expected that tuition revenue will cover approximately 22% of the total expenses (beginning in year 4). This assumes enrolling 6 students in the first year of operation, 12 students per year in years 2–6, and 50 students per year in years 7–10.

Cost	Years 1–4 (start-up)	Years 5–10 (annual)	Years 10+ (annual)	Total (first 10 years)
Capital expenses	$20,000,000			**$20,000,000**
Launch and operation of branch campus		$24,584,000	$21,500,000	**$147,500,000**
Total	**$20,000,000**	**$24,584,000**		**$167,500,000**

Beyond the first 10 years, $21.5 million per year will be required over and above tuition revenues. One option for meeting initial 10-year costs plus the $21.5 million annual expense beyond the first 10 years would be through the creation of an endowment of $500 million that could generate the operating revenue that (together with student fees) would be required, based on regional, state, and national assessments. The amount would also fund the second part of the strategy — developing a pipeline. Although in 2018, Assemblymember Adam Gray introduced AB 2202 to establish the San Joaquin Valley Regional Medical Education Endowment Fund, the bill — which passed — did not include the $500 million appropriation needed to generate ongoing funding for operating the branch campus. AB 2202 was signed by the governor in September 2018. New and ongoing efforts will be required to raise the $500 million.

The estimated costs of **expanding the UC Riverside Medical School:**

Operating and Capital Expenses	Years 1–4 (2019–22)	Years 5–10 (2023–28)	Total
New operating revenues	$25 million annually	$45 million annually	**$370 million**
Capital investment to grow enrollment	$75–$100 million total		**$75–$100 million**
Total	**$100–$125 million**	**$45 million**	**$445–$470 million**

While the initial funding resources helped launch the school of medicine (SOM), an increase in stable operating revenues will be necessary to sustain it and to enable its development. Approximately $45 million in new annual operating revenues is estimated to achieve the goals of the medical school. Among SOM's goals are to (1) increase enrollment

from 70 first-year students (in fall 2018) to 125 students per class (or 500 students total) and (2) increase current enrollment of approximately 260 medical residents to roughly 500 total. UCRSOM's flat funding of approximately $15 million annually (with an additional $4 million linked to the historic joint program with UCLA) does not provide sufficient operating revenue for the full development of the school.

This proposal calls for a two-phased approach to secure the level of permanent, stable new operating revenues required to meet the SOM goals. The first phase would increase operating revenues by $25 million annually to address UCRSOM's existing operating needs and fund growth to a total of 70–75 students per class (280–300 across all four years). It would also support some ongoing growth in residencies. The second phase, to commence only after sufficient space, clinical placements, and faculty are in place, would increase permanent operating revenues by an additional $20 million per year, which would enable growth to full enrollment (500 students across all four years). This funding, along with financial contributions from other affiliates, would support additional growth to the target level of 500 residencies.

Substantial capital investment is required after phase 1 to accommodate phase 2 growth goals. Space constraints are such that SOM is nearing maximum enrollment levels with the number of current students enrolled. Little or no growth will be possible until there is new educational space for students and faculty, and until there is greater certainty about sufficient access for clinical clerkships. To meet goals for enrollment growth, and to remain in compliance with the LCME standard for sufficiency of faculty, the SOM will need to recruit and retain new faculty, yet there is no near-term capital plan or funding available for meeting these needs in the near term. Additional capital investment of $75 million to $100 million is needed to enable the school to grow beyond the 2018 first-year enrollment and scale to full enrollment levels.

Impact Summary

The three proposed actions would improve in-state retention of physicians, cultural competence, and the likelihood of underrepresented physicians practicing in underserved areas. The impact of the three proposed actions would be maximized if implemented in tandem with Recommendation 2.2 Primary Care and Psychiatric Residencies, and if the residency programs funded prioritized admission of graduates of California medical schools. Supporting a small staff to coordinate sharing of best practices and evaluation of three-year medical school programs in California could facilitate more rapid dissemination of information regarding the outcomes of these programs and best practices.

Expand three-year medical school programs.

This recommendation would increase the number of California medical school graduates by 498 between 2023 and 2029, 147 of whom would receive a full-tuition scholarship for all three years of medical school in exchange for practicing as a primary care physician, psychiatrist, or geriatrician in an underserved area of California. The increases are the result of four additional students a year graduating from UC Davis's three-year program in 2023, 24 additional students in 2024, and 44 additional students per year from 2025 to 2029 (for a total of 248) plus 50 students per year graduating from two new rural three-year medical school programs from 2025 to 2029 (250 total). These changes would yield a 6% increase in the number of California medical school graduates per year over the number of graduates in 2016–17.

The estimated costs associated with this recommendation are $117.8 million over 10 years. These costs include operating costs of $35.3 million to train and provide full-tuition scholarships to students at UC Davis ($142,339 per graduate) and $2.5 million for a consortium to share best practices and accelerate evaluation of three-year programs. The recommendation also includes $80 million to establish two new three-year medical schools in rural areas but does not indicate the proportion of these expenditures allocated to operating and capital expenses.

Given that UC Davis's three-year medical school program partners with residency programs in family medicine, primary care internal medicine, pediatrics, psychiatry, and geriatrics, most graduates of the first UC Davis class would enter practice in 2026 or 2027. These medical students would enter practice one year sooner than graduates of other medical school programs in California because they would complete medical school in three years instead of four years.

The majority of additional graduates at UC Davis and the two three-year rural campuses are likely to practice in California, as data from the American Medical Association's Masterfile suggest that 68.7% of all graduates of UC medical schools practice in the state. At least 147 of these additional medical students would practice in an underserved area for some period of time following residency because they would receive a full-tuition scholarship for all three years of medical school in exchange for practicing as a primary care physician, psychiatrist, or geriatrician in an underserved area of the state. These scholarships, each valued at $50,000 per year ($150,000 over three years of medical school), would substantially reduce students' educational debt. In 2017, 73% of students at MD-granting schools had educational debt, and the average amount of debt was $190,694. In addition, studies of medical school programs in rural areas have found that graduates of these programs are more likely to practice in rural areas.

The majority of additional graduates from UC Davis's three-year medical school program are also likely to be from racial/ethnic groups that are underrepresented in medicine. According to data from UC Davis, 60% of enrolled students in the program to date are from underrepresented racial/ethnic groups. This percentage is higher than the percentages of underrepresented minorities and Latinos among graduates of all California medical schools in 2016–17 (12% and 8%, respectively). In addition, nearly 80% of students enrolled in UC Davis's three-year medical school program are from disadvantaged backgrounds, and 75% speak a language other than English.

Thus, increasing the number of medical students in UC Davis's three-year program could result in the graduation of 149 additional students from underrepresented racial/ethnic groups from California medical schools by 2029, which could increase the number of Californians who have access to a physician of the same race/ethnicity and/or speaks the same language, which may improve patient trust and satisfaction, and in turn affect willingness to engage in care the physicians recommend. The demographic characteristics of medical students who enroll in the two new rural three-year medical school programs cannot be estimated because there are currently no similar programs in California.

Establish and expand a San Joaquin Valley branch campus of UCSF Fresno.

This recommendation would establish and expand a branch campus of UCSF School of Medicine in the San Joaquin Valley that would enroll 6 students in 2019 and grow to a class size of 50 students per year in 2025. A total of 66 students would graduate from the branch campus between 2023 and 2028. By 2029, the branch campus would graduate 50 students per year, an increase of 3.2% over the number of graduates of California medical schools in 2016–17.

Implementing this recommendation would cost $167 million over 10 years, which would consist of $20 million in capital costs and $147 million in operating costs ($2.2 million per graduate). Thereafter, the annual operating cost would be $21.5 million ($430,000 per graduate).

The first class of six graduates would enter residency training in 2023. Given that residency training in physician specialties takes at least three years (more for some specialties), 2026 would be the earliest year in which any of these graduates would enter practice.

The majority of graduates of the UCSF Fresno San Joaquin Valley branch campus are likely to be from racial/ethnic groups that are underrepresented in medicine because the race/ethnicity of graduates of the new branch campus is likely to be similar to that of students enrolled in the San Joaquin Valley PRIME program. The programs have a shared goal of preparing physicians who will practice in the San Joaquin Valley. According to data from the UC Office of the President, in 2018 70% of students enrolled in the San Joaquin Valley PRIME program were from underrepresented racial/ethnic groups. Forty percent were Latino, the racial/ethnic group that is the most highly underrepresented in medicine in California and constitutes a high percentage of San Joaquin Valley residents. The percentage of graduates who would practice in the San Joaquin Valley is unknown because the program would be new and because the impact would depend in part on whether the branch campus gives preference for admission to qualified applicants who are from the region, are underrepresented minorities, or have an interest in practicing in underserved areas. Studies have consistently found that underrepresented minorities are more likely to practice in an underserved area and that people who grew up in a rural area are more likely to practice in a rural area.

The impact of providing educational opportunities to high school and college students in the region to help them become competitive applicants for admission to the new branch campus cannot be estimated due to limited information, including a lack of data about costs associated with such efforts.

Sustain and expand the UC Riverside Medical School.

This recommendation would increase the number of first-year medical students at the University of California Riverside (UCR) medical school from 70 students in 2019 to 125 students annually from 2023 to 2028.

Implementing this recommendation would cost $445–$470 million over 10 years: $370 million in operating costs and $75–$100 million in capital costs.

The recommendation presents two scenarios, one in which the annual number of first-year students at UCR remains at 70 students through 2022 and one in which five additional students would be admitted per year from 2019 through 2022. Depending on the scenario, 110 to 130 additional students would graduate from California medical schools. The total number of students enrolled in California medical schools would increase by 246 students per year from 2026 to 2028, an increase of 3% above the number enrolled in 2017–18.

If five additional first-year medical students are enrolled at UCR in 2019, they would be expected to graduate in 2023. Depending on the specialty in which they train, these students could complete residency and enter practice as early as 2026. The largest increase in graduates would occur in 2027 and 2028 because they would be the first students to graduate after the size of the first-year class is increased to 125 students.

The majority of additional graduates are likely to practice in California. Eighty-four percent of medical students who have graduated from UCR to date have entered residency programs in California. If the new additional graduates at UCR are similar, 92 to 109 would remain in California for residency. (The number varies depending on whether class size increases by five students between 2019 and 2022.) Some of these physicians are likely to practice in the Inland Empire due to ties to the region. Among students who entered UCR in the fall of 2016, 26.7% attended high school in the Inland Empire. If a similar percentage of additional medical students attend high school in the Inland Empire, a substantial number of the additional graduates will have ties to the region that could lead them to practice there. The likelihood that they will practice in the region would be strengthened if they complete residency in the region and receive scholarships or loan repayment in exchange for practicing there after completing residency.

If the additional graduates are similar to students who graduated from UCR in 2016–17, 52.5% will enter a residency program in a primary care specialty, and 12.5% will enter a residency program in psychiatry. This would yield an increase of 58 to 68 California medical school graduates who enter a primary care residency program between 2019 and 2028 and an increase of 14 to 16 graduates who enter a psychiatry residency program.

If the additional graduates are similar to first-year medical students who enrolled at UCR in 2017–18, 37% would be from a disadvantaged background (defined as English as a second language, first in family to complete college, socioeconomically and/or educationally disadvantaged), and 21.4% would be from racial/ethnic groups that are underrepresented in medicine. Studies consistently suggest that physicians from underrepresented racial/ethnic groups are more likely to practice in underserved areas.

The recommendation would also increase the number of medical residents trained in programs affiliated with UCR from 260 to 500 residents per year. The 240 additional medical residents at UCR would provide 144,000 patient visits per year (600 visits per resident per year), which could increase availability of medical care in the Inland Empire, the region of California that has the largest shortage of physicians. The increase would likely be phased in over time because residency programs typically expand by increasing the size of the first-year class. When fully phased in, the total number of medical residents in California would increase by 2% above the total number of medical residents in the state in 2016. The recommendation does not indicate how the additional residency positions would be distributed across medical specialties. If the distribution is similar to that of first-year residency positions in UCR-affiliated programs in 2018, 67% of the additional positions would be in primary care residency programs (i.e., family medicine, internal medicine, obstetrics/gynecology, and pediatrics).

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

STRATEGY: ALIGN AND EXPAND EDUCATION AND TRAINING TO PREPARE HEALTH WORKERS TO MEET CALIFORNIA'S HEALTH NEEDS.

Recommendation 2.5: Develop a four-year medical education program at Charles R. Drew University of Medicine and Science.

Main Takeaway

This recommendation would provide funding, approximately $1 million, for a three-year planning grant for an independent four-year MD program at Charles R. Drew University of Medicine and Science (CDU) that would graduate 180 students between 2027 and 2029, the majority of whom would be from racial/ethnic groups underrepresented in medicine and would provide care to underserved populations. The impact of the recommendation would be maximized if implemented in conjunction with the recommendation aimed at increasing the number of primary care medical residents in California.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

The population of Los Angeles County struggles under a continuous, persistent need for additional qualified medical professionals. The need is most acute in South Los Angeles, an area of more than 1.1 million residents. A 2017 Community Needs Assessment conducted by that hospital cited a shortage of over 1,200 full-time equivalent (FTE) physicians in the hospital's service area. A decades-long partnership between UCLA and The Charles R. Drew University of Medicine and Science (CDU) College of Medicine (COM) — located in South Los Angeles — serves the region with two options for training physicians. One is a community-based four-year UCLA-CDU Medical Education Program, for which UCLA holds the required accreditation and confers the degree. Applicants must demonstrate a commitment to serving disadvantaged and underserved populations. The second offering, the UCLA-Drew PRIME MD program, also prepares graduates to serve as physicians in medically disadvantaged communities. Additionally, the PRIME program leads to conferral of two degrees: an MD and a master's degree chosen to support the program mission of improving health disparities.

This proposal would support a planning grant to position CDU to offer an independent four-year MD program, with a first class of 60 students to start in September 2023. CDU is a private, nonprofit, WASC-accredited, nonsectarian medical and health sciences institution that holds designations of being a Minority-Serving Institution and Historically Black Graduate Institution, and the university is a charter member of the Hispanic Serving Health Professions Schools. It is ranked nationally as the second most diverse institution and the third for greatest value added for alumni. The proposed independent medical school would supplement and not supplant the CDU-UCLA programs.

Rationale

The report *An American Crisis: The Growing Absence of Black Men in Medicine and Science*[1] details the declining numbers of black men in medicine. To illustrate this disparity, US-born black men accounted for only 1% of enrollment in American medical schools in 2016–17. Greater access to more diverse and culturally competent physicians offers communities health benefits beyond simply greater access, however. A 2018 National Bureau of Economic Research study of patient-physician interactions in Oakland, California, concluded that increasing the number of black physicians improves the willingness of black male patients to engage in preventive care. The working paper predicted that "black doctors could help reduce cardiovascular mortality by 16 deaths per 100,000 per year — leading to a 19% reduction in the black-white male gap in cardiovascular mortality."[2] In keeping with its diversity mission, CDU

1. Cato Laurencin, *An American Crisis: The Growing Absence of Black Men in Medicine and Science — Proceedings of a Joint Workshop* (Washington, DC: National Academies Press, 2018), doi:10.17226/25130.
2. Marcella Aslan, Owen Garrick, and Grant Graziani, *Does Diversity Matter to Health? Experimental Evidence from Oakland (NBER Working Paper 24787)*, National Bureau of Economic Research, June 2018, www.nber.org/papers/w24787 (PDF).

regularly matriculates classes with approximately 25% black men. By preparing diverse MD cohorts to practice with compassion in underserved communities, a new medical school in South Los Angeles can improve local and regional health outcomes and thereby help achieve the Commission's overarching goals.

Proposed Action

CDU would undertake a feasibility study, planning, and program development for a four-year independent program that would build upon CDU's more than 50 years of successful training programs in health sciences. The UCLA partnership programs would continue, with the planned CDU program expanding the physician education pipeline in Los Angeles County. The process would involve four working groups to lead the development process, addressing (1) application and accreditation, (2) development and private fund-raising, (3) government relationships, and (4) budget and finance. Local stakeholders will participate in prioritization of recommendations and implementation plans.

CDU will build the new independent medical program on the foundation of experience gained through the UCLA Management Enrichment Program and CDU's more than 50 years of successful training programs in health sciences. Infrastructure, resources, institutional knowledge, and clinical partnerships will be expanded from current status as partner to independent program. Developing a sustainability plan and achieving Liaison Committee on Medical Education (LCME) accreditation is key to being able to launch the independent medical program.

Estimated Cost

Planning for the new institution is expected to take three years and cost $1,020,000. Key elements of the planning process include (1) developing a detailed plan of action, (2) assessing the current four-year program core function areas and faculty capacity, (3) engaging local stakeholders, (4) reviewing the academic medical center structure and functions, (5) preparing reports to CDU's board of trustees, (6) preparing a LCME application, and (7) completing and implementing a resource development strategy.

Cost	Years 1–3 (annual)	Total
Administrative oversight and management	$180,000	**$540,000**
LCME application / CDU alignment	$160,000	**$480,000**
Total	**$340,000**	**$1,020,000**

Impact Summary

This recommendation would provide funding, approximately $1 million, for a three-year planning grant to develop an independent four-year MD program at Charles R. Drew University of Medicine and Science (CDU). If the planning grant is successful, the program would admit its first class of students in 2023. Assuming the new four-year MD program is launched, there would be a resulting increase in the number of graduates of California medical schools and the number entering residency training. The number of graduates of California medical schools would increase by 60 graduates per year, an increase of 3.8% over the 2016–17 academic year. If the first cohort of new first-year students enrolls in 2023, the number of graduates would increase by 180 between 2027 and 2029. Given that residency training in physician specialties takes at least three years (more for some specialties), 2030 would be the earliest year in which any of the new graduates would enter practice.

The majority of graduates of the new four-year CDU program are likely to be from racial/ethnic groups that are underrepresented in medicine. During the 2017-2018 academic year, 80% of students enrolled in the UCLA-CDU Medical Education Program were from such groups; 42% were African American, 37% were Latino, and 1% were Native Hawaiian/Pacific Islander. These percentages are higher than the percentages of underrepresented minorities, African Americans, Latinos, and Native Hawaiian/Pacific Islanders among graduates of all California medical schools in 2016–17 (12%, 4%, 8%, and 0.2% respectively). The findings from the UCLA-CDU Medical Education Program are likely generalizable to graduates of a new four-year CDU program because both programs aim to enroll medical students interested in caring for underserved populations and provide them with longitudinal clinical training in an underserved area of Los Angeles aimed at reinforcing their interest. If the racial/ethnic diversity of students enrolled in the new four-year program is consistent with that of students enrolled in the UCLA-CDU Medical Education Program in 2017-2018, 76 of the 180 persons who graduate between 2027 and 2029 would be African American, 67 would be Latino, and 2 would be Native Hawaiian/Pacific Islander.

The majority of graduates of the new CDU program are likely to practice in California, because data from the American Medical Association's Masterfile suggest that 62.8% of all graduates of MD-granting medical schools in California practice in the state. Graduates of the new CDU program would also be more likely to care for underserved populations than physicians who do not participate in similar programs. A study of graduates of the UCLA-CDU Medical Education Program from 1985 to 1995 found that they were twice as likely to practice in an underserved area as graduates of UCLA's medical school who did not participate in the program (53% vs. 26%).

Increasing the number of medical school graduates who are from racial/ethnic groups underrepresented in medicine would also increase the number of Californians who would have access to a physician of the same race/ethnicity, which may improve patient trust and satisfaction and may in turn affect willingness to participate in care their physicians recommend.

The impact of this recommendation, if successful in launching a four-year medical school, would be maximized if it were implemented in tandem with the recommendation aimed at increasing the number of primary care residents trained in California by 20%, and if the residency programs funded prioritized admission of graduates of California medical schools.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

STRATEGY: ALIGN AND EXPAND EDUCATION AND TRAINING TO PREPARE HEALTH WORKERS TO MEET CALIFORNIA'S HEALTH NEEDS.

Recommendation 2.6: 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.

Main Takeaway

The implementation of 15 academic health department (AHD) pilots would result in 674 nonclinical public health professionals joining the government public health workforce in California. AHDs would also increase public health practice capacity and academic research through the collaboration between local health departments and public health schools and programs. This recommendation is estimated to cost $15.5 million over seven years. The portion allocated to the AHD pilots ($12 million, or $800,000 per AHD pilot) translates into approximately $17,800 per professional.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

The movement toward value-based reimbursement has increased awareness among health care providers and payers of the imperative to address the drivers of poor health in our communities. The demand for a more comprehensive approach to health brings new focus to the contributions of local health departments (LHDs) in fulfilling their three core functions (assessment, monitoring and assurance, and policy development) and their effective delivery of the 10 Essential Services.[1]

To meet this demand and fulfill their promise, LHDs will need to quickly expand their capacity in the coming years. For example, in 2005, only 25% of LHDs reported that they employed epidemiologists.[2] Most are employed in LHDs serving populations of 100,000 or more and focus primarily on communicable disease and environmental health surveillance, and much less frequently in areas such as chronic disease and behavioral health. Building epidemiological capacity in LHDs for broader surveillance, design and planning, and evaluation of multistakeholder, comprehensive strategies to improve health will be critically important in the coming years.

Rationale

While data are limited, anecdotal evidence suggests that a small minority of public health graduates choose a career in government public health. Reasons cited range from a lack of exposure to opportunities to impediments associated with the civil service application process. The demand for new leaders is growing, as a large percentage of current leaders is slated for retirement.[3] Many LHDs 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.[4]

There is a clear imperative to increase the number of public health students exposed to, prepared for, and securing jobs in governmental public health in California. One strategy to build capacity and increase the potential for recruitment is to build formal affiliations — referred to as academic health departments, or AHDs — between academic public

1. *The 10 Essential Public Health Services: An Overview*, Centers for Disease Control and Prevention, March 2014, www.cdc.gov/stltpublichealth/publichealthservices/pdf/essential-phs.pdf (PDF).
2. Carol Moehrle, "Who Conducts Epidemiological Activities in Local Health Departments?," *Public Health Reports* 123, no. Suppl. 1 (2008): 6–7, doi:10.1177/00333549081230S103.
3. Jonathon P. Leider et al., "Reconciling Supply and Demand for State and Local Public Health Staff in an Era of Retiring Baby Boomers," *Amer. Journal of Preventive Medicine* 54, no. 3 (March 2018): 334–40, doi:10.1016/j.amepre.2017.10.026.
4. J. Darrell et al., "Local Health Department Workforce Recruitment and Retention: Challenges and Opportunities: A Practitioner Briefing," Univ. of Illinois at Chicago and the Center for State and Local Government Excellence, November 2013.

health institutions and LHDs. AHDs have been implemented nationally over the past 30 years, and are of increasing interest as a resource to build government public health agency capacity in the current environment of health care delivery and financing transformation.

Research shows that AHDs provide hands-on training to the future public health workforce while improving the quality of participating departments.[5] Schools and programs in public health (SPPHs) benefit from participating in an AHD because it helps to ground the theoretical education their students receive in real-world practice. LHDs benefit because AHDs help to create a pipeline of well-trained professionals who are dedicated to serving the public and who are interested in pursuing employment in health departments. LHDs also benefit by harnessing the resources of the academy to advance its public mission (mainly in the form of students, who often come with research and mentoring support from their professors). AHDs will be an advantage to health departments in securing and sustaining national accreditation, as they would contribute to workforce, training, and school affiliation requirements. This will enhance the case for health department funding to sustain the collaborations.

A recent survey of 2,000 LHDs and SPPHs on the effectiveness of AHDs found that both sides of the collaboration valued the partnership because of important contributions to "improve education and training, support public health accreditation, enhance LHD credibility, enhance LHD technological capabilities, and improve research and evidence-based practice."[6] Most survey respondents from LHDs saw their university partnerships as advancing their workforce development goals, and almost all SPPH faculty appreciated their partnership with health departments because it "improved their students' education by aligning it with practice." The study also found that the deeper the collaboration, the greater the benefits. It concluded that additional funding was needed to further develop these mutually beneficial partnerships "to provide tangible tasks and opportunities for taking a more long-term and strategic view for collaborative relationships."

An increase in AHDs would help students and faculty learn more about public health practice and develop critical competencies including community engagement, data analysis, advancing health equity, and understanding the social determinants of health. Targeted research led by faculty and carried out by students helps to expand the reach of LHDs in key areas such as epidemiological inquiry, comprehensive intervention design and planning, and evaluation.

Proposed Action

Invest in a subset of the state's 13 schools and programs of public health, California Department of Public Health (CDPH), and 66 LHDs to build partnerships that train the next generation of public health professionals and advance the research, evaluation, and analytic capacity of LHDs. After a year 1 start-up and design phase, select five AHD pilot sites in high-need rural and urban regions at the start of year 2 for two-year grants. Sites will be selected based on criteria for readiness for both SPPHs and LHDs, quality and specificity of actions to be taken, a long-term vision, strategies to leverage pilot grant resources, and demonstrated commitment to focus in communities where health inequities are concentrated. Partnerships between the SPPH and LHD partners will feature:

- Formal agreements between at least one SPPH and one LHD
- Paid summer internship programs for MPH students at LHD site(s)
- Joint staffing (faculty engagement with LHDs/guest lecturers from LHDs)
- Education/training collaborations (e.g., executive and continuing education and online MPH)
- Joint research projects (e.g., student research projects to support analytic needs of LHDs)

5. Betty Bekemeier and Karl Ensign, "Wanted: Academic Health Departments to Foster Evidence-Based Practice and Practice-Based Evidence," *Journal of Public Health Management and Practice* 23, no. 3 (May/June 2017): 328–30, doi:10.1097/PHH.0000000000000571.
6. Kevin A. Kovach et al., "Perceived Benefits of Collaboration Between Local Health Departments and Schools and Programs of Public Health: A Mixed-Methods Study," *Journal of Public Health Management and Practice* (published ahead of print June 20, 2018): 1–9, doi:10.1097/PHH.0000000000000823.

- "Surge" services to match SPPH faculty/students with short-term projects
- Targeted recruitment and placement in government public health departments

This strategy will support joint research and practice collaboration to build public health capacity, providing competitive awards for innovation in education, research, and service. This approach will help to identify five additional AHDs in different regions of the state to be scaled up during year 3 of the proposed effort, and a third and final cohort of five AHDs to be selected in year 4. The program will include the development of a statewide AHD community of practice, with an annual convening of AHD leadership, and ongoing video conference calls to share best practices and inform the larger field. Beginning in year 4, the first round of AHDs will apply for round two sustainability grants based upon alignment with criteria yet to be determined (e.g., effectiveness, matching funding).

Estimated Cost

The estimated total budget for the statewide AHD coordinating entity and the pilot sites, and the follow-on sustainability grants for the AHD Demonstration Project, is $15.5 million over seven years, including:

- $2.1 million for administration: $300,000 annually over seven years for the staffing support for the proposed backbone organization, including an AHD project director. Includes managing the AHD community of practice, technical assistance, travel, and convenings.
- $7.5 million for pilot AHDs: $2,500,000 per year for three years for establishment of pilot AHDs ($500,000 per pilot AHD for a total of 15 pilots over the three-year period).[7]
- $4.5 million for sustainability grants: $1.5 million per year for three years (avg. $300,000 per AHD) for pilot AHDs that meet criteria.
- $1.4 million for an evaluation: $200,000 per year over seven years to ensure program success and to course correct.

Cost	Year 1	Years 2–3	Year 4	Years 5–6	Year 7	Total
AHD administration	$300,000	$300,000	$300,000	$300,000	$300,000	**$2,100,000**
Pilot AHDs		$2,500,000	$2,500,000			**$7,500,000**
AHD sustainability grants			$1,500,000	$1,500,000		**$4,500,000**
Evaluation	$200,000	$200,000	$200,000	$200,000	$200,000	**$1,400,000**
Total	**$500,000**	**$3,000,000**	**$4,500,000**	**$2,000,000**	**$500,000**	**$15,500,000**

7. LHDs will be the fund recipients and will allocate as appropriate for SPPH faculty and student AHD activities.

Impact Summary

Supporting the implementation of 15 academic health departments (AHDs) — partnerships between local health departments (LHDs) and public health schools and programs — would increase the number of nonclinical public health students exposed to, and prepared for, governmental public health positions in California. An estimated 674 nonclinical professionals would be added to the local public health workforce after three AHD pilot cycles at an estimated cost of $17,800 per professional entering the government public health workforce. These professionals would serve underserved communities and advance health equity. The successful implementation of this recommendation would also support joint research and practice collaboration to build public health capacity, providing competitive awards for innovation in education, research, and service. AHDs would also engage the broader health care sector in addressing population health and the social determinants of health. This recommendation is estimated to cost $15.5 million in total over seven years.

These estimated costs and benefits do not address the value gained through the LHD and public health school (or program) relationships, joint research, service relationships, or the benefits of an AHD community of practice.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

STRATEGY: ALIGN AND EXPAND EDUCATION AND TRAINING TO PREPARE HEALTH WORKERS TO MEET CALIFORNIA'S HEALTH NEEDS.

Recommendation 2.7: Integrate training on social determinants into all health professions training programs.

Main Takeaway

Integrating social determinants of health curricula in health professions training programs would increase clinicians' understanding of cultural, environmental, and contextual factors affecting patient health. Expanding awareness of social determinants of health creates the potential for more comprehensive and effective clinical care, with the ultimate goal of improving long-term health outcomes and lowering costs. Expected costs for this recommendation are $21.8 million over four years.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

The World Health Organization defines social determinants of health as "the conditions in which people are born, grow, live, work, and age . . . shaped by the distribution of money, power, and resources at the global, national, and local level."[1] Key factors include housing quality, food access, environment (e.g., air and water quality), violence, and transportation problems, as well as race, gender, and sexual orientation. While it has long been known that social determinants are much more significant predictors of health outcomes than is medical care,[2] understanding and acknowledgment of the role they play has grown significantly in recent years. For example, the stress[3] associated with daily challenges is understood to have substantial impacts on physical health.[4]

Medi-Cal's shift to mandatory managed care (from fee-for-service), along with the Medi-Cal 2020 plan created for the 1115 waiver in 2015, provided the incentive and opportunity to shift toward a more holistic approach to Medi-Cal members. For example, the Whole Person Care initiative created as part of the Medi-Cal 2020 plan allows Medi-Cal to pay for housing and supportive services under specific circumstances. Recent Centers for Medicare & Medicaid Services rule changes for Medicaid managed care also signal recognition of the need to encourage the integration of nonmedical interventions.[5] A growing number of studies document reductions in health care costs associated with interventions that address the social determinants of health (SDH).[6] As social determinants are increasingly recognized as a major driver of health outcomes, it is important to ensure that health professionals understand the role they play in the health of populations and individual patients.

Rationale

Schools of medicine, pharmacy, dentistry, nursing, and public health give varying levels of attention to building knowledge of the SDH. Instruction is often limited to isolated elements of classroom instruction, with little time devoted to the larger social, cultural, and historical context.[7] A recent review found that for most medical students, exposure

1. "About Social Determinants of Health," World Health Organization, n.d., www.who.int/social_determinants/en/.
2. Victor R. Fuchs, *Who Shall Live? Health, Economics, and Social Choice* (Singapore: World Scientific Publishing, 1975).
3. In scientific terms, toxic stress is referred to as "allostatic load," and refers to a level of stress that stimulates the classic "fight or flight" physiological response involving hormonal responses and the disruption of normal physiological functions, over time leading to higher rates and acuity of diseases.
4. Theresa M. Beckie, "A Systematic Review of Allostatic Load, Health, and Health Disparities," *Biological Research for Nursing* 14, no. 4 (Oct. 1, 2012): 311–46, doi:10.1177/1099800412455688.
5. David Machledt, "Addressing the Social Determinants of Health Through Medicaid Managed Care," The Commonwealth Fund, November 29, 2017, www.commonwealthfund.org/publications/issue-briefs/2017/nov/addressing-social-determinants-health-through-medicaid-managed.
6. The October 2018 issue of *Health Affairs* includes the findings of multiple interventions to address the SDH.
7. Dave A. Chockshi, "Teaching About Health Disparities Using a Social Determinants Framework," *Journal of General Internal Medicine* 25, no. S2 (May 2010): 182–85, doi:10.1007/s11606-009-1230-3.

varied in length from one half-day per week for six months to full-time for over a year;[8] one school of medicine has a required poverty and medicine curriculum that covers all four years of education.[9]

While progress is being made, there is a substantial gap in knowledge and understanding of social determinants among currently practicing clinicians. In a study of pediatricians in 2006, one in five indicated that they had received training in environmental health history taking.[10] In an AAMC 2013 survey of graduates, over one-third indicated that they had received inadequate exposure to environmental health.[11] Many practitioners simply do not have the skills needed to take optimal advantage of multidisciplinary, team-based care. While there are notable exceptions[12] and an emergent movement in the field,[13] medical schools are strongly influenced by federal funding priorities, which focus on specialty research. This skews faculty selection and advancement toward specialization. In many schools, medical students are encouraged to pursue specialty paths for superior status and financial returns on their career investment.

Exemplary programs in medical education, such as PRIME in University of California schools of medicine, provide specialized coursework and structured clinical experiences for cohorts of students to serve urban and rural underserved populations and address health inequities. Programs such as this need to be scaled and integrated across curricula for graduates who will increasingly practice in an environment where the financial incentives are for keeping people healthy and out of inpatient settings. Most efforts to document impacts of the integration of the SDH into health professions education are descriptive and/or focus on narrow learning outcomes. One recent exception is a program at Florida International University's Herbert Wertheim College of Medicine; analyses indicated both short and intermediate impacts on health savings and efficacy.[14]

Proposed Action

To integrate the SDH into schools of medicine, pharmacy, dentistry, nursing, and public health through (1) a 2019 assessment of the current status of education and training on the SDH in all California health professions education institutions (HPEIs) and clinical training facilities, including curricula, partnerships with external stakeholders, and faculty competencies; (2) targeted data and technical assistance in 2020–22 to support the tailored redesign of the curricula of California HPEIs to fully integrate the SDH at all stages of the education and training process; and (3) building a community of practice (COP) in 2020–22 that supports implementation through sharing of alternative approaches to curriculum redesign, capacity building, and emerging lessons, and through monitoring impact in different settings to support continuous quality improvement.

Estimated Cost

Building SDH content into existing health professions education would require investment in a redesign process, and the training (and/or hiring) of faculty and administrators with needed expertise, and/or the design of jointly taught classes with faculty in other programs in the same institution. It would also require ongoing engagement with diverse stakeholders in communities to provide the necessary experiential learning to practically apply what is learned in classroom settings. The initiative has three components.

8. J. E. Thistlewaite et al., "A Review of Longitudinal Community and Hospital Placements in Medical Education: BEE Guide No. 26," *Medical Teacher* 35, no. 8 (2013): e1340–64, doi:10.3109/0142159X.2013.806981.
9. Kelly M. Doran et al., "Developing a Novel Poverty in Healthcare Curriculum for Medical Students at the University of Michigan Medical School," *Academic Medicine* 83, no. 1 (Jan. 2008): 5–13, doi:10.1097/ACM.0b013e31815c6791.
10. Stephen G. Pelletier, "Experts See Growing Importance of Adding Environmental Health Content to Medical School Curricula," Assn. of Amer. Medical Colleges, September 27, 2016.
11. Pelletier, "Experts."
12. Fitzhugh Mullan et al., "The Social Mission of Medical Education: Ranking the Schools," *Annals of Internal Medicine* 152, no. 12 (June 15, 2010), doi:10.7326/0003-4819-152-12-201006150-00009.
13. See the Beyond Flexner Alliance at http://beyondflexner.org/.
14. John A. Rock et al., "Impact of an Academic-Community Partnership in Medical Education on Community Health: Evaluation of a Novel Student-Based Home Visitation Program," *Southern Medical Journal* 107, no. 4 (Apr. 2014): 203–11, doi:10.1097/SMJ.0000000000000080.

1. **Statewide assessment, $1.5 million over one year.**
   A statewide assessment of curricula, faculty across disciplines, research priorities, and pedagogical approach would illuminate current capacity and help to identify the costs, sequence, timing, and targets for full integration. An estimate of the cost of the assessment and the publication of a statewide report is $1.5 million, including the cost of administering the development of a request for proposals with appropriate criteria, review and selection of a contractor in a competitive application process, and oversight of the assessment process.
2. **Technical assistance and community of practice, $2.25 million over three years.**
   Targeted release of structured data and technical assistance to design an implementation strategy and form a COP to share models and emerging lessons is budgeted at $2.25 million over three years to support a minimum of 20 sites. This includes $250,000 per year to administer the data sharing, TA contracting, and the development and maintenance of an online community of practice, and approximately $75,000 in funding per site for technical assistance (TA).
3. **Matching fund to support implementation, $18 million over three years.**
   Implementation of targeted recommendations will require substantial new resources to hire new faculty, develop new programs, and redesign existing courses. Some costs can be covered through internal reallocation of resources at HPEIs, but additional support will be needed from public- and private-sector sources, including the State of California, health sector employers, private philanthropy, and federal agencies.[15] A state fund of $18 million would be established to encourage private-sector matching commitments for actions that meet criteria for curricular integration and sustainability.

Cost	Year 1	Years 2–4 (annual)	Total
Statewide assessment	$1,250,000		**$1,250,000**
Administer assessment	$250,000		**$250,000**
Administer technical assistance and community of practice		$250,000	**$750,000**
TA for 20 sites		$500,000	**$1,500,000**
State matching fund		$6,000,000	**$18,000,000**
Total	**$1,500,000**	**$6,750,000**	**$21,750,000**

Impact Summary

In the short term, conducting an assessment on the current status of social determinants of health (SDH) in health care education and training, accompanied by technical assistance and convening a community of practice, is likely to result in the implementation and integration of SDH curricula into schools of medicine, pharmacy, dentistry, nursing, and public health. SDH-integrated curricula would increase clinicians' understanding of cultural, environmental, and contextual factors affecting patient health. While evidence is still needed to substantiate expected outcomes, it is widely believed that expanded awareness of SDH can result in more comprehensive and effective clinical care, ultimately leading to improved long-term health outcomes and lowered costs. Graduates would also develop the knowledge and skills to work with diverse stakeholders and disciplines. Some evidence also suggests that medical students introduced to SDH may be more likely to select careers in primary care. Expected costs for this recommendation are $21.8 million over four years.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

15. In a December 2016 report titled "*Addressing the Social Determinants of Health: The Role of Health Professions Education,*" the Advisory Committee on Training in Primary Care Medicine and Dentistry recommended that Health Resources and Services Administration provide support for interprofessional clinical educational activities, programs to assess the impact and effectiveness of training methods, and faculty development through Section 747 and 748 grant applications.

STRATEGY: ALIGN AND EXPAND EDUCATION AND TRAINING TO PREPARE HEALTH WORKERS TO MEET CALIFORNIA'S HEALTH NEEDS.

Recommendation 2.8: Expand the role of the California Community College system and new online college in training the future health workforce.

Main Takeaway

Expanding pathways for California Community College (CCC) students and California residents has the potential to increase the number and diversity of students who earn certificates and degrees in allied health fields and secure jobs in priority health professions. Since CCC already has the resources required to implement most of the proposed actions, only $100,000 (for the California Medical Scholars Program) is needed in the short term to implement this recommendation.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

Current and projected health workforce shortages have adverse consequences for health access, quality, costs, and outcomes — the effects of which will be felt disproportionately by California's rural and urban underserved areas. Further, neither California's health workforce nor graduate health professions schools reflect the rich diversity and language capabilities of California's emerging majority populations. Large-scale access to health professions training and adequate support to pursue health pathways can increase opportunity for Californians from all communities to secure rewarding health jobs and meet the future need for qualified, diverse health professionals.

Rationale

With more than 2.1 million students on 115 campuses within the state, the California Community Colleges (CCC) system provides education and employment networks that train and place highly qualified, diverse talent across the state. In 2016–17, CCC enrolled 47,000 students in health training programs and granted almost 10,500 health-related degrees.[1] In addition to degree programs, colleges also offer large-scale health pathway and workforce initiatives that can be expanded and leveraged to meet future health workforce needs, including innovative partnerships with K–12 schools, four-year colleges and universities, and employers. Community colleges also provide a highly diverse pool of students from which to recruit, mentor, and train to become health workers in priority professions.

CCC will launch its new Online Community College in fall 2019 with health as a priority early focus. The target population is 25- to 34-year-old students who do not have college degrees or certificates. The online platform can be leveraged to advance access to cost-effective training for residents in all California communities, including underserved and vulnerable populations.

Proposed Action

The CCC Chancellor's Office will engage statewide and regional health workforce initiatives, health employers, labor unions, other university and health training providers and K–12 schools in its large-scale efforts to strengthen pathways to priority health careers for students and incumbent workers. CCC has a long track record of implementing successful health workforce education and training initiatives that meet statewide and regional needs, including the California Nurse Education Initiative[2] and the Health Workforce Initiative. California Future Health Workforce Commission subcommittees recommended increasing the role that CCC plays in preparing and increasing the diversity of the future

1. *Final Report to the California Future Health Workforce Commission*, Californian Higher Education Health Professions Steering Committee, July 2018, https://calfutureworkforce.files.wordpress.com/2018/08/final-report-of-the-ca-higher-education-health-professions-steering-committee-072718.pdf (PDF).
2. *California Nurse Education Initiative: Annual Report 2009*, March 2010, www.labor.ca.gov/pdf/NEI_Annual_Report_2009.pdf (PDF).

health workforce. Three areas for immediate action are described below, in addition to CCC's leadership of other major initiatives, including the Strong Workforce Initiative, Health Workforce Initiative, and numerous programs being led on individual campuses.

1. **Develop and expand training and certification programs in priority health professions.**
   Commission subcommittees identified the need to strengthen the supply, distribution, and diversity of workers with the necessary competencies and credentials to effectively promote health and deliver services in emerging health models. Many of the workers prioritized by the subcommittees receive training now or could be trained by CCC, including medical assistants, community health workers, home care workers, substance use disorder counselors, and health IT workers. CCC leadership would convene employers and other key stakeholders to review the Commission's final report and recommendations, and assess opportunities to:
   - Support the CCC and campuses to develop degree and certificate programs for expanded competency-based training for priority health workers in primary care, prevention, behavioral health, and care for older adults. Campuses should also work with employers to update existing program content and curricula to align with changing competency requirements for employment and effective practice.
   - Promote the online college's new billing and coding program.
   - Develop plans and funding for three future health worker online training programs for implementation in 2020–23.
2. **Support development of the California Medical Scholars Program.**
   The CCC Chancellor's Office has endorsed and will provide financial support for the development of the California Medical Scholars Program. CMSP is 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. CMSP is working with CCC campus leaders to launch the program and develop statewide and regional pathways, modeling its efforts after the "2+2+3" program to support CCC students to be admitted to California law schools (two-year associate degree, two-year bachelor's degree, and three-year Juris Doctor). CMSP has endorsements from CCC, other leading health educational systems, and major medical schools. In 2019, CMSP development should be aligned with other Commission health pipeline recommendations to support community college students to pursue priority health careers and practice in medically underserved areas of California. The Chancellor's Office has identified seed funding to support the development of this program and may seek additional philanthropic funding for future expansion.
3. **Explore the need for and options for increasing production of Bachelor of Science in Nursing (BSN) graduates.**
   Demand is growing for BSN-trained nurses. Strategic options for meeting these needs should emerge from continued collaboration among CCC, the California State University, and the University of California (UC). To explore these options CCC plans to take the following actions: (1) in the first months of 2019 facilitate a joint public higher education (CCC, California State University, and UC) investigation of current and projected state nursing employment needs as compared to the production of registered nurses and BSN-trained nurses in existing programs, including capacity and geographic distribution of associate, bachelor's, master's, and doctoral nursing programs; (2) determine the most feasible options for meeting projected gaps in preparation of BSNs and other nurses; and (3) strengthen and expand collaborative associate degree-to-BSN nurse training programs.

Estimated Cost

CCC has resources to implement planned activities in the three action areas, including $100,000,000 for development of the new Online Community College and exploration of new health-related programming, and $100,000 for CMSP start-up costs. No funds are requested at this time, though CCC has projected a future need for $100,000 in additional external funding for CMSP growth. Additional resource requirements for the recommended actions need to be determined through 2019 planning efforts. A priority emphasis will be aligning and leveraging existing programs, platforms, and funds to meet targeted goals in priority Commission areas of focus.

Impact Summary

Expanding pathways for CCC students and California residents not currently accessing the CCC system has the potential to increase the number and diversity of students who earn certificates and degrees in allied health fields and secure jobs in priority health professions. The CCC in 2016 implemented the Strong Workforce / Doing What Matters program, which aims to expand enrollment in certificate and degree programs in priority industries, including health care, and ensure that CCC programs align with regional workforce needs. The program is in its early stages, but recent data on enrollment and certificate and degree awards in health-related fields suggest that the CCC pipeline for health-related programs is beginning to expand. The California Medical Scholars Program, with its focus on scaling and sustaining a direct pathway from community college to medical school, has the potential to increase the supply of physicians in California. And bringing together public higher education partners to collaborate on nurse training could lead to strategic, data-informed higher education planning that would improve coordination in nursing training programs to meet state needs. Such planning efforts could result in a stronger BSN-prepared nursing pipeline for California.

Minimal funds (approximately $100,000 for the California Medical Scholars Program) are needed in the short term to implement this recommendation, as CCC has most of the resources required to implement the planned activities. Future resource requirements for the recommended actions would be determined through future planning efforts.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

STRATEGY: STRENGTHEN THE CAPACITY, EFFECTIVENESS, WELL-BEING, AND RETENTION OF THE HEALTH WORKFORCE.

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

Main Takeaway

The estimated total costs of this three-part recommendation are $460 million over 10 years. Implementation of the education expansion component is estimated to cost $454 million and would increase the total number of nurse practitioners (NPs) in California to 44,000 by 2028 — approximately 7,000 more NPs than without this recommendation (a per-NP cost of approximately $65,000). Of these NPs, approximately 14,360 would work in primary care. This growth in the primary care NP workforce complements the recommendation related to increasing the number of primary care physician residencies, and together these recommendations would fill the projected shortage of primary care clinicians. The implementation of the three parts of this recommendation would result in approximately 17,000 NPs working in primary care, with more NPs working in rural communities. Full practice authority for NPs would result in cost savings to Californians from reduced avoidable emergency department stays and hospitalizations, and the lower costs of retail clinic use and primary care, totaling $7.2 billion or more by 2028.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

Nurse practitioners (NPs) are registered nurses who have completed additional education to prepare them to deliver a broad range of services, including the diagnosis and treatment of acute and chronic illnesses. These advance practice nurses are well prepared to help fill care gaps arising from shortages of primary care providers in California. Expanding education programs in underserved areas, increasing the diversity of the nurse practitioner workforce, and ensuring that nurse practitioners feel empowered to fully use their skills are necessary to meet both current and future primary care needs.[1]

NPs play a key role in providing primary and specialty services, but their capacity is limited by supply, role/function, and practice restrictions. As of 2018, over 20,000 NPs are licensed and live in California.[2] More than three-quarters are employed in advance practice nursing positions, and others are employed in managed, faculty, and registered nurse positions. While there are no projections of the demand for NPs, forecasts of demand for primary care and behavioral health clinicians indicate that there are now and will continue to be significant shortages of physicians.[3] NPs are well prepared to help meet the health care needs of Californians in these areas.

California is 1 of 28 states — and the only western state — that restricts NPs by requiring that they practice and prescribe with physician oversight. A large body of research has linked such restrictions to lower supply of NPs, lower supply specifically in rural regions, poorer access to care for state residents, lower use of primary care services, greater rates of hospitalizations and emergency department visits, and migration of qualified NPs to states with full practice

1. Joanne Spetz and Ulrike Muench, "California Nurse Practitioners Are Positioned to Fill the Primary Care Gap, but They Face Barriers to Practice," *Health Affairs* 37, no. 9 (Sept. 2018), doi:10.1377/hlthaff.2018.0435.
2. Micah Weinberg and Patrick Kallerman, *Full Practice Authority for Nurse Practitioners Increases Access and Controls Cost*, Bay Area Council Economic Institute, 2014, www.bayareaeconomy.org/files/pdf/BACEI_NP_Report.pdf (PDF); and Micah Weinberg and Patrick Kallerman, *Full Practice Authority for Nurse Practitioners Increases Access and Controls Cost: Technical Appendix*, April 2014, https://canpweb.org/canp/assets/File/Bay%20Area%20Council%20Report%204-30-14/BAC%20NP%20Full%20Report%204-30-14.pdf (PDF).
3. Joanne Spetz, Janet Coffman, and Igor Geyn, *California's Primary Care Workforce: Forecasted Supply, Demand, and Pipeline of Trainees, 2016-2030*, Healthforce Center at UCSF, August 15, 2017, https://healthforce.ucsf.edu/publications/californias-primary-care-workforce-forecasted-supply-demand-and-pipeline-trainees-2016; and Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/California%E2%80%99s%20Current%20and%20Future%20Behavioral%20Health%20Workforce.pdf (PDF).

authority.[4] Although proponents of scope of practice restrictions argue that physician oversight is necessary to ensure quality of care, dozens of studies demonstrate both that the quality of NP care is comparable to that of physician care, and that there is no difference in the quality of care when there are no physician oversight requirements. Finally, several studies have found that full practice authority for NPs is associated with lower costs of care.

California is projected to have a shortage of 4,103 FTE primary care clinicians in 2030. The most severe shortages are projected for the Central Valley and Central Coast, Southern Border, and LA/Orange/Inland Empire regions. It is estimated that up to 75% of primary care services could be provided by NPs and physician assistants (PAs). NPs and PAs are more likely to work in rural communities than are physicians.[5]

Rationale

Increasing the number of Californians trained as NPs, assuring they are working to the full extent of their training, and removing restrictions to full practice authority for NPs would help address California's workforce shortages. Increased deployment of NPs via full NP practice authority and expanded NP supply could expand access to health care and help relieve the physician shortage.[6] This could occur through (1) the elimination of physician supervision time, thus freeing up more time for physicians to provide direct patient care; (2) NP provision of primary care services to panels of patients; (3) increased population access to primary care, which would reduce the need for hospitalization and the companion physician care that otherwise would be needed; and (4) a greater supply of NPs, based on research that finds NP supply grows more rapidly when there are not practice restrictions.

Proposed Action

Based on the concerns and recommendations discussed by the subcommittee, the following three actions are proposed to optimize NP capacity in California to meet priority access and care needs.

1. **Increase the number and diversity of NPs capable of delivering culturally competent care who practice in rural and urban underserved areas.**

   Increase the number of NPs trained per year by increasing California's educational capacity. This would require additional outreach, scholarships, and loan repayment funds to recruit and retain NP candidates, particularly those from underserved California communities and underrepresented backgrounds.

   An analysis conducted by Healthforce Center at UCSF reported that the number of new NP graduates would need to increase from approximately 1,000 per year in 2017 to approximately 1,900 per year by 2023, combined with growth in the primary care physician workforce as proposed in other recommendations, to meet care needs by 2030. Over the past three years, the number of graduates from California NP education programs increased at an annual rate of approximately 3%. To reach the target of 1,900 per year by 2023, graduations would need to increase 20% per year for three years starting in 2020, after which program growth could resume at 3% per year. This program growth would be achieved primarily through supplemental funding to public university nursing programs to launch and expand programs, prioritized for campuses in regions with the largest projected primary care shortages.

2. **Increase the number of NPs who practice to the full extent of their training, expertise, and current legal scope.**

   Offer challenge grants to safety-net organizations interested in developing delivery system transformation initiatives to test and implement care models that maximize the skill set of all care team members. Participating organizations would be required to have NPs as part of the care team and to operate multiple care delivery sites. Selected safety-net organizations would receive $250,000–$500,000 per year to offset participation costs and

4. For a summary of literature examining the relationship between access to scope of practice regulations for NPs and access to care, quality of care, and productivity and the cost of care, see Joanne Spetz, *California's Nurse Practitioners: How Scope of Practice Laws Impact Care*, California Health Care Foundation, September 6, 2018, www.chcf.org/publication/californias-nurse-practitioners/.
5. Spetz, Coffman, and Geyn, *California's Primary Care Workforce*.
6. Spetz, *California's Nurse Practitioners*.

would be supported via a learning community structure to facilitate rapid-cycle process improvement and the sharing of best practices. Three to five sites from a variety of settings and areas around the state would be selected. A three-year commitment would be required of participating sites.

3. Enact policy and regulatory changes to enable a path to full practice authority for NPs in California.

- This component requires a statutory change that would:
  - Establish standards for competencies and experience to support full practice authority using established national standards for NP practice. Full practice authority would require NPs to have appropriate education and training for area of specialty practice and participate in the same credentialing, quality, performance monitoring, and peer review requirements as physicians.
  - Enact a supervised transitional period or experiential requirement prior to practicing with full practice authority. Allow both physicians and experienced NPs to be supervisors.
- Enact statewide and local monitoring and evaluation of impact on access, quality, cost, outcomes, and NP supply. It is anticipated that the Board of Registered Nursing would play a key role in this activity.

Estimated Costs

This recommendation has three components. Costs for components 1 and 2 are displayed below. Component 3 does not require a fiscal outlay.

Increase the number and diversity of NPs: Twenty-three California educational institutions offer NP programs approved by the Board of Registered Nursing.[7] Total tuition costs for a master's degree NP program range from $22,000 to $110,000 per student.[8] These programs graduate approximately 1,000 new NPs per year; in the 2016–17 academic year, 61% of new enrollments in all types of master's degrees nursing programs were in private institutions.[9]

The recommendation is to increase NP graduation rates from 1,000 per year in 2017 to approximately 1,900 per year by 2023. To reach the target, graduations would need to increase 20% per year for three years starting in 2020, after which program growth could resume at the current rate of 3% per year. Program growth would be achieved in four ways:

1. Program expansion grants to public universities that now offer NP programs. These grants would prioritize campuses in regions with the largest primary care shortages. The estimated cost to California State University (CSU) campuses is $40,000 per student for the two-year program, and the estimated cost to University of California (UC) campuses is $100,000 per student for a two-year program.
2. Program establishment grants to public universities that now offer bachelor's or master's degree programs in nursing but not NP programs. There are five such campuses: Channel Islands, Chico, East Bay, Northridge, and Sacramento. These grants would prioritize campuses in regions with the largest primary care shortages. The estimated cost for these programs would be $55,000 per student for the two-year program if the initial cohort size is 15–20 students.
3. Supplemental funding to CSU campuses to enable them to pay clinical preceptors/facilities who serve their NP education programs. It has been reported that physicians request payment to accept students into their facilities, and one nursing leader estimated the potential expense at up to $20,000 per student. CSU campuses do not have sufficient funds to make such payments, so they have difficulty securing clinical placements in some regions.
4. Stipends to students from underrepresented minority and language groups, and first-generation-to-college students, to offset lost income. These would be provided at $36,000 per student per year.

7. "Advanced Practice Programs: Nurse Practitioner Programs," California Board of Registered Nursing, n.d., www.rn.ca.gov/education/apprograms.shtml#np.
8. Informal communications among directors of California NP education programs (in both public and private universities) and Commission staff.
9. *2016-2017 Annual School Report: Data Summary and Historical Trend Analysis*, California Board of Registered Nursing, April 2, 2018, www.rn.ca.gov/forms/reports.shtml#school.

This fiscal estimate assumes current NP programs can absorb enrollment increases. Note that the estimates are the cost of program operation not including offsets from tuition received by programs. Thus the actual costs would be lower than reported. Key informants did not have information about how much income their department receives from tuition paid to the university.

Cost — Increase Number and Diversity of NPs	Year 1	Years 2–9 (annual)	Total
Program expansion, 2020–23, CSU, 238 students	$9,520,000	$9,520,000	**$95,200,000**
Program expansion, 2020–23, UC, 115 students	$11,500,000	$11,500,000	**$115,000,000**
Program establishment, 2020–23, CSU, 96 students	$5,280,000	$3,840,000	**$39,840,000**
Supplemental clinical preceptor recruitment funds, 334 students	$6,680,000	$6,680,000	**$66,800,000**
Student stipends to increase enrollment (100 students in year 1, 200 afterward)	$7,200,000	$14,400,000	**$136,800,000**
Total	**$40,180,000**	**$45,940,000**	**$453,640,000**

Cost — Increase NPs Practicing at Full Extent of Current Scope	Year 1	Years 2–4 (annual)	Total
Planning for grant period	$250,000		**$250,000**
Five sites at $250–$500K per year for three years		$1,250,000–$2,500,000	**$3,750,000– $7,500,000**
Learning community / technical support	$50,000	$100,000	**$350,000**
Evaluation and dissemination	$75,000	$150,000	**$525,000**
Total	**$375,000**	**$1,500,000–$2,750,000**	**$4,875,000– $8,625,000**

Anticipated Challenges

Legislative efforts have been undertaken to expand full practice authority in California but failed to pass.[10] Nationally, nine states have modified their practice authority regulations to remove physician oversight requirements since 2011; these changes were made with support of public health systems, AARP, and other stakeholders. Similar legislative efforts in California include SB 493, which established a new category of pharmacists: advanced practice pharmacists (APPs). SB 493 successfully expanded the APP scope of practice and authorized APPs to provide clinical services independent of physician oversight.[11] Prescriptive authority has been an ongoing source of controversy among scope of practice stakeholders. Most NPs consider the lack of full authority to prescribe medication as a major barrier to delivering care efficiently.[12] Opponents have raised concerns over the authorization of a new category of direct prescribers, given that excessive prescribing of controlled substances is a major public health problem. The California Psychiatric Association has raised concerns over the ability of NPs to prescribe powerful antipsychotics and psychotropic medications to patients.[13]

10. Senate Committee on Business, Professions, and Economic Development, Senator Curren D. Price Jr., Chair.
11. Assembly Committee on Health.
12. John K. Iglehart, "Expanding the Role of Advanced Nurse Practitioners — Risks and Rewards," *New England Journal of Medicine* 368 (May 16, 2013): 1935–41, doi:10.1056/NEJMhpr1301084.
13. Senate Committee on Business, Professions, and Economic Development, Senator Curren D. Price Jr., Chair.

Impact Summary

Expanding nurse practitioner education to increase the supply of primary care providers: Growth in the number of NP graduations is projected to result in California having 44,000 certified NPs in 2028, producing 14,360 primary care NP FTEs in 2028. Together with a recommendation on increasing primary care physician residencies, this would eliminate the shortage of primary care clinicians in California projected by Healthforce Center at UCSF. The primary care residency recommendation details the impact on access to care of implementation of both recommendations.

Promoting the full utilization of NP skills within current scope of practice regulations: The impact of this element of the recommendation cannot be estimated because there is no existing literature to support an impact model.

Reforming scope of practice regulations: Removing scope of practice restrictions would increase the growth rate of NP supply by 25%. Between 2010 and 2017, California's NP supply grew 39%; with full practice authority the growth rate would have been 49%, and the state would have 1,500 NPs more than it does today. If full practice authority is achieved by 2020:

- The share of NPs working in primary care would increase by about four percentage points above baseline projections, increasing the number of primary care NPs from a baseline of 8,513 in 2020 to 9,169. By 2028, the number of NPs in primary care would reach 15,466, which is about 1,100 more than the baseline forecast based on education growth alone. If combined with education expansion, there would be 17,000 primary care NPs.
- The share of NPs in rural areas would rise between 60% and 350%, drawing 132 to 550 additional NPs to rural California in 2020, above the 220 projected based on education expansion alone. By 2028, full practice authority would lead to 223 to 928 more NPs in rural areas than education expansion alone (371).
- Full practice authority would increase the share of Californians receiving annual adult checkups by 5%. It would increase the share of adults rating their health care as excellent by 8.6%.
- There would be nearly 50,000 fewer revisits to emergency departments for ambulatory sensitive conditions, resulting in cost savings of more than $58 million per year. If full practice authority is achieved in 2020, total cost savings would be $522 million by 2028.
- There would be a decrease in avoidable hospitalizations of dual-eligible Californians of nearly 64,000, saving $512 million per year, totaling $4.6 billion by 2028.
- There would be a decrease in hospitalization of dual-eligible nursing home residents of approximately 18,000, saving more than $202 million per year and totaling $1.8 billion between 2020 and 2028.
- Cost savings would arise from reduced retail clinic costs at approximately $35 million per year, totaling $315 million by 2028.
- There also would be lower costs of well-child visits (3%–16% reduction), and lower malpractice payments by physicians (up to 31%). Baseline costs for these items were not available for computations of total cost savings to California.

The estimated total cost of this three-part recommendation is $460 million.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

STRATEGY: STRENGTHEN THE CAPACITY, EFFECTIVENESS, WELL-BEING, AND RETENTION OF THE HEALTH WORKFORCE.

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

Main Takeaway

At an estimated cost of $7 million over four years, this recommendation is likely to increase private home care worker job satisfaction, client satisfaction, and worker retention. The recommendation may reduce nursing home use, but such an effect cannot be quantified. The training program that would result from this recommendation could reduce spending on unnecessary emergency department visits and hospitalizations by more than $2.7 billion over 10 years.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

Over four million Californians will be added to the 65 and older age group by 2030, an increase of 87% from 2012, and representing 19% of the total population.[1] People age 75 and older will become the fastest-growing age group by 2020.[2] Fifty percent of older adults will be widowed, divorced, or separated, or never have married,[3] and many families will be geographically dispersed across the country and the globe. California's senior population facing difficulties with self-care will double by 2030 to approximately one million.[4] More than half of Californians 65 and older rely on social security for 80% or more of their income.[5]

Most older adults prefer to remain at home, with 76% expressing the desire to age in place.[6] Approximately 4% of older adults in California live in nursing homes,[7] some of whom could live at home with appropriate levels of in-home care. For older adults to age in place with dignity and respect, an engaged community, and a fully integrated, person-centered team (physical, behavior, and social factors) paid commensurate with their preparation and education is needed. A critical component of this care team is the direct care worker, who provides culturally inclusive care and is trained to assume higher levels of care with appropriate oversight by licensed staff. It is estimated that to maintain the current level of coverage, California will need 200,000 additional home care workers by 2024.[8] Given demographic trends, anticipated increases in demand, and the growing desire to age in place, estimates rise to an additional 600,000 home care workers by 2030.[9]

Rationale

Establishment of the universal home care worker job family addresses a critical need for a stable and qualified private workforce that supports the rapidly growing population of aging adults in California. Evidence indicates that the expansion of home health and home care aide scope of practice, particularly in the administration of medication and

1. Laurel Beck and Hans Johnson, "Planning for California's Growing Senior Population," Public Policy Inst. of California, August 2015, www.ppic.org/publication/planning-for-californias-growing-senior-population/.
2. Beck and Johnson, "Planning."
3. Beck and Johnson.
4. Beck and Johnson.
5. Nina Ebner and Nari Rhee, *Aging California's Retirement Crisis: State and Local Indicators,* UC Berkeley Center for Labor Research and Education, October 1, 2015, http://laborcenter.berkeley.edu/aging-californias-retirement-crisis-state-and-local-indicators/.
6. Joanne Binette and Kerri Vasold, "2018 Home and Community Preferences: A National Survey of Adults Age 18-Plus," AARP, August 2018, www.aarp.org/research/topics/community/info-2018/2018-home-community-preference.html.
7. "How Many Seniors REALLY End Up In Nursing Homes?," *Aging Options Blog*, October 21, 2011, www.agingoptions.com/blog/2011/10/21/how-many-seniors-really-end-up-in-nursing-homes/.
8. Sarah Thomason and Annette Bernhardt, *California's Homecare Crisis: Raising Wages Is Key to the Solution*, UC Berkeley Center for Labor Research and Education, November 2017, http://laborcenter.berkeley.edu/californias-homecare-crisis/.
9. Beck and Johnson, "Planning."

treatment plans, allows more well-rounded care, improves patient satisfaction, and in some cases, brought supervision to formerly "underground" practices.[10] The job family could also include certified nursing assistants, who are unlicensed assistive personnel commonly giving care in nursing homes.

Proposed Action

Adopt a new universal home care worker (UHCW) role and job family with three levels,[11] including:

Level 1 Personal care and supporting living in the community through demonstrating proficiency in activities of daily living (ADLs) and instrumental activities of daily living (IADLs).

Level 2 Level 1 plus paramedical tasks for those with moderate functional limitations and cognitive decline. Examples of paramedical tasks include oral medications and catheter care; requires additional training.

Level 3 Level 2 plus paramedical services for the most complex individuals (e.g., people with dementia). Examples of paramedical services include injections and wound care; requires remote oversight by licensed professional.

The UHCW strategy requires legislation to modernize the Nurse Practice Act. Strategic work with the Board of Registered Nursing, workforce representatives, and the public and private health care sector is imperative to provide workforce training and certification, value-based reimbursement, and institutional systems change to integrate this workforce with primary care. Certified nursing assistants could be included in the job family and provided with enhanced training for specific tasks and populations plus career ladder opportunities. The appendices provide detail on the proposed job families, current job categories, and model programs.

Key elements in implementation of this proposal include:

Establish an advisory committee comprised of the public and private health care sector, educators, nurses and home care aides, policymakers, and consumer/community advocates to provide ongoing input during the assessment, design, and piloting process, as well as proposed policy and regulatory changes and development of value-based reimbursement strategies.

Establish competencies associated with the UHCW job family (by level) and compensation commensurate with increasing responsibility supported through education and training; a formal certification framework and certifying body for the UHCW Level 3; review of existing curricula; nurse delegation with appropriate oversight, training, and compensation; criteria and success factors for the integration with primary care; and value-based reimbursement strategies.

Conduct a statewide assessment of the current and growth capacity of postacute (e.g., skilled nursing facility, rehab) and residential facilities by region relative to projected growth of older adults and associated care needs and the current capacity and growth potential of community colleges and independent educational nonprofits to provide blended learning solutions. One objective of the assessment is to determine what proportion of residents may be more appropriately cared for in home settings.

Design a two-year demonstration program to grant nurse delegation to trained UHCW Level 2s and Level 3s in at least three inner-city sites and two rural sites.

Design and conduct a study (with oversight of the advisory committee) to evaluate the impact of the UHCW pilot program on (1) integration into the larger health care team through improved communication with primary care, (2) identification of emergent conditions, (3) patient safety, (4) physical and mental function, (5) consumer

10. Jennifer Farnham et al., *New Jersey Nurse Delegation Pilot Evaluation Report*, Rutgers Center for State Health Policy, April 2011, www.state.nj.us/humanservices/dds/projects/njndp/.
11. A graphic with a detailed listing of key functions at each level is included in Appendix A.

experience/satisfaction, (6) UHCW value and satisfaction, and (7) reduction in avoidable emergency department (ED) visits and hospitalizations.

Develop legislation to modernize the Nurse Practice Act to permit nurse delegation of paramedical services in home settings with appropriate oversight.

Make appropriate adjustments in UHCW educational curricula to integrate key lessons from implementation of the nurse delegation pilot and primary care integration.

Specific steps and timing include:

1. By 2019, select and convene an advisory committee to meet on a quarterly or biannual basis and complete a statewide assessment that addresses the following:
   - Current capacity of postacute facilities across the state (skilled nursing facility [SNF], rehab, etc.)
   - Percentage of population expected to be institutionalized by 2030
   - Number of facilities needed by geographic area
   - Percentage of older adults receiving in-home care, and projected savings as alternative to institutionalized care
   - Current capacity of community colleges and independent educational nonprofits to provide blended learning solutions (in-person and virtual training)
2. By January 2020, release request for proposals for demonstration evaluation team.
3. By April 2020, select sites and distribute funding to train UHCWs and licensed oversight team (registered nurse) and deploy evaluation teams.
4. By Q1 2022, release findings from the evaluation of the five pilot sites, including the recommendation for state legislation to codify and scale adjustments in nurse delegation of paramedical services with appropriate oversight, and establish funding mechanism (health plan, delivery system, and state).
5. By Q2 2023, pass legislation consistent with findings from the pilot program.

Estimated Costs

Over the four-year period, implementation of this recommendation would cost:

- $1 million for a statewide assessment of current capacity and projected needs in terms of housing, skilled nursing, and training tied to regional population projections.
- $250,000 per year to support convening and staffing a state advisory committee to oversee analyses, administer demonstration project, and design legislation.
- $5 million to design, implement, and evaluate a five-site, two-year demonstration project to demonstrate the safety and efficacy of nurse delegation. Funding $250,000/year for administration of grant, $750,000 over 2 years for evaluation, and an average of $375,000 per year, per site for 2 years.

Cost	Year 1	Years 2–3 (annual)	Year 4	Total
Statewide assessment of current capacity and needs	$1,000,000			**$1,000,000**
Administer and convene state advisory committee	$250,000	$250,000	$250,000	**$1,000,000**
Two-year demonstration project, including evaluation		$2,500,000		**$5,000,000**
Total	**$1,250,000**	**$2,750,000**	**$250,000**	**$7,000,000**

Impact Summary

The establishment of the universal home care worker job family, with training requirements, increasing pay scale, and expanded delegation of tasks by licensed nurses to home care aides is intended to increase the supply of private home care workers and to better enable them to meet the care needs of Californians living with disabilities in the community. Implementing this recommendation is estimated to cost $7 million over four years. The recommendation involves execution of a Health Workforce Pilot Project (HWPP) to test training and expanded delegation and evaluation impact.

The HWPP would contribute important knowledge in this area, as there are only a few studies that quantify the impact of home care aide training and/or expanded nurse delegation. Studies generally focused on worker satisfaction (improved), client satisfaction (improved), and adverse events (no change), but not worker turnover, client outcomes, or costs. A small body of research indicates that home care worker pay and job satisfaction is associated with lower turnover, which would result in a higher supply of home care aides; the existing research does not allow for quantification of the numeric or geographic increase. Nurse delegation of medication administration and other tasks to home care aides would reduce time demand per client on licensed nurses and thus enable them to work with a larger number of clients in home and community settings. Existing research documents that home care aides feel better prepared to meet clients' needs and communicate with care providers when they have received training, suggesting that job quality and worker confidence would improve. Studies have found that client satisfaction is greater when home care aides have received training and are able to perform more tasks. One evaluation found that training of home care aides in California reduced emergency department visits and inpatient stays. If the results of that evaluation were applied to all agency-employed home care aides in California after the HWPP and an implementation phase, savings would be more than $2.7 billion by 2028.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Appendix A: Job Family and Functions at Three Levels

Level 1 **Personal care and supporting living in the community through demonstrating proficiency in activities of daily living (ADLs) and instrumental activities of daily living (IADLs):**

- ADLs: bathing, dressing, toileting, transferring, and continence
- IADLs: finances, transportation, communications, shopping, meal prep, house cleaning, home maintenance
- Required "nonclinical" personal care training

Level 2 **Plus paramedical tasks for those with moderate functional limitations and cognitive decline:**

- Eye drops, oral meds, special diets, assistive devices, catheter care
- With remote oversight by a licensed professional
- Required "clinical" training

Level 3 **Plus paramedical services for the most complex cases (e.g., people with dementia):**

- Enemas/suppositories, injections, IV fluids, wound care, blood sugar testing, tube feeding, suctioning, oxygen/respiratory care, ventilators, etc.
- With remote oversight by licensed professional

Appendix B: Unlicensed Home Care and Home Health Workers in California

	Type of Care	Primary Type of Employer	Education/ Training	Certification/ Registration	Regulated By
Certified Nursing Assistant	Assistive personnel commonly giving personal care and some paramedical tasks, primarily in nursing homes	SNF	60 hours of classroom training and 100 hours of supervised training	Certified by the California Department of Public Health (CDPH), certificate renewed every two years with 48 hours of training	CDPH
Home Health Aide (HHA)	Personal care (ADLs/ IADLs) specified by treatment plan	Home health agency	120 hours at start and 12 hours of continuing education per year	Certified by CDPH	CDPH
Registered Home Care Aide (HCA)	Personal care	Home care organization	5 hours at start and 5 hours annually	Registered by the Home Care Services Bureau (HCSB)	HCSB
Registered Home Care Aide (independent)	Personal care	Consumer	5 hours at start and 5 hours annually	Registered by HCSB	HCSB
Unregistered Home Care Aide	Personal care	Consumer	None	None	None
IHSS Worker (registered and unregistered home care aide)	Personal care and paramedical services	Consumer	Orientation	Optional registration by HCSB	CA Welfare and Institutions Code

Appendix C: Model Programs

Successful implementation of this initiative will require attention to competencies by level, curriculum development, close collaboration with community colleges, leveraging the strengths of existing resources such as those developed for the IHSS workforce. It will also require close examination of evidence to date from studies that show that training for home care aides is beneficial for older adults. Following are some of the model programs to date:

A pilot project in Australia examined the impact of expanding the medication administration authority of community care aides (CCAs), who have similar training as home health aides in the US. CCAs received training in medicines support, and nurses received training in assessment, delegation, and supervision. The mixed-methods evaluation of this project reported that RNs developed high levels of trust and confidence in CCAs. In addition, nurses reported that the program reduced the need for duplicative nurse and CCA visits, thus allowing nurses to focus their visits on clients with more complex needs. There were no adverse medication incidents reported. Only a few studies have examined the safety of delegation of tasks such as medication administration to home health and home care aides. There is no research that demonstrates that restrictive regulations improve client safety or outcomes.

New Jersey established and evaluated a pilot program in which nurses at 19 home health agencies were authorized to delegate administration of medication and other tasks to certified home health aides. The evaluation revealed no adverse outcomes to consumer health, and higher levels of satisfaction for both home health aides and consumers. The pilot was controversial and initially was opposed by the State Nurses Association, which wanted to ensure that supervising nurses kept their authority over delegating the administration of medication, but the association eventually supported regulatory change. In March 2016, the New Jersey Board of Nursing amended its regulations to permit nurse delegation to home health aides, provided that nurses delegate at their own discretion and that there be an ongoing supervisory relationship between the nurse and the home health aide.

In a study of nurse delegation to unlicensed workers in multiple settings, the authors reported that there was no association between client outcomes and the setting, day, and time of delegation; patient age; health status stability; diagnosis; functional or cognitive ability; or the educational preparation of the nurse or direct care worker. Negative outcomes were more likely to occur when nurses had five or fewer years' experience delegating care and when unlicensed workers had less than one year of experience in their current setting. Positive outcomes were associated with regular monitoring of the unlicensed worker.

In Washington state, 64.9% of Medicaid/state-funded Long-Term Services and Supports (LTSS) goes to home- and community-based services, with 103 assisted living / residential care units per 1,000 for the population age 75 and older. A robust home care aide training and certification program was created and deployed. The state ranks fifth nationally on hospital admissions from home health (21.9% hospital admission) and ranks seventh from nursing homes (11.1% hospitalization within a six-month period).

AARP has actively advocated for greater authority to delegate tasks in home care settings to home health and home care aides. According to AARP, if California improved its regulations and programs to the average of the top five states in (1) affordability and access, (2) choice of setting and provider, (3) quality of life and quality of care, (4) support for family caregivers, and (5) effective transitions:

- $573,100,000 in additional revenue would be available for home- and community-based services instead of nursing homes.
- 176,180 more people would receive Medicaid LTSS (combination of eligible beneficiaries not enrolled and those enrolled who shift from SNF to community/home).
- 48,584 more home health and home care aides in the community (without consideration for the UHCW proposed strategy; number increases significantly to meet demand with the full implementation of the UHCW job family).

STRATEGY: STRENGTHEN THE CAPACITY, EFFECTIVENESS, WELL-BEING, AND RETENTION OF THE HEALTH WORKFORCE.

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

Main Takeaway

A psychiatric-mental health nurse practitioner (PMH-NP) program would prepare 300 advance practice RNs to practice as PMH-NPs. Over five years, these PMH-NPs would treat approximately 377,600 patients with mental health conditions. PMH-NPs would be able to address gaps in access because compared to physicians, NPs are more likely to serve rural and underserved populations. The total program cost is $24.6 million over five years or $82,000 per student, of which $36,000 is a stipend and $46,000 is education and marketing costs. Program costs and increased mental health treatment would be partially offset by decreased overall health care utilization for many of the 377,600 patients with mental health conditions treated by these providers. This is a nine-month program, and demand is dependent on the existing nurse workforce finding it attractive.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

Nearly 17% of Californians have mental health needs; 1 in 20 suffers from serious mental illness.[1] Over 50% of people with mental illness receive no care. In addition, the Healthforce Center at UCSF projected a 34% decrease in the number of psychiatrists in California between 2016 and 2028.[2] As the number of psychiatric medication prescribers declines, psychiatric-mental health nurse practitioners (PMH-NPs) are a potential solution to meet this need.[3]

Rationale

Advanced practice registered nurses (APRNs) specializing in psychiatric-mental health can help address the gap in mental health services. These registered nurses with advanced degrees train as nurse practitioners (NPs) who can diagnose and treat mental health and substance abuse problems and can provide counseling, crisis intervention, family and couples therapy, and prescription medications. In California, NPs are supervised by physicians through standardized agreements; however, PMH-NPs are not required to be supervised by psychiatrists.[4]

Prior efforts have demonstrated effective utilization of psychiatric NPs and how they fill a critical need. For example:

- In 2016, the Department of Health and Human Services Substance Abuse and Mental Health Services Administration launched a training program for nurse practitioners to prescribe buprenorphine in response to the opioid crisis.[5] Previously only physicians could prescribe this treatment for opioid addiction.
- Psychiatric nurse practitioners have been effectively utilized in meeting the needs of vulnerable patients in New Hampshire, where incremental legislative change resulted in full practice authority through significant change to the Nurse Practice Act in 2005.[6]

1. Wendy Holt and Neal Adams, *Mental Health Care in California: Painting a Picture*, California Health Care Foundation, July 16, 2013, www.chcf.org/publication/mental-health-care-in-california-painting-a-picture/.
2. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/publications/california-s-current-and-future-behavioral-health-workforce.
3. Ibid.
4. Joanne Spetz, *California's Nurse Practitioners: How Scope of Practice Laws Impact Care*, California Health Care Foundation, September 6, 2018, www.chcf.org/publication/californias-nurse-practitioners/.
5. "HHS to Launch Buprenorphine Training for Nurse Practitioners, Physician Assistants," press release, American Hospital Association, November 18, 2016, www.aha.org/news/headline/2016-11-18-hhs-launch-buprenorphine-training-nurse-practitioners-physician-assistants.
6. Alexander De Nesnera and Diane E. Allen, "Expanding the Role of Psychiatric Mental Health Nurse Practitioners in a State Psychiatric System: The New Hampshire Experience," *Psychiatric Services* 67, no. 5 (May 1, 2016): 482–84, doi:10.1176/appi.ps.201500486.

Experience with other programs suggests that incentives for participants, such as stipends to offset lost income during enrollment, can help sustain demand for the program. Clinical site placements and supervision may be achieved by partnering with large organizations (e.g., VA, prisons, large FQHCs) to secure adequate clinical training opportunities.

Proposed Action

UC schools of nursing propose to combine resources to prepare approximately 300 additional APRNs over the next five years. Three UC schools of nursing (UCSF, UCLA and UC Davis) would prepare NPs with the additional post-masters' training to practice also as PMH-NPs. UCSF is a nationally recognized leader in the preparation of PMH-NPs and currently has an in-person program with similar courses. A steering committee of psych-mental health faculty experts developed this collaborative program, which would employ online resources of the UCLA Extension Service. The nine-month (three quarters), 28-unit (part-time) program would include online and classroom instruction. Additionally, 500 hours of supervised clinical training would be required in facilities such as hospitals, Federally Qualified Health Centers (FQHCs), prisons/jails, schools and university student health centers, Veterans Administration facilities, or drug and alcohol treatment centers, in urban and rural communities. The program is intended to be self-supporting and would be incorporated into ongoing operational and financial plans of the schools of nursing within the proposed five-year project period. An assessment of program results and sustainability will inform future enrollment level and resource requirement decisions.

Estimated Cost

Building on existing resources, the plan requires additional investments. Costs include one-time planning and program development costs, followed by ongoing operational expenses and student stipend support.

- Estimated development costs (including course development, online platform, clinical site development) — $1.6 million.
- Ongoing annual operational costs (including instruction and marketing) — $2.9 million annually (including inflation at 3%), $12.2 million over five years.
- Recommended student aid: stipend of $36,000 per year to each student (64 students in year 1, assuming attrition in years 2–5) to incentivize student enrollment by offsetting lost income during enrollment —$10.8 million total over five years. Stipends are critical to achieving impact goals since target students are qualified, working NPs who would incur expenses and lost income during enrollment and may not earn additional compensation after program completion.

Program and Stipend Expenses	Year 1	Years 2–5 (annual)	Total
Planning and development	$1,200,000	$100,000	**$1,600,000**
Operations and marketing	$400,000	$2,950,000	**$12,200,000**
Stipends to incentivize enrollment	$2,300,000	$2,125,000	**$10,800,000**
Total	**$3,900,000**	**$5,175,000**	**$24,600,000**

Impact Summary

Over five years, establishing a psychiatric-mental health nurse practitioner (PMH-NP) program would cost $24.6 million and prepare 300 advance practice registered nurses (APRNs) to also practice as PMH-NPs. The program would cost $82,000 per student, of which $36,000 is a stipend and $46,000 is for education and marketing costs. A portion of the program cost and subsequent expenditures on new mental health treatment are anticipated to be offset by decreased overall health care utilization and increased economic productivity. This is a nine-month program, and demand is dependent on the existing nurse workforce finding it attractive.

Over five years, these PMH-NPs would treat approximately 377,600 patients with mental health conditions. PMH-NPs would be able to address gaps in access because compared to physicians, NPs are more likely to serve rural and underserved populations. PMH-NPs have demonstrated similar prescribing compared to psychiatrists and a whole-person approach to treatment; as a result this program would generate health and economic returns by providing quality behavioral health treatment access to underserved populations. People with mental health conditions tend to have higher overall health care costs and are more likely to have chronic health conditions. Behavioral health treatment is associated with medical cost savings of 20%—30%. Overall, treatment of depression is associated with gains in health returns and economic returns with a benefit-to-cost ratio of 5.3 to 1, and similar treatment of anxiety is associated with a benefit-to-cost ratio of 4.0 to 1. Medical savings accrue from decreases in inpatient length of stay and emergency department visits, along with the potential for a reduced cost-per-service compared to care by MDs. In addition, the overall economy benefits from decreased absenteeism and increased productive work time for those receiving appropriate behavioral health treatment.

(Excerpt from impact assessment conducted by Health Management Associates.)

STRATEGY: STRENGTHEN THE CAPACITY, EFFECTIVENESS, WELL-BEING, AND RETENTION OF THE HEALTH WORKFORCE.

Recommendation 3.4: Scale the engagement of community health workers, *promotores*, and peer providers through certification, training, and reimbursement.

Main Takeaway

Implementation of this recommendation is estimated to cost $68 million, which includes $4.8 million over three years for a pilot to plan and evaluate three strategies (certification of training programs, expand and strengthen trainings, change reimbursement) to stimulate and increase the supply of community health workers/*promotores* (CHW/Ps). It also includes $63.2 million over 10 years to create a peer provider certification and reimbursement mechanism. The peer provider recommendation has the potential to help address the behavioral health workforce shortage in California and contribute to improved outcomes and cost savings. However, there are other barriers (e.g., job quality, pay, stigma, and recognition of the contribution of the role) that may limit the ability to grow the peer provider workforce. Although positive impacts cannot be accurately quantified, it is reasonable to assume that should the certification and reimbursement methods be successfully implemented, California would likely experience positive gains in the supply of and demand for peer providers, which should lead to improved outcomes.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

Significant gaps in access to primary care and preventive services and treatment for mental health and substance use disorder (SUD) persist across California, and workforce shortages are one important barrier. Frontline workers have the potential to contribute significantly to addressing California's workforce challenges related to supply, diversity, and geographic distribution.

Rationale

Community health workers, promotores, and peer providers can help meet increasing demand for team-based integrated primary and behavioral health care, drawing on lived experience and experiential knowledge to support better health outcomes for all and to promote recovery and self-sufficiency for people with mental illness and SUD.[1]

Community Health Workers and Promotores

The American Public Health Association defines community health workers and *promotores* (CHW/Ps) as "frontline public health workers who are trusted members of and/or have an unusually close understanding of the community served. This trusting relationship enables CHWs to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery. CHWs also build individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support, and advocacy."[2]

Evidence demonstrates that CHW/Ps can have an impact on health outcomes in a variety of settings, with differing populations, and with specific diseases and conditions. Studies highlight positive outcomes with HIV, heart failure, stroke prevention, childhood asthma, and type 2 diabetes, among others.[3] Additionally, studies have shown CHW/Ps

1. "Support for Community Health Workers to Increase Health Access and to Reduce Health Inequities," Amer. Public Health Assn., November 10, 2009, www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/09/14/19/support-for-community-health-workers-to-increase-health-access-and-to-reduce-health-inequities; and Lisel Blash, Krista Chan, and Susan Chapman, *The Peer Provider Workforce in Behavioral Health: A Landscape Analysis*, UCSF Health Workforce Research Center on Long-Term Care, November 9, 2015, https://healthworkforce.ucsf.edu/sites/healthworkforce.ucsf.edu/files/Report-Peer_Provider_Workforce_in_Behavioral_Health-A_Landscape_Analysis.pdf (PDF).
2. "Community Health Workers," Amer. Public Health Assn.
3. Kyounghae Kim et al., "Effects of Community-Based Health Worker Interventions to Improve Chronic Disease Management and Care Among Vulnerable Populations: A Systematic Review," *Amer. Journal of Public Health* 106, no. 4 (April 1, 2016): e3–28, doi:10.2105/AJPH.2015.302987; and Lisa J. Trump and Tai J. Mendenhall, "Community Health Workers in Diabetes Care: A Systematic Review of Randomized Controlled Trials," *Families, Systems & Health* 35, no. 3 (Sept. 2017): 320–40, doi:10.1037/fsh0000283.

to be effective in deploying interventions posthospital discharge that have reduced readmission rates.[4]

Most CHW/Ps are employees or contractors of Federally Qualified Health Centers, public health agencies, or health plans, but there is growing interest among a wide range of health care organizations, including hospitals and health systems. CHW/P roles and contributions vary significantly. Some CHW/Ps focus on health education for specific health concerns, such as asthma or diabetes; others employ strategies to address the social determinants of health, such as housing access or workplace safety.[5]

CHW/Ps are often acknowledged for the "bridging role" they play to support those navigating between community, home, and health care settings. Experience indicates that CHW/Ps have maximum impact when they are fully integrated into a care team, have a clearly defined role, and a clear reporting structure.[6] Care team members should be trained on the CHW/P role, and supervisors and administrators should understand the importance of the work they do outside of the clinical setting. The role of CHW/Ps should be introduced in training programs for all health professionals, and employers should be made aware of the models and business case for CHW/Ps. Other elements critical for success are discussed in the appendix.

CHW/P training programs vary widely in content focus, pedagogy, intensity, and time to completion. There are currently no state-level or industry standards for CHW/P preparation. Many training programs are geared toward development of skills needed in a given delivery setting, program, or community. The lack of clarity and consistency in training is a barrier to scaled engagement with health care, public health, and social services agencies, both in California and nationally.[7]

Despite evidence of benefit, California has not created the financing mechanisms necessary to sustain widespread employment for CHW/Ps. As a result, programs that train CHWs are often underfinanced, and CHW/Ps themselves struggle with wage equity and advancement. Other states have tested and implemented financing models, some of which could be considered in California.[8]

Care models that include CHW/Ps may improve outcomes, increase efficiency, and lower health care costs.[9] CHW/Ps can help meet demand for clinical services while also serving as an important resource for population health improvement strategies.[10] California would benefit from increasing the number of CHWs in the health workforce and expanding the number and type of organizations that hire CHW/Ps. To achieve this scale, California will need to expand CHW/P

4. Roberto Cardarelli et al., "Reducing 30-Day Readmission Rates in a High-Risk Population Using a Lay-Health Worker Model in Appalachia Kentucky," *Health Education Research* 33, no. 1 (Feb. 1, 2018): 73–80, doi:10.1093/her/cyx064.
5. Andrew Broderick and Kevin Barnett, *Community Health Workers in California: Sharpening Our Focus on Strategies to Expand Engagement*, California Health Workforce Alliance, January 2015, https://calfutureworkforce.files.wordpress.com/2017/08/2015-chwa-community-health-workers-in-california-sharpening-our-focus-on-strategies-to-expand-engagement.pdf (PDF).
6. *Community Health Worker Integration: Issues and Options for State Health Departments*, Assn. of State and Territorial Health Officials, August 2017, www.astho.org/Health-Systems-Transformation/Documents/CHW-Integration-Toolkit-Version/; and Meryl Schulman and Caitlin Thomas-Henkel, "Integrating Community Health Workers into Care Teams: Lessons from the Field," Center for Health Care Strategies, March 17, 2017, www.chcs.org/integrating-community-health-workers-care-teams-lessons-field/.
7. "State Community Health Worker Models," Natl. Academy of State Health Policy, n.d., https://nashp.org/state-community-health-worker-models/; and Katharine London, Margaret Carey, and Kate Russell, *Community Health Worker Certification Requirements by State*, Connecticut Health Foundation, February 17, 2016, www.cthealth.org/publication/state-chw-certification/.
8. Ellen Albritton, *How States Can Fund Community Health Workers Through Medicaid to Improve People's Health, Decrease Costs, and Reduce Disparities*, Families USA, July 2016, https://familiesusa.org/product/how-states-can-fund-community-health-workers-through-medicaid; and Katharine London, Kelly Love, and Roosa Tikkanen, Sustainable Financing Models for Community Health Worker Services in Connecticut: Translating Science into Practice, June 2017, www.cthealth.org/publication/sustainable-financing-models-for-community-health-worker-services-in-connecticut-translating-science-into-practice/.
9. Diane Johnson et al., "Community Health Workers and Medicaid Managed Care in New Mexico," *Journal of Community Health* 37, no. 3 (June 2012): 563–71, doi:10.1007/s10900-011-9484-1; Sally Findley et al., "Community Health Worker Integration into the Health Care Team Accomplishes the Triple Aim in a Patient-Centered Medical Home: A Bronx Tale," *Journal of Ambulatory Care Mgmt.* 37, no. 1 (Jan.–Mar. 2014): 82–91, doi:10.1097/JAC.0000000000000011; Carl H. Rush, "Return on Investment from Employment of Community Health Workers," *Journal of Ambulatory Care Mgmt.* 35, no. 2 (Apr.–June 2012): 133–37, doi:10.1097/JAC.0b013e31822c8c26; and Holly C. Felix et al., "Medicaid Savings Resulted When Community Health Workers Matched Those with Needs to Home and Community Care," *Health Affairs* 30, no. 7 (July 2011): 1366–74, doi:10.1377/hlthaff.2011.0150.
10. Andrew Broderick et al., *Taking Innovation to Scale: Community Health Workers, Promotores, and the Triple Aim*, California Health Workforce Alliance, August 2013, www.phi.org/uploads/application/files/dwjet18q0tvqvzg9iwizi6ts5shmektcxn9tntu7rrp5tugfk5.pdf (PDF).

training programs, develop funding mechanisms for CHW/P training and employment, and improve employer clarity and confidence in CHW/P preparation. To ensure CHWs are able to have optimal impact as fully integrated members of the care team, clinicians, administrations, and other team members will need to be educated on the roles, skills, and contributions of CHW/Ps.

Peer Providers

A peer provider (also called a peer support specialist in the mental health context, and peer recovery coach in the SUD context) is a person who uses lived experience of recovery from mental illness and/or addiction, plus skills learned in formal training, to deliver services in behavioral health settings that promote mind-body recovery and resilience.[11] Services that peers provide can include individualized support, coaching, outreach, navigation, and education, among others. While peer providers have historically worked as volunteers and in nonclinical settings such as peer-run recovery organizations, increasingly they work in traditional care settings such as mental health and substance use disorder treatment clinics and psychiatric hospitals, primary care, and housing and correctional systems.[12] For example, the Department of Veterans Affairs hires peer specialists to help patients identify and achieve specific life and recovery goals, and a number of organizations in California use peers in transitional settings to serve as navigators and mentors for people leaving incarceration or upon discharge from psychiatric hospitalization.[13]

Unfortunately, quantitative data do not exist on peer employment, in part because no statewide scope of practice, standardized curricula, training or supervision standards, or certification protocols exist for peer providers in California. California is one of only two states (the other is South Dakota) that do not certify peer providers or have such certification under development.[14] As a result, peer providers' workforce education and training experience varies by geography and employer, and there is no clear career pathway for peer providers in California. Lack of certification limits providers' willingness to employ peers in traditional health care settings and contributes to the crisis in access to care for people with severe mental illness and SUD. Other benefits of certification would include increased acceptance of consumer perspectives in behavioral health treatment and paid employment for people with mental illness and SUD, who have extremely high rates of joblessness.[15]

California's failure to certify peer providers also limits the state's ability to use Medi-Cal to fund peer services.The Centers for Medicare & Medicaid Services (CMS) recognizes peer services as an evidence-based practice, and in 2007 published guidelines for billing Medicaid for these services.[16] To receive reimbursement, organizations that employ peer support specialists must meet standards for supervision, care coordination, and training and certification.[17] As of 2014, 36 states billed Medicaid for mental health peer support services, while 11 had similar provisions for substance use disorder peer support. Mechanisms for Medicaid billing for services include a State Plan Amendment, a rehabilitation services option, and a Medicaid waiver. States also may cover peer support services through Medicaid managed care or other arrangements.[18] Although California's lack of statewide certification and training prohibits the state from billing for peer services per se, California's current Medicaid State Plan does allow billing for rehabilitation, targeted

11. "Peer Providers," SAMHSA-HRSA Center for Integrated Health Solutions, n.d., www.integration.samhsa.gov/workforce/team-members/peer-providers.
12. Blash, Chan, and Chapman, *Peer Provider Workforce*.
13. Susan Chapman, Lisel Blash, and Joanne Spetz, *California Peer Providers in Transitions of Care*, Healthforce Center at UCSF, March 16, 2018, https://healthforce.ucsf.edu/publications/california-peer-providers-transitions-care.
14. Peer Specialist Workforce: State-by-State Information on Key Indicators, and Links to Each State's Peer Certification Program Web Site, Univ. of Illinois at Chicago, www.center4healthandsdc.org/uploads/7/1/1/4/71142589/a_national_overview_of_peer_training_and_certification_programs_plain_text_updated_january_2018.pdf (PDF).
15. Sita Diehl, Dania Douglas, and Ron Honberg, *Road to Recovery: Employment and Mental Illness*, National Alliance on Mental Illness, July 2014, www.nami.org/About-NAMI/Publications-Reports/Public-Policy-Reports/RoadtoRecovery.pdf (PDF); and Blash, Chan, and Chapman, *Peer Provider Workforce*.
16. Dennis G. Smith (director, Center for Medicaid and State Operations) to state Medicaid directors, August 15, 2007, www.integration.samhsa.gov/workforce/CMS_letter_with_date.pdf (PDF).
17. Emily Heller, "Using Peers to Improve Mental Health Treatment," *Legisbrief* 24, no. 10 (March 2016), www.ncsl.org/documents/health/lb_2410.pdf (PDF); and CMS' Clarifying Guidance on Peer Services Policy from May 2013 states that any peer provider must "complete training and certification as defined by the state" before providing billable services.
18. Blash, Chan, and Chapman, *Peer Provider Workforce*.

case management, and collaterals under "Other Qualified Providers," which includes peer providers. However, only a few California counties currently bill using those codes.[19] Peer providers are also recognized in the current Drug Medi-Cal Organized Delivery System under the Medi-Cal 2020 waiver.

Several legislative attempts have been made to create peer support specialist certification and a pathway to Medi-Cal reimbursement for their services.[20] In 2014, the Working Well Together Collaborative (funded by the Office of Statewide Health Planning and Development [OSHPD] with Mental Health Services Administration statewide workforce education and training dollars) completed a multiyear technical assistance project for peer workforce development, culminating in a multistate research, evaluation, and stakeholder process to develop recommendations for establishing peer support certification in California.[21] Most recently, SB 906 (2018) would have required the Department of Health Care Services (DHCS) to create a program for certifying peer support specialists.[22] Governor Brown vetoed the bill on September 29, 2018, citing the option to use peer support specialists as Medi-Cal providers in some circumstances as well as the cost of the program. Proponents of certification have argued that establishment of peer support services as specific services provided by specially trained and defined providers is needed to professionalize the service as well as expand the ability to access federal funding.[23]

Proposed Actions

This recommendation would create certification programs for two groups of frontline workers with the potential to contribute significantly to addressing California's workforce challenges related to supply, diversity, and geographic distribution in primary care, prevention, and behavioral health. As outlined below, the recommendation would create a pilot program for CHW/Ps, and an implementation program for peer providers.

Certification and Expansion of Training Programs for Community Health Workers and Promotores

The Commission recommends a three-year pilot project to facilitate the planning and evaluation of strategies to scale the engagement of CHW/Ps, as follows:

1. **Establish a formal certification process for CHW/P training programs provided by community colleges and community-based organizations:**
    a. Conduct an independent assessment of employer-based, independent, and academic institution–based training programs that describes content scope and intensity, time frame, prerequisites, pedagogical models, geographic focus, and competencies; assess gaps between projected demand of CHW/Ps and relevant provider training capacity.
    b. Reach consensus among CHW/Ps, advocates, health care employers, and payers on core competencies for optimal engagement and training of CHW/Ps, with particular attention paid to other team members with overlapping competencies, such as medical social workers or medical assistants.
2. **Expand and strengthen CHW/P training programs:**
    a. Fund the expansion of CHW/P training programs to meet the current and projected needs of health care employers.
    b. Expand the pool of funds available to support CHW/P participation in training programs (e.g., scholarships

19. Karin Lettau, *History of Peer Certification*, California Assn. of Mental Health Peer Run Organizations, February 25, 2016, http://mhsoac.ca.gov/sites/default/files/documents/2016-03/OAC_022516_7-HistoryPeerCertPPT.pdf (PDF).
20. Chapman, Blash, and Spetz, *California Peer Providers*.
21. Lucinda Dei Rossi and Debra Brasher, *Certification of Peer Support Specialists in California: Engaging State-Level Agencies*, California Inst. for Mental Health, June 2014, www.cibhs.org/sites/main/files/file-attachments/certification_of_peer_support_final_7-23-14.pdf (PDF).
22. SB 906, 2017–18, Reg. Sess. (Cal. 2018), https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB906.
23. Kirsten Barlow (County Behavioral Health Directors Assn. of California) to Karen Baylor (DHCS), August 17, 2016, https://camphro.files.wordpress.com/2016/05/sb-614-memo-to-dhcs_81716_final.pdf (PDF).

and/or loan repayment).

c. Increase by 25% the number of health professions training programs (e.g., MD, registered nurse, and nurse practitioner) that include the CHW/P role in curricula.

d. Include CHW/Ps as faculty and preceptors in health professions education and training programs.

e. Develop and disseminate a compendium of CHW/P best practices for employers, including staffing models and approaches to employer-based training.

f. Develop and deploy strategies to educate health care organizations and care teams on the roles and contributions of CHW/Ps.

3. Modify reimbursement mechanisms, with a focus on alternative payment models, to enable widespread opportunities for employment of CHW/Ps as fully integrated members of the care team in community and clinical settings) and assure CHW/Ps are paid a livable wage with opportunities for advancement:

a. Identify and remove barriers to reimbursement for services provided by CHW/Ps caring for patients covered by Medicare and Medi-Cal.

b. Further demonstrate return on investment (ROI) for private-sector health employers and develop a value proposition to encourage inclusion of CHW/Ps on care teams.

The pilot would be overseen by inclusive groups of advisors and stakeholders to ensure alignment and increase California's capacity to implement solutions.

Peer Provider Certification and Reimbursement

The Commission creation of a peer provider certification to support recognition and scaling of peer provider engagement in California. Establishment of certification and Medi-Cal reimbursement would require legislation. Key aspects of legislation would include:

1. Authorizing DHCS and OSHPD to develop educational requirements and certification standards for peer providers, including a code of ethics and core competencies
2. Designating a body to manage statewide certification and develop associated protocols
3. Authorizing DHCS to negotiate a State Plan Amendment (SPA) with CMS to develop a new service code for peer provider reimbursement

Estimated Costs

Combined cost across the two initiatives is $68 million: $4.8 over 3 years for the CHW/P certification process pilot, and $63.2 million over 10 years for the peer provider certification implementation.

Certification and Expansion of Training Programs for Community Health Workers and Promotores

Estimated costs for the three-year pilot are approximately $4,825,000. Results of the pilot will inform future costs.

Cost	Years 1–2 (annual)	Year 3	Total
Implementation plan including evaluation of associated implementation costs	$300,000	$100,000	**$700,000**
Development of certification process	$450,000	$300,000	**$1,200,000**
CHW/P training program support	$475,000	$450,000	**$1,400,000**
CHW/P participant support (e.g., training scholarships)	N/A	$300,000	**$300,000**
CHW/P employer support	$400,000	$425,000	**$1,225,000**
Total	**$3,250,000**	**$1,575,000**	**$4,825,000**

Peer Provider Certification and Reimbursement

Analyses conducted for SB 906 suggested that the action proposed would require additional investment of state funds. Costs would include both onetime costs for development of education requirements, curriculum standards, a code of ethics, and core competencies, and ongoing costs to administer the program. These costs would be offset by potential increased federal Medi-Cal reimbursement, and possibly increased local funding, for peer support services. Funding sources could include State Mental Health Services Act (MHSA/Proposition 63) administrative funds; Medi-Cal, upon approval of an SPA; and revenue associated with individual certification fees.

Cost	Year 1	Years 2–10 (annual)	Total
Development of educational requirements, curriculum standards, code of ethics, etc.	$2,000,000		**$2,000,000**
DHCS staff costs for investigation, discipline, and contract oversight		$3,800,000	**$34,200,000**
Contract costs for administration of certification program		$3,000,000	**$27,000,000**
Total		**$6,800,000**	**$63,200,000**

Impact Summary

Certification and Expansion of Training Programs for Community Health Workers and Promotores

The first component of this recommendation is likely to stimulate demand for and increase supply of community health workers and promotores (CHW/Ps) in California. Conditions in California, such as delivery system reform, emerging alternative payment methods, and a focus on addressing social determinants of health create an especially timely opportunity to scale the engagement of CHW/Ps. The recommendation, estimated to cost $4.8 million over three years, proposes three actions that together are intended to increase the use of CHW/Ps. The peer-reviewed literature indicates substantial evidence that CHW/Ps can have an impact on health outcomes for specific diseases and conditions, in a variety of settings, with differing populations. California has several waiver and related programs for systems reform, some intentionally inclusive of a key role for CHW/Ps, which makes efforts to scale this workforce timely and potentially beneficial in increasing demand for CHW/Ps and improving health outcomes for Californians. Implementing the actions in this recommendation could also be valuable in increasing the supply of CHW/Ps.

The first action, creating and piloting a formal certification process for CHW/P training programs, includes an assessment of existing capacity and development of consensus on key competencies for training. The goal of the certification process is to standardize curricular core content and competencies. About 10 states currently have a wide array of standardized training or certification programs, most of them voluntary. The second action, expanding and strengthening CHW/P training programs, would likely directly increase supply of CHW/Ps by providing tuition and stipend support. The third action, modifying reimbursement mechanisms, is likely to impact the demand for CHW/Ps. Previous efforts to scale the involvement of CHW/Ps in the community and health care delivery system have been hampered by the short-term nature of grant funding and the lack of a sustainable funding source for CHW/P roles, particularly in fee-for-service settings. Alternative payment models could alleviate the concern about billing for services performed by CHW/Ps. Return on investment models that identify the unique contribution of CHW/Ps may lead to more investment in CHW/P roles.

In the last eight years, the state and foundations have supported several task forces, reports, strategy documents, stakeholder convenings, and pilot efforts to reach the goal of scaling the engagement of CHW/Ps in the state. New efforts to support the engagement of CHW/Ps, such as those proposed in this recommendation, need to be carefully designed to include and use what was learned from past efforts in California.

Peer Provider Certification and Reimbursement

There is also a well-documented shortage and maldistribution of existing behavioral health providers in California. As care moves toward a model that is team-based, integrated, and recovery-focused, a greater demand for peer providers is expected. The second component of this recommendation, estimated to cost $63.2 million over 10 years, proposes increasing the use of peer providers in California through creation of a peer provider certification (via legislation) and Medi-Cal reimbursement (via a State Plan Amendment). Although some studies lack rigor, there is peer-reviewed evidence of the effectiveness of peer providers and their impact on outcomes, such as rehospitalization and recidivism in the criminal justice system.

Peer providers have lived experience in mental health and/or substance use disorder and add to the diversity of care team skills. There is evidence that peer providers, due to their unique connection to patients or clients, increase patient-client satisfaction in treatment and recovery. California lags behind other states in standardizing peer provider competencies and training, which may impact demand and employability. There are no reliable estimates of the number of peer providers trained or employed in the state, nor the demand to hire peer providers. A certification program that establishes standardized competencies and training is likely to grow the peer provider workforce. Equally important is the establishment of the proposed State Plan Amendment to allow reimbursement for these services, which may also enhance the sustainability of employment of peer providers and is likely to increase the demand for these workers. Some stakeholders note that certification may deny entry to the field to some qualified peers who may not be able to meet certification requirements. It is important to note that certification and a pathway to reimbursement alone may not be sufficient to grow the workforce. Addressing issues of job quality, pay, stigma, and recognition of the contribution of the role will likely also be needed to grow this role in California.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Appendix: Shared Assumptions Regarding Community Health Workers/Promotores

A stakeholder group was assembled to support the development of this recommendation. It developed the following shared assumptions to further describe the goals of scaling the engagement of CHW/Ps in health systems:

- CHW/Ps must have an equal voice in determining their future roles in California, including their role in team-based care design, delivery, and quality-improvement processes.
- To optimally engage CHW/Ps, health care financing and delivery must provide incentives for keeping people healthy and out of inpatient acute care settings, and providing assistance with transitional care to reduce unnecessary readmissions is essential.
- Key skills and competencies of CHW/Ps include a sophisticated integration of lived experiences, as well as knowledge of culture, community, and society.
- CHW/Ps bring passion, love, and deep empathy as well as a tradition of social justice to their work to improve the health and well-being of communities.
- Credentialing should focus on the organizations providing training on selected competencies rather than on individual CHW/Ps, and formal degrees in education are not required to serve as a CHW/P.
- Training programs can be developed and delivered by a broad spectrum of organizations and professionals in a variety of settings.
- Both clinicians and administrators/managers require in-depth training and education to optimally engage and support CHW/Ps as valued members of team-based care.
- CHW/Ps serve as bridges in team-based care, advocating on behalf of individuals, families, and communities to advance equity and well-being.
- CHW/P roles encompass a broad spectrum of services and activities at the individual, family, and community level (socioecological model), with attention to addressing the social determinants of health.
- CHW/Ps must be recognized as leaders in primary care and prevention, with responsibility and authority to effectively represent the interests of individuals, families, and communities.
- CHW/Ps have the right to a dignified wage commensurate with the sophisticated knowledge base and skills to manage the interface between medicine, health, family, culture, and community.

STRATEGY: STRENGTHEN THE CAPACITY, EFFECTIVENESS, WELL-BEING, AND RETENTION OF THE HEALTH WORKFORCE.

Recommendation 3.5: Strengthen training for primary care providers on behavioral health and wellness using train-the-trainer modalities.

Main Takeaway

Expanding the Train New Trainers Primary Care Psychiatry program will increase primary care clinicians' ability to address behavioral health needs by adding 100 trainers over 10 years, leading to an additional 1,640 providers trained. This will cost $26.5 million over 10 years ($16,159 per trained provider). The training is expected to reduce overall health care utilization and improve patients' economic productivity. Over 10 years, these fellows will treat approximately 294,000 patients with mild-to-moderate mental illness, an anticipated 185,000 of whom previously received no treatment for mental health.

The $17.5 million Train-the-Trainer Primary Care Pain Management fellowship will add 1,100 primary care pain management trainers over 10 years and lead to an additional 11,900 primary care providers getting trained on pain management, at a cost of $1,470 per trained provider. A total of 145,000 fewer chronic pain patients will be treated with opioids, positively impacting health care costs, utilization and patient work productivity. Costs could be reduced by $203 million.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

Primary care is often the first point of contact for detection and treatment of mental health conditions, which frequently accompany and complicate a substantial number of general medical conditions. Nearly 17% of Californians have mental health needs.[1] Approximately 25% of all patients seen in primary care have diagnosable mental disorders,[2] and primary care providers (PCPs) now provide over half of all mental health treatment in this country.[3] Yet, with the exception of some family practice residency programs,[4] primary care providers receive limited formal psychiatric education or experience during their training, and the majority of PCPs feel underprepared and undertrained to manage patients with mental illness.[5] A lack of mental health providers in California has created an urgent need to expand training of current primary care providers (physicians, nurse practitioners [NPs], and physician assistants [PAs]) to better meet patients' mental health needs. This need is particularly acute and growing among safety-net providers in Health Professional Shortage Areas (HPSAs). California is projected to have 41% fewer psychiatrists than needed by 2028; large, growing areas, including the Inland Empire and San Joaquin Valley, have lower per capita ratios relative to other regions of the state for all behavioral health occupations except psychiatric technicians.[6]

In addition, one in four people report suffering from chronic pain, and pain is the most commonly cited reason for seeking medical care.[7] Primary care providers are responsible for a vast amount of pain care and opioid prescribing.

1. Wendy Holt and Neal Adams, *Mental Health Care in California: Painting a Picture*, California Health Foundation, July 16, 2013, www.chcf.org/publication/mental-health-care-in-california-painting-a-picture/ (PDF).
2. Nahid M. Abed Faghri, Charles M. Boisvert, and Sanaz Faghri, "Understanding the Expanding Role of Primary Care Physicians (PCPs) to Primary Psychiatric Care Physicians (PPCPs): Enhancing the Assessment and Treatment of Psychiatric Conditions," *Mental Health in Family Medicine* 7, no. 1 (Mar. 2010): 17–25, www.ncbi.nlm.nih.gov/pmc/articles/PMC2925161/.
3. Mark Olfson et al., "National Trends in the Outpatient Treatment of Depression," *JAMA* 287, no. 2 (Jan. 9, 2002): 203–9, doi:10.1001/jama.287.2.203.
4. For example, the UC San Diego School of Medicine's Family Medicine Residency Program, http://familymedresidency.ucsd.edu/curriculum.html.
5. Hoyle Leigh, Deborah Stewart, and Ronna Mallios, "Mental Health and Psychiatry Training in Primary Care Residency Programs: Part II. What Skills and Diagnoses Are Taught, How Adequate, and What Affects Training Directors' Satisfaction?," *General Hospital Psychiatry* 28, no. 3 (May–June 2006): 195–204, doi:10.1016/j.genhosppsych.2005.10.004.
6. Janet Coffman et al., *California's Current and Future Behavioral Health Workforce*, Healthforce Center at UCSF, February 12, 2018, https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/California%E2%80%99s%20Current%20and%20Future%20Behavioral%20Health%20Workforce.pdf (PDF).
7. *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*, (Washington, DC: National Academies Press, 2018), doi:10.17226/13172; and Scott M. Fishman et al., "Core Competencies for Pain Management: Results of an Interprofessional Consensus Summit," *Pain Medicine* 14, no. 7 (July 1, 2013): 971–81, doi:10.1111/pme.12107.

However, minimal education in pain management is provided in medical, nursing, pharmacy, and other health professional schools, leaving frontline providers unprepared. This education gap has resulted in delayed, inaccessible, and inappropriate treatment for patients.

Rationale

Increasing the capacity of primary care providers to meet mental health needs can help address the shortage of mental health providers. Train-the-trainer programs offer a scalable way to enhance the skills of providers post-residency and increase the training of PCPs to more effectively diagnose, treat, and refer patients with behavioral health needs.

The UC Irvine/UC Davis Train New Trainers Primary Care Psychiatry (TNT-PCP) fellowship is a distance-based learning experience for individual providers starting its fourth cohort in 2019. Participants learn how to recognize symptoms of common psychiatric conditions, complete a quick and targeted assessment, and provide evidence-based treatment. The approach does not replace psychiatrists — fellows are trained to treat mild- to moderate-severity mental illnesses, while patients with more severe mental health conditions are referred to specialists. Over the first three years, 154 fellows completed the program, including MDs, DOs, PAs, and NPs) from throughout the state supported by a one-time $1 million allocation to California's Office of Statewide Health Planning and Development (OSHPD) to fund scholarships. OSHPD funding is not permanent and does not currently fund PAs or NPs. Although the program is offered through UC Davis/UC Irvine, it is available to PCPs throughout California and nationally. The fellowship program is designed to allow participants to complete training while continuing to work as a PCP. Fellows attend two intensive weekends of faculty-led instruction and complete remaining coursework remotely (including twice-monthly web-based instruction, training with a mentor, and regular call-in office hours with faculty). Fellows learn how to teach these principles to their primary care colleagues, which further expands behavioral health treatment capacity. The primarily "virtual" nature of the program enables the capacity for immediate and large-scale expansion and the ability to train providers in shortage areas throughout the state (as opposed to a traditional brick-and-mortar program).

A post-fellowship evaluation confirmed significant improvements in psychiatric knowledge of ~20% and in self-efficacy for treating depression of 40%. The fellows also increased their use of validated instruments for screening and monitoring depression, indicating that specialized training leads to greater effort in both screening for and treating depression and related disorders.

The UC Davis Train-the-Trainer Primary Care Pain Management Fellowship (T3 Fellowship) is a 10-month interactive, distance-based learning experience for individual providers in its second year of operation. The T3 Fellowship builds on the UC Davis Pain Extension for Community Health Care Outcomes (Project ECHO) program, which provides clinics and primary care health centers (including Federally Qualified Health Centers, which have been a primary target for the ECHO program) cohort-based tele-mentoring education through weekly videoconferences employing online didactics and case-based learning sessions.[8] The ECHO program is working to transform underserved California primary care health centers into primary care centers of excellence in pain care, and results include safer, more effective, and less costly pain care.[9] By training a growing workforce of safe pain management educators, the UC Davis T3 Fellowship is a highly scalable solution to reduce the pain-education chasm that fuels the opioid epidemic. The T3 Fellowship has been developing a small but growing cadre of primary care pain educators, general practitioners, and family practice clinicians who are not specialists but, with this education, can lead training programs like ECHO for their communities. The goal is to scale T3 programs so that every community in California has one or several qualified individuals who are committed to training their primary care colleagues about safe and effective pain management.

8. For more information about Project ECHO, visit www.ucdmc.ucdavis.edu/advancingpainrelief/Projects/ECHO.html.
9. J. G. Katzman et al., "Army and Navy ECHO Pain Telementoring Improves Clinician Opioid Prescribing for Military Patients: An Observational Cohort Study," *Journal of General Internal Medicine* (forthcoming), doi:10.1007/s11606-018-4710-5; and A. D. Furlan et al, "Evaluation of an Innovative Tele-Education Intervention in Chronic Pain Management for Primary Care Clinicians Practicing in Underserved Areas," *Journal of Telemedicine and Telecare* (forthcoming).

The T3 Fellowship offers participants education in comprehensive diagnosis, evidence-based treatment of pain, responsible and safe use of controlled substances, nonpharmacological and alternative modalities to treat pain, and integration of mental health strategies. Participants also learn how to recognize and offer appropriate management for symptoms of prescription drug abuse and addiction, how culture and language impact symptoms and care, appropriate treatment options, and effective methodologies to teach other providers and lead communities in the cultural shift needed to improve pain management and reduce overreliance on opioids. Evaluation of outcomes began with the initial cohort of 16 in 2017–18 and is continuing with the second cohort of 26 during 2018–19. The evaluation will assess the multiple impacts of the fellowship including access to care; safe and effective care; patient-centered care; timely, efficient, and equitable care; and prescriber satisfaction and retention, as well as ROI for health systems and payers. Evaluation results for the first cohort show that the majority of participants reported that their attitudes about caring for patients were more positive after the fellowship than before, knowledge of how to obtain information and resources for prescribing opioids increased, as did knowledge for tailoring and choosing prescriptions and pain management treatment options for chronic pain among diverse and/or underresourced patient populations and primary care settings. Participants also reported increased competencies related to explaining or teaching clinical methodology and treatment plans for chronic pain.

Proposed Action

This recommendation proposes to expand and scale training of primary care providers on behavioral health and wellness, leveraging two established programs.

Train New Trainers Primary Care Psychiatry Program: Expand participation in the UC Irvine/UC Davis TNT Fellowship Program: (1) secure support to make permanent the one-time FY 2018–19 $1 million budget allocation to OSHPD for TNT-PCP program scholarships; (2) fund 100 annual additional scholarships through OSHPD over 10 years for qualifying providers from safety-net institutions in HPSAs (physicians, NPs, and PAs in Federally Qualified Health Centers [FQHCs] and small and solo practices); (3) support targeted marketing of the program to increase the number, diversity, and geographic distribution of participating safety-net trainees; and (4) fund provider participation in the Essentials of Primary Care Psychiatry, a two-day continuing medical education conference that provides an abbreviated resource for PCPs who cannot complete the full yearlong fellowship. It acts as a recruiting resource for interested participants to apply for the full fellowship as well as providing traditional continuing medical education to providers to learn and implement basic skills of primary care psychiatry.

To date, program participants have not reflected the racial and ethnic diversity, geographic distribution, and settings needed to align with the program's goals. Marketing and scholarship selection criteria targeted toward applicants with the desired demographics would be critical for success. Collaboration with the California Primary Care Association to promote the program through its over 800 health center members would enhance recruitment. And the ability to offer scholarships to NPs and PAs would also be critical to meeting mental health workforce and treatment capacity goals.

Train-the-Trainer Primary Care Pain Fellowship: Substantially expand the existing T3 Primary Care Pain Fellowship by (1) affording scholarships to 1,100 primary care providers from safety-net institutions and underserved communities over a ten-year period; (2) increasing the capacity of the existing program to support a growing number of fellows; (3) developing a standardized training toolkit, including case reviews with proposed discussion questions and answers, as well as a step-by-step facilitator guide for T3 graduates to use in training their colleagues and community; (4) collecting outcome data to document the impact of T3 on clinician learning and patient care; and (5) expanding T3 Fellowship partner programs to three or more California medical schools in the following nine years.

UC Davis would act as the hub or "state office" for the program. The program team would include, at a minimum, a state office director to oversee the scaling of the program and the development of the program toolkit, an evaluation team, a technical assistance specialist to work with the other medical centers, and a local program coordinator to continue the implementation of the program at UCD.

UCD would develop and package the program toolkit and provide the program each year to a different medical institution, which would then implement the established UCD program in its region utilizing its own administrators and faculty. UCD would provide technical assistance to the medical centers to support the implementation, to assure quality control of the program content, and to facilitate the data collection for the outcomes evaluation.

Estimated Cost

Combined 10-year cost across the two initiatives is $44 million, primarily to fund scholarships.

Train New Trainers Primary Care Psychiatry Program: This proposal requires $2.65 million annually for a total of $26.5 million over 10 years. Costs include:

- Permanent funding for 64 scholarships annually ($1 million/year).
- Funding for an additional 100 scholarships annually ($15,500 per fellow, or $1.55 million/year).
- Targeted marketing, at $25,000/year.
- Tuition for Essentials of Primary Care Psychiatry conference ($25,000/year).
- Evaluation of program outcomes on an ongoing basis at $50,000/year.

Cost	Years 1–10 (annual)	Total
Permanent funding for current level of scholarships	$1,000,000	**$10,000,000**
Additional 100 scholarships	$1,550,000	**$15,500,000**
Targeted marketing	$25,000	**$250,000**
Tuition for Essentials of Primary Care Psychiatry conference	$25,000	**$250,000**
Evaluation	$50,000	**$500,000**
Total	**$2,650,000**	**$26,500,000**

Train-the-Trainer Primary Care Pain Fellowship: UCD would manage the overall funding and would subcontract with the other medical centers to implement the program within their regions. An investment of $17,500,000 would fund:

- A 10-year, scaled expansion of scholarships for fellows (50 scholarships of $15,000 each in year 1, with 20 additional scholarships each subsequent year in years 2–5 and capping at 130 recipients annually in years 6-10) resulting in the training of 1,100 safety-net providers
- Development of a training resource toolkit (including writers, video production, educational software, communication, and dissemination for operationalizing the program)
- Evaluation of program impact

Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6–10 (annual)	Total
Scholarships	$750,000	$1,050,000	$1,350,000	$1,650,000	$1,950,000	$1,950,000	**$16,500,000**
Toolkit development	$250,000	$250,000					**$500,000**
Program evaluation	$100,000	$100,000	$100,000	$100,000	$100,000		**$500,000**
Total	**$1,100,000**	**$1,400,000**	**$1,450,000**	**$1,750,000**	**$2,050,000**	**$1,950,000**	**$17,500,000**

Impact Summary

Expanding the Train New Trainers Primary Care Psychiatry program will increase the total number of trainers by 100. This is anticipated to increase the number of primary care clinicians trained to address behavioral health needs by 1,640 providers at a cost of $26.5 million over 10 years, although it is expected that a portion of the program cost and subsequent expenditures on new mental health treatment will be offset by decreased overall health care utilization and increased economic productivity. The cost per trained provider would be $16,159. Over 10 years, these fellows will treat approximately 294,000 patients with mild-to-moderate mental illness, an anticipated 185,000 of whom previously received no treatment for mental health. The 2016 cohort of fellows had statistically significant changes in their knowledge and practice patterns, including increased knowledge of psychiatry, increased self-efficacy in treating depression, and reduced stigma of behavioral health conditions. Fellows also reported being more confident in treating mental illness and depression after completing the fellowship. By targeting providers from and serving the most underserved populations, this program can increase the marginal impact of each fellow in improving behavioral health care to populations with unmet mental health care needs. Assuming fellows are newly equipped to provide appropriate screening, treatment, and referrals, this program will generate health and economic returns. People with mental health conditions tend to have higher overall health care costs and are more likely to have chronic health conditions. Behavioral health treatment is associated with medical cost savings of 20%–30%. Overall, treatment of depression is associated with gains in health returns and economic returns with a benefit-to-cost ratio of 5.3 to 1 and similar treatment of anxiety is associated with a benefit-to-cost ratio of 4.0 to 1. Medical savings accrue from decreases in inpatient length of stay and emergency department visits. In addition, the overall economy benefits from decreased absenteeism and increased productive work time for those receiving appropriate behavioral health treatment.

Expanding the Train-The-Trainer Primary Care Pain Management Fellowship is expected to cost $17.5 million over 10 years and will increase the number of primary care pain management trainers by 1,100 providers over 10 years — targeting safety-net and underserved communities with limited prior access to pain management curriculum. These trainers will in turn train approximately 11,900 (between 4,600 and 19,800) of their primary care colleagues on pain management within that 10-year time frame. Including fellowship participants and the providers they train, the cost per trained provider is $1,346. During the 10-year period, the trainers and their trainees will treat over 4.2 million patients with chronic pain. Evidence indicates that there is no statistically significant difference between trainer-led and expert-led sessions in improving knowledge of pain management. Primary care providers receiving pain care education change their opioid prescribing habits, in one instance reducing the share of patients with chronic pain treated with opioids from 56.2% to 50.5%. Providers also increased referrals to behavioral health and to physical therapy, and decreased referrals to orthopedic and neurosurgery specialists. Chronic pain and opioid abuse both are associated with higher health care costs and utilization and reduced worker productivity. Chronic pain is associated with a $4,500 to $7,700 annual increase in health expenditures, while opioid abuse is associated with $15,000 annually in higher health care costs. People with chronic pain are twice as likely to have a hospital admission compared to those without chronic pain and miss 2.1 to 4.7 more days of work per year. People who misuse opioids are 12 times more likely to have a hospital admission compared to opioid users without opioid use disorder, missing 15.6 more days of work per year. Improved use of effective pain management can improve utilization trends and outcomes. It is estimated that the T3 Fellowship program will reduce the number of patients treated with opioids by at least 145,000 over 10 years and reduce health care spending associated with opioid abuse as much as $203 million.

(Excerpt from impact assessment conducted by Health Management Associates.)

STRATEGY: STRENGTHEN THE CAPACITY, EFFECTIVENESS, WELL-BEING, AND RETENTION OF THE HEALTH WORKFORCE.

Recommendation 3.6: Establish a California Health Workforce Technology and Data Center to support the adoption of technologies that increase access to quality care.

Main Takeaway

The $2 million cost associated with establishing an advisory council, assessing technologies for advancing virtual care, and developing an organizational strategy and plan for a future California Health Workforce Center for Technology and Data does not have a direct impact on the cost of or access to care in the state. The cost of establishing and administering the center is unknown. If the center is successful at increasing the rate of technology-enabled virtual care adoption, a 40% or greater impact could be seen on some specialist care costs, particularly in rural and underserved areas.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

California providers and payers face increasing pressure to reduce the cost of care and improve health outcomes, in the face of a growing shortage of providers and an aging population. According to the Association of American Medical Colleges, there will be a shortage of between 42,600 and 121,300 physicians by the end of the next decade.[1] Our current health care system is simply inadequate to provide access to the right services at the right time and place and meet the population's growing health care needs.

Rationale

The large-scale adoption of evidence-based, technology-enabled care strategies offers the potential to strengthen the capacity of providers in California, facilitate greater access to services, and deliver quality care at scale.

Effectively integrated virtual care services and technologies have demonstrated the ability to improve access to specialty care services in underserved and remote communities, improve communication between patients and their care teams, improve patient engagement in managing their own care remotely, and lower avoidable costs by reducing the number of missed appointments and avoiding preventable use of costly health care services.[2] Data analytics capabilities give organizations a full view into their workforce, services provided, and populations served to help them make more informed operational and clinical decisions.[3] Broader adoption of these types of tools can enhance capacity by improving the management of a workforce and more effectively triaging care to the appropriate providers and populations through risk stratification and predictive analytics.

However, the required level of human, technical, and financial investment to implement virtual care and data strategies is significant and requires a comprehensive statewide strategy and dedicated organizational entity to prepare

1. Tim Dall et al., *The Complexities of Physician Supply and Demand: Projections from 2016 to 2030*, Assn. of Amer. Medical Colleges, March 2018, https://aamc-black.global.ssl.fastly.net/production/media/filer_public/85/d7/85d7b689-f417-4ef0-97fb-ecc129836829/aamc_2018_workforce_projections_update_april_11_2018.pdf (PDF).
2. Michael L. Barnett et al., "Los Angeles Safety-Net Program eConsult System Was Rapidly Adopted and Decreased Wait Times to See Specialists," in "Delivery System Innovation," special issue, *Health Affairs* 36, no. 3 (Mar. 2017): 492–99, doi:10.1377/hlthaff.2016.1283; Alice Hm Chen, Elizabeth J. Murphy, and Hal F. Yee Jr., "eReferral — A New Model for Integrated Care," *New England Journal of Medicine* 368, no. 26 (June 27, 2013): 2450–53, doi:10.1056/NEJMp1215594; Anuj K. Dalal et al., "A Web-Based and Mobile Patient-Centered 'Microblog' Messaging Platform to Improve Care Team Communication in Acute Care," *Journal of the Amer. Medical Informatics Assn.* 24, no. e1 (2017): e178–84, doi:10.1093/jamia/ocw110; Per E. Hasvold and Richard Wootton, "Use of Telephone and SMS Reminders to Improve Attendance at Hospital Appointments: A Systematic Review," *Journal of Telemedicine and Telecare* 17, no. 7 (2011): 358–64, doi:10.1258/jtt.2011.110707; and Patricia C. Dykes et al., "Prospective Evaluation of a Multifaceted Intervention to Improve Outcomes in Intensive Care: The Promoting Respect and Ongoing Safety Through Patient Engagement Communication and Technology Study," *Critical Care Medicine* 45, no. 8 (Aug. 2017): e806–13, doi:10.1097/CCM.0000000000002449.
3. Mohamed Khalifa and Ibrahim Zabani, "Utilizing Health Analytics in Improving the Performance of Healthcare Services: A Case Study on a Tertiary Care Hospital," *Journal of Infection and Public Health* 9, no. 6 (Nov.–Dec. 2016): 757–65, doi:10.1016/j.jiph.2016.08.016; and Mojisola Otegbeye et al., "Designing a Data-Driven Decision Support Tool for Nurse Scheduling in the Emergency Department: A Case Study of a Southern New Jersey Emergency Department," *Journal of Emergency Nursing* 41, no. 1 (Jan. 2015): 30–35, doi:10.1016/j.jen.2014.07.003.

the future health workforce to effectively use evidence-based, technology-enabled care strategies to transform care delivery at scale. Challenges providers face with the implementation of technology include a readiness (e.g., in leadership, vision, capital) and commitment to change (e.g., via culture, mindsets) and new workforce competencies required for transformation to occur at scale. Organizational change management is critical to successfully bring about the required cultural, social, legal, financial, and technological changes, as well as new resource capabilities across the organization in strategic partnerships, data sources, technology investments, and workflow redesign.

There are also environmental barriers to advancing the adoption of technology and data in health care. Simply overlaying technology onto existing care processes will not realize the potential effectiveness of these services to achieve the operational, clinical, and financial goals of health systems. Advancing service designs and the underlying business models require, for example, investment in broadband in rural areas, interoperability for regional data exchange, and cybersecurity for patient privacy at scale. The realization of clinical and financial benefits depends on laws and regulations that govern which services are covered, the provider types who can deliver services, and the specified rates at which services are reimbursed.

Proposed Action

This proposal would establish a California Health Workforce Center for Technology and Data to accelerate the adoption and integration of evidenced-based technologies that increase the capacity of California's existing and future workforce at scale. The four phases of implementation include:

1. **Establish an advisory council** comprising representatives from public and private health care, technology, academic, government, and consumer organizations to develop a comprehensive 10-year strategic plan that promotes a statewide vision of virtual care services as the standard of care, as well as priorities for advancing research, policy, and practice to advance services at scale and on a sustained basis.
2. **Assess standard and emerging technologies** to advance virtual care as a standard of care; identify existing technical, investment, workforce development, and regulatory and legal gaps toward that goal; and outline the priority actions and strategies needed to realize a systemwide transformation to a virtual care model. This assessment would also include a convening of community stakeholders to identify common challenges, experiences, and priorities that can influence the preparedness of populations to use digital health solutions and their willingness to engage in online activities, and to codesign, pilot, and implement community-centered training interventions that develop digital literacy and the effective use of virtual care in actively managing personal health.
3. **Develop an organizational strategy and plans** that would address the role of the California Health Workforce Center for Technology and Data in closing gaps in adoption, promoting evidence-based solutions, and generally enabling providers to leverage technology and data as strategic resources to support population health improvement goals. Additional key tasks would include identifying the right organizational structure, target stakeholders, funding strategy, and management team.
4. **Establish the California Health Workforce Center for Technology and Data** to oversee the alignment and coordination of workforce development strategies with advances in technology-enabled, data-driven care in areas of content and process to help integrate emerging applications of technologies into standard care practices. Activities could include:
    - **Invest in research** to evaluate virtual care interventions across diverse care settings, users, and delivery platforms to inform best practices in technology design, development, and implementation; strategies to integrate virtual care into existing service models; workforce development priorities; and the development of enabling policies, standards, and guidelines that promote scale and sustainability.
    - **Develop a statewide technology and data infrastructure** plan to inform investments that ensure equitable broadband access for underserved communities, support full interoperability for the bidirectional exchange

of data between service providers, and realize improved health outcomes for populations that have traditionally been underserved because of a lack of access to health services.

- **Develop an implementation roadmap** for virtual care services to promote the sharing of best practices and resources that will support scaling and replication statewide, as well as online toolkits for providers to assess organizational readiness and capacity, assist with implementation design and planning, and inform workflow redesign.

The center would partner with existing efforts in California to expand access to and use of virtual care services among safety-net health care providers (e.g., Center for Care Innovations, Center for Connected Health Policy, California Telehealth Resource Center), as well as building on national and state efforts that have implemented sustainable services at scale (e.g., Department of Veterans Affairs, Kaiser Permanente, Los Angeles County Department of Health Services). Additional resources to support the center include the health technology research and development resources and services of academic centers of excellence (e.g., University of California, Stanford University), health technology incubators (e.g., Rock Health), and industry consortia (e.g., California Telehealth Network, Aging 2.0).

Estimated Cost

The estimated cost for establishing the council and planning for the center is $2 million over two years, including $250,000 per year to support staffing and bimonthly convening of the council.

Cost	Year 1	Year 2	Total
Establish an advisory council	$250,000	$250,000	**$500,000**
Conduct an assessment	$700,000	$300,000	**$1,000,000**
Develop an organizational strategy	$500,000		**$500,000**
Establish the center	TBD	TBD	**TBD**
Total			**$2,000,000**

Impact Summary

The two years of the recommended effort would cost $2 million ($500,000 to support the advisory council, $1 million for an assessment of standard and emerging technologies to advance virtual care, and $500,000 to develop an organizational plan for the California Health Workforce Center for Technology and Data). The recommendation would not have any measurable impacts on workforce capacity, access to care, or cost in the two-year assessment period (2019–21), as the efforts outlined in the recommendation are focused on important but initial research and planning steps to promote telehealth adoption. Due to the lack of details on the center's scope or its development or operational costs, it is not possible to quantify the exact financial impacts of operating the center.

Telehealth implementation and adoption could be advanced by a dedicated organization that implements a comprehensive strategy, leveraging expertise across the public and private sector and targeting innovations to the areas of greatest need. To the extent that the center's efforts target populations and geographies with lower provider access, the potential for telehealth adoption is strong. Other factors that make it impossible to quantify 10-year financial impacts include a lack of information on the types of telehealth that would be included in center promotion and dissemination efforts, any council operational costs, and the fact that no entity is identified as responsible for the development and operations of the council or the center. A lack of clear funding sources and responsible entities also reduce the overall likelihood of positive cost, access, and care coordination impacts. Telehealth can reduce care costs in some settings but may be more expensive than in-person care, depending on the telehealth modality and care specialty. Research has found that for specialty care such as psychiatry, provision of care via telehealth can save 40% or more compared to in-person care. For underserved areas, however, the reduced per-unit cost must be considered in light of the likely increase in overall units provided when telepsychiatry is made widely available. The same holds true for other difficult-to-access services in rural and other underserved areas. While some data exist on the ability of telehealth to increase access, particularly in rural areas, without additional specificity, the positive impact is only directional.

(Excerpt from impact assessment conducted by Health Management Associates.)

STRATEGY: STRENGTHEN THE CAPACITY, EFFECTIVENESS, WELL-BEING, AND RETENTION OF THE HEALTH WORKFORCE.

Recommendation 3.7: Assess the well-being of health professions students and providers and develop a statewide action plan to proactively address burnout.

Main Takeaway

The proposed assessment would not have a direct impact on costs of, access to, or quality of care. Although the research (funded at $850,000, including administration costs) does not have impacts, one or more programs based on the research findings could benefit California providers and health care over time.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

Provider burnout is a critical issue facing California's health workforce, with implications for the health of all Californians. Approximately 50% of physicians in the United States experience burnout, and 15%–30% of medical students and residents screen positive for depression.[1] Mood disorders, substance abuse, and alcoholism are among the most diagnosed behavioral health conditions in physicians. The suicide rate among physicians is the highest of all professions at 28–40 per 100,000 — more than double the rate of suicide in the general population (12.3 per 100,000).[2] A recent study found a strong association between burnout and insufficient staffing, high turnover, and large patient panels.[3]

Burnout is not just a problem among physicians. Nationwide, 40% of registered nurses (RNs) over the age of 30 — and 49% of RNs under 30 — suffer from burnout.[4] Reasons for burnout among nurses include limited staffing and long work hours that can include mandatory overtime shifts. One study showed that rates of burnout for RNs increase 23% for every patient added to a shift workload.[5] A discussion paper recently published by the National Academy of Medicine calls attention to a lack of up-to-date data on nurse suicides.[6]

Research shows that provider burnout can contribute to increased patient wait times, especially when physicians retire early or reduce clinical time.[7] It can also lead to medical errors and poor patient safety outcomes.[8] The financial cost of provider burnout is also high when you factor in the combined cost of medical errors,[9] lower rates of patient satisfaction, decreased productivity, and turnover.[10] (The replacement cost for a nurse is $62,100–$67,000.[11] For a physician, it is typically two to three times annual salary.)[12] The estimated cost of physician burnout in Canada is $213.1 million (CAD$) through early retirement ($185.2 million) and decreased clinical hours ($27.9 million).[13]

1. Tait D. Shanafelt and John H. Noseworthy, "Executive Leadership and Physician Well-Being: Nine Organizational Strategies to Promote Engagement and Reduce Burnout," *Mayo Clinic Proceedings* 92, no. 1 (Jan. 2017): 129–46, doi:10.1016/j.mayocp.2016.10.004.
2. Pauline Anderson, "Physicians Experience Highest Suicide Rate of Any Profession," *Medscape*, May 7, 2018, www.medscape.com/viewarticle/896257.
3. Christian D. Helfrich et al., "The Association of Team-Specific Workload and Staffing with Odds of Burnout Among VA Primary Care Team Members," *Journal of General Internal Medicine* 32, no. 7 (July 2017): 760–66, doi:10.1007/s11606-017-4011-4.
4. Priscilla Holdren, David P. Paul III, and Alberto Coustasse, "Burnout Syndrome in Hospital Nurses" (paper presented at BHAA International 2015, Chicago, IL, March 2015).
5. Linda H. Aiken et al., "Hospital Nurse Staffing and Patient Mortality, Nurse Burnout, and Job Dissatisfaction," *JAMA* 288, no. 16 (Oct. 23/30, 2002): 1987–93, doi:10.1001/jama.288.16.1987.
6. Judy Davidson et al., "Nurse Suicide: Breaking the Silence," Natl. Academy of Medicine, January 8, 2018, doi:10.31478/201801a.
7. Jean E. Wallace, Jane B. Lemaire, and William A. Ghali, "Physician Wellness: A Missing Quality Indicator," *Lancet* 374, no. 9702 (Nov. 14, 2009): 1714–21, doi:10.1016/S0140-6736(09)61424-0.
8. Louise H. Hall et al., "Healthcare Staff Wellbeing, Burnout, and Patient Safety: A Systematic Review," *PLoS ONE* 11, no. 7 (July 8, 2016): e0159015, doi:10.1371/journal.pone.0159015.
9. Anderson, "Physicians."
10. Tait D. Shanafelt, Joel Goh, and Christine Sinsky, "The Business Case for Investing in Physician Well-Being," *JAMA Internal Medicine* 177, no. 12 (2017): 1826–32, doi:10.1001/jamainternmed.2017.4340; and Wallace, Lemaire, and Ghali, "Physician Wellness."
11. Holdren, Paul, and Coustasse, "Burnout."
12. Shanafelt and Noseworthy, "Executive."
13. Carolyn S. Dewa et al., "An Estimate of the Cost of Burnout on Early Retirement and Reduction in Clinical Hours of Practicing Physicians in Canada," *BMC Health Services Research* 14, no. 1 (2014): 254, doi:10.1186/1472-6963-14-254.

Rationale

Further assessment is needed in California to better understand this issue. The importance of investing in provider well-being is outlined in a recent article that includes recommendations and resources for calculating return on investment based on provider type and organization size.[14] Another recent study found a strong association between burnout and insufficient staffing, high turnover, and large patient panels.[15] Compared to the general provider population, it is likely that there are higher burnout rates among safety-net clinicians who provide care in underresourced settings to patients who experience adverse health outcomes associated with social determinants of health.

Research suggests that addressing burnout at the system or organizational level is more effective than addressing it at the individual level.[16] The assessment would consider systemwide strategies such as (1) medical scribes and/or support staff [17] in underserved areas for safety-net providers; (2) programs to promote suicide prevention and to change the culture in medical school programs and continuing education; and (3) adjustments for medical licensure applications, to encourage health care providers to seek mental health treatment.[18] In addition, the Mayo Clinic has also developed nine detailed strategies for reducing provider burnout.[19]

Proposed Action

Conduct a statewide assessment to (1) examine specific causes and contributing factors in different settings, (2) assess the costs (both monetary and quality) of burnout, and (3) identify and design proactive interventions that offer the greatest potential to produce measurable results. Based on findings, develop a detailed strategy to address the problem.

The assessment should explore: (1) issues related to health care transformation and the shift to team-based care; (2) provider burnout across care delivery settings (safety-net, multispecialty, large managed care organizations); (3) needs of and relevant interventions for Health Professional Shortage Areas; and (4) emerging models for addressing burnout among health professions students, including the UC San Diego School of Medicine Suicide Prevention and Depression Awareness Program.[20]

The first step in the assessment would be to convene a Technical Advisory Committee of content experts from the academic, research, and practice arenas to inform the design and focus of the inquiry, and ensure that the assessment identifies and addresses the key questions. The Technical Advisory Committee would reconvene after the completion of the data collection, compilation, and analysis to inform the interpretation of findings and the design and development of a proactive strategy to address this growing problem.

14. Hall et al., "Healthcare."
15. Helfrich et al., "Association."
16. Shanafelt and Noseworthy, "Executive."
17. Anderson, "Physicians."
18. Liselotte N. Dyrbye et al., "Medical Licensure Questions and Physician Reluctance to Seek Care for Mental Health Conditions," *Mayo Clinic Proceedings* 92, no. 10 (Oct. 2017): 1486–93, doi:10.1016/j.mayocp.2017.06.020.
19. Shanafelt and Noseworthy, "Executive."
20. Christine Moutier et al., "The Suicide Prevention and Depression Awareness Program at the University of California, San Diego School of Medicine," *Academic Medicine* 87, no. 3 (Mar. 2012): 320–26, doi:10.1097/ACM.0b013e31824451ad.

Estimated Cost

The estimated cost of a one-year statewide assessment that includes key informant interviews of providers, administrators, and health professions education students and faculty, site visits at urban inner-city and rural safety-net settings, targeted data collection, and a detailed strategy to proactively address this issue in California is $850,000, including $100,000 for administration of the grant.

Cost	Year 1	Total
Administration	$100,000	**$100,000**
Statewide assessment	$750,000	**$750,000**
Total	**$850,000**	**$850,000**

Impact Summary

The recommendation to fund research has no direct impact on health care costs, improved access, and quality of care. The proposed $750,000 in research and $100,000 in administration costs would increase knowledge but would not change practice patterns or otherwise benefit providers. However, assuming the assessment and strategy developed based on the results lead to the implementation of effective programs and policies, the recommended research and strategy document could lead to change that increases the supply and retention of health care workers, reduces the rate of provider distress and turnover, and improves patient care.

Research on provider burnout has found a negative relationship between burnout and health care quality and patient safety. A reduction in provider burnout could improve quality of care and patient safety by as much as 20%, although it would be difficult to directly measure the impact of happier/less stressed providers given the confounding variables. Recognizing that provider burnout is a cause for providers to leave active practice early, reducing burnout can reduce costs associated with replacing these providers. Significantly reducing the number of physicians and nurses who leave practice could save the health care system $2 billion per year. This savings more than offsets the cost of determining effective methods for limiting provider burden, developing a plan based on this information, and implementing strategies. Reducing provider burnout can have a disproportionately positive benefit on clinical settings serving low-income patients or those with complex care needs, as these settings are associated with greater provider burnout. Assessment of the indirect impact of the recommendation is limited because there is no organization tasked with acting on strategies identified in the research.

(Excerpt from impact assessment conducted by Health Management Associates.)

STRATEGY: STRENGTHEN THE CAPACITY, EFFECTIVENESS, WELL-BEING, AND RETENTION OF THE HEALTH WORKFORCE.

Recommendation 3.8: Establish primary care spending targets and requirements for public and private payers.

Main Takeaway

Establishing a statewide collaborative to measure and then set primary care spending benchmarks has promise to increase demand for primary care providers and use of primary care services and to reduce overall health care costs. The number of unknowns (e.g., future increases in primary care spending as a result of the collaborative) do not allow for precise measurement of potential cost savings, but results from a Commonwealth Fund report suggest savings in California could be several billion dollars annually. The anticipated cost of the proposed collaborative is $1.1 million over four years.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

Context

Primary care helps prevent illness and premature death, is associated with a more equitable distribution of health in populations, and is the foundation of a high-quality, cost-effective health care system.[1] Despite the importance of primary care, the United States has historically underinvested in these services. This is one of four fundamental reasons the US health system ranks last for health outcomes among high-income countries, according to a Commonwealth Fund analysis.[2] In California, both low reimbursement rates in Medi-Cal and the overall lack of investment in primary care have contributed to significant shortages of providers in rural and inner-city areas, as well as increases in overall medical expenditures. Although primary care accounts for only a small amount of total overall medical spending, the decisions made in this setting have consequential results on the rest of a patient's medical care.[3] The Commonwealth Fund released a study[4] estimating that a permanent 10% increase in Medicare primary care payment would increase primary care visits by 9% and raise the overall cost of primary care visits by 17%. These increases would yield more than a sixfold annual return in lower Medicare costs for other services — mostly inpatient and postacute care — once the full effects on treatment patterns are realized. The net result would be a drop in Medicare costs of nearly 2%.

Rationale

Health plans and insurers have little financial incentive to invest in primary care given low reimbursement rates (particularly for Medi-Cal patients) and concerns about loss of investments due to patient "churn."[5] The lack of investment in primary care contributes to practitioner burnout, reduced access in rural and inner-city communities, and to medical students favoring subspecialization.

Experiences in Rhode Island[6] and Oregon[7] demonstrate significant potential to decrease overall medical care costs

1. Barbara Starfield, Leiyu Shi, and James Macinko, "Contribution of Primary Care to Health Systems and Health," *Milbank Quarterly* 83, no. 3 (2005): 457–502, doi:10.1111/j.1468-0009.2005.00409.x; and *Health at a Glance 2015: How Does the United States Compare?*, Organisation for Economic Co-operation and Development, www.oecd.org/unitedstates/Health-at-a-Glance-2015-Key-Findings-UNITED-STATES.pdf (PDF).
2. Christopher F. Koller and Dhruv Khullar, "Primary Care Spending Rate — a Lever for Encouraging Investment in Primary Care," *New England Journal of Medicine* 377 (2017): 1709–11, doi:10.1056/NEJMp1709538.
3. Mark W. Friedberg, Peter S. Hussey, and Eric C. Schneider, "Primary Care: A Critical Review of the Evidence on Quality and Costs of Health Care," *Health Affairs* 29, no. 5 (May 2010): 766–72, doi:10.1377/hlthaff.2010.0025.
4. James D. Reschovsky et al., *Paying More for Primary Care: Can It Help Bend the Medicare Cost Curve?*, The Commonwealth Fund, March 2012, www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_issue_brief_2012_mar_1585_reschovsky_paying_more_for_primary_care_finalv2.pdf (PDF).
5. "Patient Turnover in ACOs Destroys Credibility," *Physicians for a National Health Program Blog*, June 23, 2015, http://pnhp.org/blog/2015/06/23/patient-turnover-in-acos-destroys-accountability/.
6. *Primary Care Spending in Rhode Island*, State of Rhode Island, January 2014, www.ohic.ri.gov/documents/Primary-Care-Spending-generalprimary-care-Jan-2014.pdf (PDF).
7. *Primary Care Spending in Oregon: A Report to the Oregon State Legislature*, State of Oregon, February 2018, www.oregon.gov/oha/HPA/dsi-pcpch/Documents/SB-231-Report-2018-FINAL.PDF (PDF).

and to encourage investments in primary care workforce. The key first step was to establish an agreed-upon framework to measure expenditures on primary care, and then to set agreed-upon spending benchmarks. In both states, a significant proportion of additional expenditures made by payers were on non-claims-based spending, which includes investments in workforce and information systems, with particular attention to increasing access and quality for underserved populations with higher prevalence and acuity of illnesses.

Initial analyses of expenditures in Rhode Island and Oregon showed that spending varied widely (the first report in Oregon showed figures ranging from a low of 4.1% to a high of 34.6%) and that primary care spending generally accounted for a small proportion of total health expenditures. In 2009, the Office of the Health Commissioner in Rhode Island established affordability standards, requiring health insurers to increase their expenditures by 1% per year between 2010 and 2014. By 2012, primary care spending increased 37% ($18 million), and total medical spending fell 14% ($115 million).[8]

In Oregon, SB 231 was signed into law by Governor Kitzhaber in June 2015. The bill requires all prominent carriers (health insurers and plans with an annual premium income of $200 million or more) to report the percentage of the carrier's total medical expenses allocated to primary care. Subsequent legislation required health plans to spend a minimum percentage of premium dollars on primary care. The state government determines the primary care services for which costs must be reported and collects and evaluates the information submitted by carriers. The state prepares a public report on the proportion of total medical spending dedicated to primary care services, innovation, and care improvement. In 2017, Oregon passed a bill mandating a 12% primary care minimum spend by 2023, excluding drugs, vision, and dental. The state government also was required to convene a Primary Care Payment Reform Collaborative, comprised of a broad range of providers, payers, and other primary care stakeholders to advise, assist, and share best practices to direct greater health care resources and investments toward care innovation and care improvement in primary care.

California policymakers included $60 million in this year's state budget to fund a statewide all-payer claims database called the California Healthcare Cost Transparency Database (CHCTD).[9] The database would be developed and managed by the Office of Statewide Health Planning and Development, bringing together information from health plans and other payers to increase payment and pricing transparency and to inform policy decisions. The authorization of funding to establish the CHCTD creates an important opportunity to elevate the issue of primary care investment as central to improving access and quality and reducing overall health care expenditures.

Proposed Action

This proposal builds on the creation of the CHCTD to ensure clarity and consistency in the classification and public reporting of data, with particular attention to expenditures in primary care. As demonstrated in other states, transparent reporting builds public support and momentum for actions in the legislative and/or executive branches that encourage or require carriers to dedicate a greater proportion of expenditures to primary care.[10] The CHCTD statute calls for the convening of a review committee to support the establishment, implementation, and administration of the database.

This proposal 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.

8. State of Rhode Island, *Primary Care*.
9. See Chapter 8.5 of AB 1810 Health at http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB1810.
10. Farzad Mostashari, Darshak Sanhavi, and Mark McClellan, "Health Reform and Physician-Led Accountable Care: The Paradox of Primary Care Physician Leadership," *JAMA* 311, no. 18 (May 14, 2014): 1855–56, doi:10.1001/jama.2014.4086.

Options for action to increase expenditures include legislation or executive orders to set benchmarks for minimum expenditures and/or incentives to achieve cost savings.

Estimated Cost

The total cost over four years is estimated at $1,075,000 for two main components. Estimated cost to convene a statewide collaborative to meet quarterly during the first year and biannually for an additional three years to secure agreement on the definition of primary care for reporting and establish standards is $475,000. An additional $600,000 ($150,000 over the four-year period) is allocated to explore options for benchmarking and increasing expenditures, and to document annual primary care expenditures and its relationship to access and total cost of care.

Cost	Year 1 (start-up)	Years 2–4 (annual)	Total
Convene collaborative	$175,000	$100,000	**$475,000**
Options for benchmarking, document annual primary care expenditure	$150,000	$150,000	**$600,000**
Total	**$325,000**	**$250,000**	**$1,075,000**

Impact Summary

Research finds that increased investment in primary care can improve access to care and lower overall health care costs. Such investments would increase the demand for, and supply of, health care professionals focused on primary care. This recommendation proposes measuring and communicating the extent of primary care spending in California to provide a baseline from which to set primary care spending targets. A statewide collaborative would address primary care reporting definitions, assess spending benchmarks, and report on impacts. The anticipated cost of the proposed collaborative is $1.1 million over four years. Assuming the collaborative was successful, in the short term, California stakeholders would better understand what expenditures are being reported as primary care, including the overall distribution of health care expenditures and proportion spent on primary care.

To the extent these efforts contribute to a redistribution of health care resources to primary care, longer-term impacts of this recommendation could include increased demand for primary care providers and use of primary care services with potentially lower overall health care costs. The precise extent of the reduction in health care costs is not currently possible to measure and would depend on several unknown variables, including the magnitude of the increase in primary care spending resulting from the yet to be established spending targets, as well as how the increased primary care spending might be invested (e.g., higher payments for primary care services, higher payments to primary care providers, higher primary care salaries). An issue brief from the Commonwealth Fund reported that a 10% increase in payments for primary care services is expected to result in a nearly 2% decrease in overall spending for the Medicare program. Applying these results to California (and assuming that the overall population would experience results similar to those in the Medicare program) suggests that the state could experience an overall reduction in health care costs of several billion dollars annually.

(Excerpt from impact assessment conducted by Healthforce Center at UCSF.)

STRATEGY: STRENGTHEN THE CAPACITY, EFFECTIVENESS, WELL-BEING, AND RETENTION OF THE HEALTH WORKFORCE.

Recommendation 3.9: Build capacity of local public health agencies to support collaborative community health improvement through state-hospital matching funds.

Main Takeaway

There is insufficient literature to analyze the impact of this recommendation on the many proposed community-level health outcomes. This is in part due to the fact that there are limited, rigorous approaches to evaluating the effects of community-level health improvement activities. Over a three-year period, the recommendation would cost $33.5 million across the three components. The bulk of the funds ($20 million over three years) would fund the matching fund pool, while fund pool administration would cost $500,000 for this period. Another $3 million would support administration, a state advisory body, local public health agency assessment, and an Office of Statewide Health Planning and Development GIS analysis. Evaluation would cost $10 million.

The Commission should not be discouraged from pursuing this recommendation, particularly in light of the general gains to be had from stakeholder engagement, cross-sector partnerships, and from policy changes that may be realized from these efforts and that are vital to any future community-focused programs. Importantly, however, significant attention and resources also should be devoted to designing effective evaluation methodology and data collection before grantees implement their efforts and to allow timely and useful assessments of the impact of community-level improvement activities.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

Current investments in prevention are highly fragmented, often poorly targeted, and inadequate to produce measurable improvements in health status in local communities. Public sector allocations are almost exclusively directed to categorical programs, with limited attention and resources to explore how efforts may be better aligned and focused where health inequities are concentrated. Tax-exempt hospitals fulfill their charitable obligations primarily through payment for uninsured and publicly insured populations in emergency room and inpatient settings. Much of this high-cost care is for treatment of preventable conditions. Only 5%–10% of hospitals' community benefit expenditures are for prevention-oriented programs. These are typically small-scale efforts that are insufficiently resourced and often not targeted in areas where health inequities are concentrated. In population centers with multiple hospitals, the reluctance to reach across competitive lines to align and scale efforts represents a missed opportunity to produce measurable outcomes for the community.

Local public health agencies (LPHAs) are uniquely positioned to help develop comprehensive strategies that align and focus assets from multiple sources, monitor progress toward measurable outcomes, and develop policies that codify, scale, and sustain positive results. Most, however, lack the internal expertise and discretionary resources needed to play this role. While many LPHAs collaborate with nonprofit hospitals to conduct health assessments, they rarely play a role in the design, implementation, and evaluation of services and activities to address the unmet health needs of their community.

Data analytics have created a new age of transparency and the ability to compare and map differences in prevalence and acuity of chronic disease, preventable ED and inpatient health care utilization, food insecurity, and homelessness. Unfortunately, this powerful asset is not being used optimally to improve community health. For urban census tracts redlined seven decades ago that experienced capital flight, collapse of property values, and intergenerational poverty, these analytic tools provide an evidence base to make a compelling case for aligning resources to improve health in these communities.

Rationale

This strategy creates a financial incentive (through matching funds) and moral imperative (through increased public

transparency) to build local and/or regional population health and social epidemiological workforce capacity in LPHAs and community-based organizations (CBOs) that supports better alignment and focus of resources in communities where health inequities are concentrated.

Proposed Action

Establish a state fund for self-defined geographic regions that can provide matching funds from hospitals to be used by LPHAs or CBOs to engage a full-time, senior staff person with epidemiological expertise and support staff to:

- Support comprehensive community health assessments that combine and map data from multiple sectors and engage diverse stakeholders
- Identify potential assets[1] across sectors that can be optimally aligned
- Engage institutional and community stakeholders in an ongoing process to design comprehensive, geographically focused health improvement strategies
- Monitor progress toward agreed-upon outcomes
- Facilitate the identification and design of quality-improvement adjustments that increase effectiveness and ensure a focus on the elimination of health and economic inequities

Key components of this strategy include:

- Establish state fund for counties or self-defined regions with multiyear allocations for applicants with commitment to alignment and focus of resources in communities where health inequities are concentrated. Hospitals in urban areas would make a 50% matching contribution to access state funds; hospitals in rural areas would make a 35% financial match.
- Private health philanthropy invests targeted resources to support the evaluation of process, indicators, and outcomes (including institutional systems changes) and to support the design of public policies that codify, scale, and sustain positive regional and statewide outcomes.
- Office of Statewide Health Planning and Development provides small-area GIS analysis for regions that maps readmissions and preventable emergency department and inpatient use at the census tract level[2] by hospital facility and payer source, with overlay of household income and related census data.

Estimated Cost

The cost over 3 years is estimated at $33,500,000 for three components:

1. Administration and analysis — The costs of state administration of the funds, management of the state advisory body, the statewide assessment of LPHA capacity (and consideration of alternatives), and the OSHPD GIS analysis is estimated at $2 million for 2019, and $500,000 per year for years 2 and 3. After the first three years, a determination would be made regarding how it could be streamlined.
2. Matching fund pool — With the assumption that rural counties will consolidate as joint applicants, an estimate of 40 county/regional applications, and an estimate of $500,000 for a three-year allocation, the total, including $500,000 for administration, would be $20.5 million for the first three years.
3. Evaluation — The estimated cost for the evaluation and public policy development components of the initiative is up to $10 million over three years (at $250,000 per site). The evaluation would include a statewide analysis of the return on investment, with results determining whether staffing costs may be institutionalized, either through formal designation in the state general fund and/or multiyear hospital budgetary commitments.

1. Assets can include, but are not limited to, health and social services, local philanthropy, municipal general funds, financial institution Community Reinvestment Act loans, community-based organizations, business contributions, faith community and other voluntary organization support, etc.
2. With appropriate consideration of HIPAA protections.

Cost	Year 1	Years 2–3 (annual)	Total
Fund administration, state advisory body, LPHA assessment, OSHPD GIS analysis	$2,000,000	$500,000	**$3,000,000**
Matching fund pool	$6,000,000	$7,000,000	**$20,000,000**
Fund pool administration	$200,000	$150,000	**$500,000**
Statewide evaluation	$3,000,000	$3,500,000	**$10,000,000**
Total	**$11,200,000**	**$11,150,000**	**$33,500,000**

Impact Summary

There is insufficient literature to analyze the likelihood that the proposed community health needs assessments and resultant prevention activities will result in changes in utilization patterns (i.e., emergency department visits, hospitalizations); concomitant reductions in the prevalence of chronic conditions such as asthma, cardiovascular disease, diabetes; and impact on overall costs of health care. Similarly difficult to quantify is the impact that improved health and well-being would have on community members who could more actively contribute to society and realize increases in workplace productivity and decreases in criminal activity and social welfare costs. Over a three-year period, the recommendation would cost $33.5 million across the three components, funding the matching fund pool ($20 million); fund pool administration ($500,000); the combined costs of administration, a state advisory body, local public health agency assessment, and an Office of Statewide Health Planning and Development GIS analysis ($3 million); and evaluation ($10 million).

While the literature is not sufficient to analyze the impact of this recommendation on community-level health outcomes, there are important lessons to be learned from the planning and early stages of several important community-level prevention and population health endeavors in the US and in other countries. The Commission should not be discouraged from pursuing this recommendation, particularly in light of the general gains to be had from stakeholder engagement, cross-sector partnerships, and from policy changes that may be realized from these efforts, and that are vital to any future community-focused programs. Importantly, however, significant attention and resources also should be devoted to designing effective evaluation methodology and data collection before grantees implement their efforts and to allow timely and useful assessments of the impact of community-level improvement activities.

Despite the increased focus and resources directed to community-level health improvement activities in recent years, the literature points out the glaring lack of rigorous evaluation methodology in this area. Most such evaluations rely on process measures (e.g., number of patients receiving a screening test, number of community education events held, or policy changes that resulted from the intervention), or simple pre-post study designs with the individual — not the population — as the unit of analysis and fail to employ appropriate comparison populations or communities. The rare studies with more rigorous evaluation approaches were mostly conducted in other countries whose health systems are too dissimilar to be pertinent to this analysis (e.g., Ethiopia and sub-Saharan Africa). One well-designed US study demonstrated improvements that were not statistically significant. The Social Interventions Research and Evaluation Network, a national collaborative convened to catalyze and strengthen research, and other research groups, have made recommendations about what advances in methodology are needed for evaluations to more effectively assess the impact of community-level health improvement interventions.

(Excerpt from impact assessment conducted by Health Management Associates.)

STRATEGY: STRENGTHEN THE CAPACITY, EFFECTIVENESS, WELL-BEING, AND RETENTION OF THE HEALTH WORKFORCE.

Recommendation 3.10: Engage health plans in regional workforce partnerships and initiatives.

Main Takeaway

The recommendation is likely to have a positive impact on local community workforce resources. The impact would depend on how Medi-Cal plans decide to spend the matching funds and the interests and needs of the health plans and their local communities as they relate to workforce. An allocation of $140 million annually, $1.401 billion over 10 years, would be matched by health plans to generate a total of $2.66 billion for health workforce development through 2030. Without knowing how fund resources would be spent, it is not possible to do a cost-benefit analysis or estimate savings or other impacts over the 10-year period.

(Excerpt from impact assessment conducted by Health Management Associates.)

Context

The Medi-Cal program provides low-income Californians with access to integrated health care, including medical, dental, mental health, substance use treatment services, and long-term care. The state-funded health care services for an estimated 14 million Medi-Cal members in 2016–17, or about one-third of Californians. The managed care plans that now serve 80% or more of these beneficiaries are subject to network adequacy standards, including timely access to care at a reasonable distance. The new network adequacy standards, adopted by California, went into effect on July 1, 2018.

To meet these requirements, the plans that serve Medi-Cal enrollees must face the problem of critical health workforce shortages and ongoing needs for diversity and cultural competence among their providers. The most recent DHCS Compliance Assurance Report of annual network certification found that only 29 of the 59 Medi-Cal managed care plans and only 2 of the 56 county mental health plans passed the revised network adequacy standard, with the others receiving conditional approval.

Medi-Cal managed care plans already recognize the need for investments that will improve their ability to meet current and future health workforce needs. L.A. Care, for example, recently announced a $31 million "Elevating the Safety Net" initiative to provide funding for medical school scholarships, physician recruitment and retention, and medical school loan repayment.[1] Other plans that have also dedicated targeted funding for health workforce include Central California Alliance for Health, Inland Empire Health Plan, Kern Health Systems, and Partnership Health Plan.

Rationale

As plans compete for Medi-Cal contracts, their commitment and capacity to meet the network adequacy standards create a valuable opportunity to leverage new investments in developing the health workforce. Enhanced measurement and reporting on network adequacy standards strengthen our ability to measure impact and enforce compliance. Although health plans already have an incentive to take actions that improve their ability to recruit and retain providers, additional resources and policy levers would magnify their efforts.

1. "Elevating the Safety Net," L.A. Care, n.d., www.lacare.org/providers/provider-central/provider-initiatives/elevating-safety-net.

Proposed Action

This proposal would establish a new matching grant program with dedicated annual funding over the next 10 years. The program would provide annual grants to managed care plans serving the Medi-Cal population, including Medi-Cal managed care plans, county mental health, county Drug Medi-Cal Organized Delivery System (DMC-ODS) pilots, and dental managed care plans. Funding would be allocated on a dollar-for-dollar match basis to support local efforts to meet health workforce needs as determined by the plans delivering care to Medi-Cal beneficiaries.

The funding formula could be weighted to provide enhanced allocations for plans that may have greater needs as reflected by the DHCS-negotiated corrective action plans to meet network adequacy. Local matching funds contributed by health plans would be deemed an administrative cost and incorporated into the rate development process.

This proposal offers a new alignment of program accountability and fiscal resources. As we hold managed care plans responsible for meeting network adequacy, we must also provide them with added tools and resources to do the job.

Plans could use funding for the following: GME; loan repayment; recruitment, retention, and performance incentives; workforce pipeline enhancement; technology/IT practice investment transformation efforts to extend workforce or to drive efficiencies (including tele-care); internships and clinical placements and the capacity of local providers to host; educational pipeline and health pathway program investments; provider wellness and renewal initiatives; regional workforce development data; and infrastructure to implement collective workforce efforts, monitor progress, and adjust to changing needs.

The program would establish state guidance to encourage Medi-Cal plans to invest in programs that increase workforce diversity and cultural competence.

The proposed matching grant programs would provide additional funding and new tools for health plans serving the Medi-Cal population. These tools include (1) a mechanism to pilot scope of practice changes deemed necessary to improve efficiency and quality of care, and (2) the establishment of a local process to influence the health workforce education pipeline in its community.

Estimated Cost

The matching grant program would require a dedicated source of funds from the state and/or other funders. An allocation of $133 million annually, $1.33 billion over 10 years, would be matched by health plans to generate a total of $2.66 billion for health workforce development through 2030. The program could be administered by OSHPD or by DHCS and would require minor start-up costs of less than $1 million to create the processes and infrastructure, and ongoing operating costs of 5% to administer and monitor the grants. The program could be scaled up or down based on available funding.

Costs	Year 1	Years 2–10 (annual)	Total
Administration	$8,000,000	$7,000,000	**$71,000,000**
Funds for matching grants	$133,000,000	$133,000,000	**$1,330,000,000**
Total	**$141,000,000**	**$140,000,000**	**$1,401,000,000**

Impact Summary

The recommendation is likely to positively impact local community workforce resources. The effort would be funded at $140 million per year over 10 years ($133 million per year for program funding and $7–$8 million per year for administration costs). The program would require matching support from participating Medi-Cal plans and would generate a total of $2.66 billion for health workforce development over the period. The impact would depend on how Medi-Cal plans decide to spend the matching funds and the interests and needs of the health plans and their local communities as they relate to workforce. Numerous, disparate initiatives throughout the state, without coordination between health plans, likely would not be the most effective use of resources. Without knowing how fund resources would be spent, it is not possible to do a cost-benefit analysis or estimate savings or other impacts over the 10-year period.

Plans have a range of program and policy levers that could positively impact the composition of California's health care workforce, its training and education, geographic distribution, and a plan's ability to experiment with new delivery system and payment models. For example, studies have demonstrated the effectiveness of workforce pipeline enhancement programs in strengthening students' academic records, improving test scores, and helping minority and disadvantaged students pursue careers in the health professions. Research also shows that health care professionals from underrepresented groups are more likely to serve in poor or rural communities. Initiatives that provide education and training experiences in community-based settings, coupled with students, residents, and faculty working directly with vulnerable populations, may increase the likelihood that participants seek out careers in underserved communities or care for vulnerable populations. For example, approximately 85% of federal loan repayment participants continue to provide care to the underserved up to two years after their obligation is completed, while 55% continue to provide care to the underserved 10 years after having completed their obligations.

(Excerpt from impact assessment conducted by Health Management Associates.)

Appendix A2: Dissenting Opinion and Other Statements

Statement 1

Recommendation Numbers and Names

- 2.4 — Expand medical school enrollment at public institutions for the benefit of medically underserved areas.
- 2.5 — Develop a four-year medical education program at Charles R. Drew University of Medicine and Science.

Dissenting Commissioner: Barbara Ferrer

Summary of Dissent Issue

For both recommendations 2.4 and 2.5, 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 of Medicine and Science 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, Riverside County, and the San Joaquin Valley. Recommendation 2.4 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 Recommendations

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 causes 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 causes, 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.

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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.

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