# Improving Health Care Access in the San Joaquin Valley

A Regional Approach through Collaboration and Innovation

> UNIVERSITY OF CALIFORNIA

April 2018

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#### **EXECUTIVE SUMMARY**

This report was prepared for Assembly Member Adam Gray (District 21) as follow-up to the May 27, 2016 letter to him from UC President Janet Napolitano and UC Merced Chancellor Dorothy Leland (Appendix A). The report provides detailed information and recommendations on a variety of strategies to help improve access to care for residents of the San Joaquin Valley (SJV). As part of this work, the UC Office of the President partnered with the Healthforce Center at UC San Francisco to conduct an assessment of the health workforce needs in the SJV and to establish a baseline from which progress can be measured. This assessment, "Current & Future Health Professions Workforce Needs in the San Joaquin Valley," is included as a supplemental report to this study (a copy of the executive summary is also included as Appendix B).

In addition to UCSF's health workforce assessment, this report provides detailed information regarding existing health professions programs in the SJV – ranging from medical education programs to advanced practice nursing and pre-health professional pipeline programs. It also provides a summary of important health sciences milestones occurring at UC Merced (since 2008) and describes the possible development of a new future branch campus of the UCSF School of Medicine as a major step towards expanding medical student education in the SJV. Finally, the report provides information regarding current telehealth activities in the region; an overview of Federally Qualified Health Centers (FQHCs); and a review of select demonstration projects. A set of key findings and recommendations are included for each area of focus. Collectively, these recommendations identify strategies for expanding health professions educational opportunities and for enhancing health care delivery options that would improve access to care in the SJV.

## I. SUMMARY OF KEY FINDINGS

- (1) The San Joaquin Valley is one of fastest growing, poorest, and least healthy regions of California. California's San Joaquin Valley includes eight counties – Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Although it is among the fastest growing regions in California, the SJV lags much of the state in many socioeconomic and environmental indicators, with some of the poorest air quality and highest rates of poverty and uninsured in the state and nation. More than four million people live in the SJV, with approximately 41% of the population covered by Medi-Cal. Among California's 58 counties, Fresno, Kern, Madera, and Tulare rank 52<sup>nd</sup>, 53<sup>rd</sup>, 49<sup>th</sup>, and 50<sup>th</sup> respectively for health outcomes.
- (2) The SJV has long-standing shortages of physicians and other health care professionals. The recent SJV health workforce assessment conducted by UCSF finds that the region has the lowest ratios of licensed MDs, DOs, NPs, RNs, marriage and family therapists, licensed counselors, and licensed social workers per 100,000 population in California and the second lowest ratios of PAs, CNs, and psychologists per capita. These and other findings described in the UCSF workforce assessment show that action will be needed to ensure that the SJV has sufficient supplies of health professionals for meeting its future needs.

- (3) The two strongest predictors of where physicians will practice are where the physician finishes his/her residency training and where the individual was raised. Data published by the Association of American Medical Colleges (AAMC) in 2015 show that California ranks first in the nation with the highest retention rates of physicians who complete their residency training in the state. Among active physicians who completed residency training in California, nearly 70 percent have remained here to practice. Studies have also shown that medical students are far more likely to practice in communities similar to those where they were raised. In one study, rural background was shown to increase the odds of practice in a rural area by 2.4 times.
- (4) Increasing the number of residency slots in the SJV will be among the most effective strategies for addressing physician shortages in the region. UCSF Fresno has a 40-year history in the region and operates the largest GME program in the area, with approximately 300 residents and fellows (Appendix C for definition) training. A recent review of the practice locations of UCSF Fresno residency program graduates shows that nearly 50% have remained in the region to practice. Studies also show that physicians who train in safety-net settings are more likely to practice in those settings after they complete their residency training, thus making the development of more training programs attractive to some FQHC organizations.
- (5) An assessment of the resource requirements for creating a possible future branch campus of the UCSF School of Medicine (in Fresno) was completed in late fall 2017. Although the location of residency training is recognized as having strong predictive value with respect to a physician's future practice location, a carefully planned strategy to expand medical student education in the region could enhance existing efforts and create a more robust pipeline for the GME programs in the area. UCSF Fresno serves as a valuable clerkship site for UC medical students from UC San Francisco and UC Davis, including students in the San Joaquin Valley Program in Medical Education (SJV PRIME). An assessment of the resources that would be required for this purpose has been completed.
- (6) Advanced practice registered nurses (APRN), particularly nurse practitioners (NPs) play a critical role in expanding access to care in many states. APRNs have advanced education that prepares them to deliver high quality, safe, and effective care in a variety of clinical settings. Increasingly, APRNs, particularly nurse practitioners (NPs), are recognized for their contributions as primary care providers in medically underserved communities. States that permit APRNs to practice at the full extent of their training report improved health outcomes and lower hospitalization rates. Although states regulate the "scope of practice" for health care providers, California is among the states that have the most restricted practice environments for NPs.
- (7) While there is a large pool of well-qualified applicants interested in advanced practice nursing, nursing faculty shortages pose major challenges for increasing enrollment in nursing programs in the SJV and statewide. A Bachelor of Science in Nursing (BSN) prepares students for admission to APRN degree programs. It should be noted, however, that undergraduate programs at both California State University (CSU) Bakersfield and CSU Fresno are academically impacted (i.e., the number of qualified applicants exceeds the number of positions available). To

increase enrollment in APRN programs, additional nursing faculty are needed. Statewide, and particularly in the SJV, recruitment and retention of nursing faculty has proven to be a tremendous challenge given higher salaries for APRNs working in clinical settings.

- (8) Model health professions pipeline programs exist in the region, yet face persistent challenges in securing stable funding. Most existing health professional pipeline programs in the SJV are funded by multiple sources, including local school districts, state agencies, and private organizations. These programs often rely on short-term grant funding to sustain their budgets, which creates instability for staff and places the programs at intermittent financial risk. Given the record of success of model health professions pipeline programs in improving competitive eligibility for admission to health professional programs, enhancement of existing programs will be needed to sustain a successful health professions pathway.
- (9) Investment in regional infrastructure to expand telehealth services could improve access to care. Telehealth programs are far more likely to thrive in geographic regions with a major telehealth network hub. While start-up and operating costs for implementing telehealth are significant, strategic expansion of telehealth services would help address regional shortages of providers and reduce existing geographic barriers. Investing in centralized, regional infrastructure and pursuing efforts to improve reimbursement would also reduce barriers to more effective utilization throughout the SJV.
- II. SUMMARY OF RECOMMENDATIONS
- (1) Fund the work necessary to develop a detailed GME expansion plan and timeline for implementation across the eight-county SJV region. This plan should build upon existing GME programs and resources for teaching and should include: identification of sponsoring institution(s), affiliated training sites, size and scope of medical/surgical specialty and subspecialty training programs, estimated number of trainees by year (by program), and in total. This effort should also include a rigorous assessment of opportunities to pursue new federal funding through mechanisms available for GME naïve institutions. It should also include identification and implementation of new GME training models that would enable residency training in FQHC or other community-based ambulatory care settings to be economically feasible and that would help Teaching Health Centers (THCs) overcome barriers to accreditation.
- (2) Assess the resources required to increase state support for graduate-level nursing programs operated by UC and/or CSU, with a clear and explicit focus on preparation of graduate-trained nurses who will be qualified to fill vacant faculty positions in the SJV (and statewide). Preparation, recruitment, and retention of nursing school faculty is urgently needed in order to maintain existing educational programs and to plan for targeted enrollment increases for programs that educate and train NPs and other APRNs. As part of this effort, there is also a need to identify effective mechanisms and the resources that would be required to provide incentives for nursing faculty to teach in the SJV. The existing Song-Brown program managed by the Office of Statewide Health Planning and Development (OSHPD) could offer a vehicle for this purpose.

- (3) Reassess the interest and feasibility of pursuing future legislation regarding expanded scope of practice for APRNs. Although recent efforts in California have been largely unsuccessful, reassessing the feasibility of expanding scope of practice for nurse practitioners to enable them to practice at the top of their license could be a means for expanding access to primary care statewide and could be of particular benefit in medically underserved regions such as the SJV.
- (4) Convene a higher education taskforce of regional leaders and other stakeholders to develop a strategic plan to create and fund programs that will successfully prepare undergraduate students from the SJV to be competitively eligible for admission to a health professional school. Funding commitments for new or existing model programs, whether at the undergraduate or K-12 levels, should be improved and should be made for a minimum five-year period to provide financial stability, contingent upon reporting of outcomes and demonstrated success.
- (5) Identify and provide the resources necessary to develop UCSF Fresno as the major telehealth network hub/regional site for the San Joaquin Valley. At present, the SJV lacks the presence of a major medical institution with the infrastructure capacity to serve as a telehealth regional network hub. As the largest trainer of physicians in the SJV, UCSF Fresno in partnership with Community Regional Medical Center could serve as major providers of subspecialty care in the region. If successfully established as a major regional hub/central site, expansion of telehealth services could more readily occur through new partnerships with hospitals and clinics throughout the region. Resources that are in place at UC Davis offer a useful example of how this effort might be advanced.
- (6) Assess the feasibility of introducing legislation that would require all payers to make their telehealth policies publicly available. While past legislative efforts to improve reimbursement of telehealth services have not been fully successful, it is important to note that there is a general lack of adequate, publicly available information regarding the telehealth policies of private payers. This lack of transparency creates added challenges and misunderstandings among providers and patients regarding the benefits of providing access to telehealth services. Within this context, renewed consideration should also be given to the public benefits of improving reimbursement for telehealth services.
- (7) Encourage SJV leaders to more fully explore opportunities to develop public-private partnerships with foundations and regional business entities to fund the development and evaluation of innovative models that improve access to care and expand the health workforce in the SJV region. Given the projected health workforce shortages and persistent maldistribution of providers in the San Joaquin Valley, there is a compelling rationale for growth of health professions educational opportunities and improvements in health care delivery that is well-planned and aligned with community needs. To meet these needs, new public and private partnerships, together with a commitment to collaboration and innovation, will be required.

## **INTRODUCTION**

This report was prepared for Assembly Member Adam Gray (District 21), by the University of California Office of the President, in response to his request that the University of California (UC) conduct a study on potential strategies for improving access to health care in the San Joaquin Valley (SJV). The report was prepared in response to a May 27, 2016 letter to him from UC President Janet Napolitano and UC Merced Chancellor Dorothy Leland (Appendix A). The report identifies short- and long-term opportunities to improve health outcomes in the SJV's eight counties – Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. It also summarizes major findings and makes recommendations that the state might consider with respect to expanding health professions educational opportunities and pursuing health care delivery improvements as startups to improve health care access in the region.

This report is organized in five major sections, as follows:

- Section I provides a brief overview of findings that are described in detail in the June 2017 report, "Current & Future Health Professions Workforce Needs in the San Joaquin Valley."
- Section II provides detailed information for a number of health professions education and training programs that are located in the San Joaquin Valley. The section describes the substantial contributions of the region's graduate medical education (GME) programs and the predictive value of the location of residency training as a strong factor in the decisions of physicians about their future practice locations. This section also summarizes the work already underway by the UC Davis School of Medicine (SOM) and UCSF Fresno – in partnership with UC Merced – in working to advance the region's San Joaquin Valley Program in Medical Education (SJV PRIME); and finally, it reviews and considers opportunities for expansion of GME, advanced practice registered nurse (APRN) programs, and health profession pipeline programs in the region.
- Section III provides a timeline of steps taken and activities developed toward building the
  infrastructure for medical education at UC Merced and their commitment to improving access
  to health care and addressing health disparities in the SJV. It also includes information on the
  estimated resource requirements for launching a new branch campus of the UCSF School of
  Medicine in the SJV.
- Section IV analyzes the feasibility of: expanding participation of Federally Qualified Health Centers (FQHCs) in GME; increasing telehealth services throughout the SJV; and assessing opportunities for future demonstration projects that could encourage development of innovative programs that would help increase access to health care.
- Section V offers brief concluding comments regarding future opportunities to create new public and private partnerships as part of the overall strategies for improving outcomes and better meeting the health needs of the residents of the SJV.

## I. OVERVIEW OF THE HEALTH CARE WORKFORCE IN THE SAN JOAQUIN VALLEY

The San Joaquin Valley (SJV) is one of fastest growing, poorest, and least healthy regions of California. The SJV includes eight counties – Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Although it is among the fastest growing regions in California, the SJV lags much of the state in many socioeconomic and environmental indicators, with some of the poorest air quality and highest rates of poverty and uninsured in the state and nation. More than four million people live in the SJV, with approximately 41% of the population covered by Medi-Cal. Among California's 58 counties, Fresno, Kern, Madera, and Tulare rank as 52<sup>nd</sup>, 53<sup>rd</sup>, 49<sup>th</sup>, and 50<sup>th</sup> respectively for health outcomes.

As part of this overall report and study, the UC Office of the President partnered with the Healthforce Center at UC San Francisco to conduct an assessment of the health workforce needs in the SJV and to establish a baseline from which progress can be measured. This assessment, *"Current & Future Health Professions Workforce Needs in the San Joaquin Valley,"* is included as a supplemental report to this study (a copy of the executive summary is also included as Appendix B).

Access to health services in underserved communities is dependent upon an adequate supply of physicians and advanced practice professionals. The SJV has historically suffered from long-standing shortages of health care professionals, which is a contributing factor to the poorer health outcomes in the region. The workforce assessment conducted by UCSF, and completed in June 2017, finds that the SJV has a significantly lower supply of providers in most of the health professions that were examined compared to the state supply, and that per capita supply varies widely across the counties in the region. For example, in 2015 the SJV had 138 active physicians per 100,000 residents, which is well below the California average of 237 active physicians per 100,000 residents. Relative to the California average, the SJV is currently facing a shortage of approximately 4,100 physicians. The report also finds that large percentages of physicians and psychologists are likely to retire within the next 10 years, creating further urgency for developing new plans for meeting future needs. These and other findings described in UCSF's report show that action will be needed to ensure that the SJV has sufficient resources and supplies of health professionals for meeting its future needs.

# II. HEALTH PROFESSIONS EDUCATION AND TRAINING

# UNDERGRADUATE MEDICAL EDUCATION

## I. OVERVIEW

Although medical student enrollment growth at the University of California (UC) has been very limited over the last 40 years, UC already has a large medical education presence in the San Joaquin Valley (SJV) through UCSF Fresno. UCSF Fresno has a 40-year history in the region and operates the largest GME program in the area (with approximately 300 residents and fellows training). Nearly 50% of physicians completing residency training at UCSF Fresno have remained in the region to practice. It is also the clerkship site for UC medical students from UCSF and UC Davis, including UC students in the SJV Program in Medical Education (PRIME).

From its inception, the leadership and faculty of the University of California Merced have recognized the need to join regional efforts to increase access to health services and to help improve health outcomes in the Central Valley. The location of the campus and its designation by the National Institutes of Health (NIH) as a Center of Excellence on Health Disparities will enable UC Merced to make substantial ongoing contributions toward expanding access to health sciences education and to offer the cultural context necessary to help reduce health disparities in the region and to align this work with the education, research and public service missions of the University of California.

## II. SAN JOAQUIN VALLEY PROGRAM IN MEDICAL EDUCATION

As a way for UC Merced to begin to build partnerships with existing UC medical schools and facilitate its involvement with academic medicine, UC Merced partnered with the UC Davis (UCD) School of Medicine (SOM) to help develop a new medical education program focusing on the health needs of the region. The SJV PRIME program was launched in 2011 by the UCD SOM, in partnership with UC San Francisco (UCSF) Fresno and UC Merced, to recruit and prepare students for future careers in medicine in the SJV. The program was established under the auspices of the UCD SOM for purposes of accreditation and degree-granting authority, giving UCD the primary responsibility for governance, meeting accreditation standards, and management of admissions, curriculum, financial aid and other purposes.

SJV PRIME students complete their basic sciences/pre-clinical education at UCD; then complete most of their required third-year core clerkships at UCSF Fresno, with options for selecting the amount of time spent in the fourth year at UCSF Fresno or UC Davis. Efforts are actively underway to expand educational opportunities for students to learn and work in the SJV, including increased time across the educational continuum.

When SJV PRIME enrolled its first class of five students in 2011, state funding for enrollment had not yet been provided to support the program. In March 2016, however, Assembly Bill 133, the budget trailer bill that amended the Budget Act of 2015, was approved and signed by the Governor. This action, led by Assembly Member Adam Gray, provides \$1.855 million annually to expand total enrollment in the SJV PRIME program to 48 students (12 students per year across the four-year curriculum). This funding is an

extremely valuable and essential resource for providing the ongoing funding for faculty and staff, as well as for providing some modest support for programmatic needs requiring coordination among sites.

In 2016, the UC Office of the President convened a workgroup to develop a plan for expanding enrollment and enhancing the quality of SJV PRIME. The workgroup participants included senior UC leaders from the Office of the President, Davis, Merced, UCSF, and UCSF Fresno who met several times between March and June to redefine the roles and responsibilities of academic partners; develop principles guiding the allocation of state resources for the program; identify resource needs for expanding the program and addressing program challenges; and discuss ways for partnering campuses to work with UC Merced to expand learning opportunities for students in the SJV PRIME program. For example, UC Merced faculty will continue to work to identify and provide research opportunities for SJV PRIME students through the HSRI, particularly in areas such as community health and health disparities, thus exposing learners to research that addresses key health challenges in the region. Other new roles for UC Merced that have been discussed include increased outreach and course offerings for pre-medical students as well as expanded master's degree opportunities for SJV PRIME students who wish to do a fifth year. The outcome of these meetings led to a renewed Memorandum of Understanding (MOU) between the academic partners in August 2016 (Appendix E).

Since that time, and by agreement of the Deans of the UC Schools of Medicine at Davis and San Francisco, responsibility for accreditation, degree-granting authority, finance, and other responsibilities associated with management and oversight of the SJV PRIME program will be transitioned from UCD to UCSF during the 2018-19 academic year. The rationale for this decision is to align primary campus responsibilities for both undergraduate and graduate medical education, which will help align academic calendars, curriculum, and overall opportunities for integration and collaboration.

Funding will continue to be allocated according to the principles agreed upon in the MOU between the partner campuses who will work together to facilitate the transition administratively, programmatically, and academically for students enrolled in the program during this period. The proposed transition timeline will enable partnering campuses to communicate with students, faculty, the Liaison Committee on Medical Education (also referred to as the LCME or accreditation body for medical schools that grant the Doctor of Medicine (i.e., MD) degree), and others about this opportunity to collaborate to expand medical education in the region.

#### **GRADUATE MEDICAL EDUCATION**

#### I. OVERVIEW

Graduate medical education (GME), or residency training, is the second phase of the educational process that prepares doctors for independent practice in a recognized medical specialty (e.g., family medicine or pediatrics) or surgical specialty (e.g., general surgery or neurosurgery). Following a four-year medical school education, resident physicians typically spend three to seven years in GME training, depending upon the program and specialty. This means it can take 11 years or more beyond high school to educate physicians before they enter practice. Throughout their training, residents work under faculty physicians, participating in supervised patient care and gaining the necessary clinical skills for independent medical practice. This supervised training primarily takes place in teaching hospitals. In recent years, however, there have been efforts to increase the number of programs in community-based settings, such as Federally Qualified Health Centers (FQHCs).

The Accreditation Council for Graduate Medical Education (ACGME) is responsible for the accreditation of medical residency programs throughout the U.S. There are 881 ACGME-accredited residency programs in California that train over 11,000 medical residents and fellows (see Appendix C for glossary of commonly used terms). These programs are managed by sponsoring institutions, which are the organizations responsible for the academic quality and financial well-being of residency programs. Some of the major sponsors of GME in California include: public (i.e., UC) and private medical schools and medical centers, Kaiser Permanente, Children's Hospitals,



Figure 1: Medical Residents in California, 2016-2017. Non-UC Sponsors of GME in California, include, but are not limited to, the following: Private and public medical schools and medical centers; Kaiser Permanente; Veterans Affairs; and Children's Hospitals

and the Department of Veterans Affairs. Roughly, 5,000 residents are enrolled in UC-sponsored residency and affiliated family medicine programs – or nearly half of California's total (Figure 1).

#### Graduate Medical Education Financing

Federal funding has been the primary source of revenue for teaching hospitals to support GME. Since 1965, the Centers for Medicare and Medicaid Services (CMS) have provided funds for GME through the Medicare program. While the mechanisms and formulas utilized for determining the flow of funds is

complex, Medicare GME funding recognizes the significant direct and indirect costs of GME that are incurred by teaching hospitals. The average estimated cost to train a resident is roughly \$150,000 per resident, per year. Approximately, \$10 billion in Medicare funding is annually disbursed to support GME across the nation. These payments support the direct costs of educating physicians (e.g., resident and faculty salaries and benefits and certain administrative costs); and indirect costs that are associated with providing care in teaching hospitals (e.g., the use of additional testing and advanced technologies from which residents learn). These payments take into consideration that teaching hospitals often treat a more complex mix of patients.

In 1997, Congress capped the number of residency slots for which hospitals could receive Medicare funding. This cap was set at each hospital's count of residents during the period ending on or before December 31, 1996. Existing programs desiring to expand GME are thus left to fill the gap and fully fund new residency positions without Medicare funding.

# Return on Investment for California

Within this context, it is important to emphasize that the two strongest predictors of where physicians will ultimately practice are where the physician finishes his/her training (residency or fellowship) and where the individual "comes from." Notwithstanding the predictive value of GME with respect to a physician's subsequent choice of practice location, California's investment in GME has been extremely limited given the size of its population and the benefits of its training programs. In fact, California ranks first in the nation with the highest GME retention rates, with nearly 70% of resident physicians remaining in the state to practice.

While there have been few major investments in California GME programs over many years, several recent actions in California offer new opportunities for growth. For example, California's 2017-18 budget (signed by the Governor on June 27, 2017) includes the first \$33.3 million of an initially proposed \$100 million augmentation for health care workforce programs administered by the Office of Statewide Planning and Development (OSHPD). This funding will be available effective July 1, 2017 and will support primary care residencies as follows:

- \$18.7 million to existing residency programs
- \$5.7 million to Teaching Health Centers
- \$3.3 million to expand existing primary care residency programs
- \$3.3 million to support new primary care residency programs
- Up to \$2 million to support administration

In addition to this action, California voters have also recognized the importance of investing new resources in graduate medical education as part of a ballot initiative passed in November 2016. This measure, referred to as Proposition 56: California Healthcare, Research and Prevention Tobacco Tax Act of 2016, increases the cigarette tax in the state by \$2.00 per pack, effective April 1, 2017, with equivalent increases on other tobacco products and electronic cigarettes containing nicotine. Proposition 56 also specifies that funding in the amount of \$40 million dollars annually shall be used to provide funding to the University of California to address statewide physician shortages and to provide

dedicated funding to "...sustain, retain and expand graduate medical education programs to achieve the goal of increasing the number of primary care and emergency physicians in the State of California based on demonstrated workforce needs and priorities." (See Appendix D for pertinent GME funding excerpt from Proposition 56).

It is important to note that at the time this report was finalized, plans to allocate Proposition 56 funding for GME to UC were unclear, thus creating a level of ambiguity about when or if these funds would be made available to support future growth in GME. Efforts to address this matter are underway.

# II. RESIDENCY TRAINING IN THE SAN JOAQUIN VALLEY

In 2016, there were ten institutions that sponsored ACGME-accredited residency programs in the eight counties of the San Joaquin Valley. A total of 625 residency positions are currently approved by the ACGME. Most residents in training are participating in programs located in either Fresno or Kern County, with UCSF Fresno training approximately half of all SJV resident physicians. Across specialties, the majority of residents are training in family medicine and internal medicine programs.

Table 1 - Residents in ACGME Programs in the San Joaquin Valley (2016-2017)					
Sponsoring Institution	ACGME Programs	Total Residents 2016-2017			
Clinica Sierra Vista- Bakersfield*	1	18			
Fresno Healthy Communities Access Partners*	1	8			
Kaweah Delta Health Care District	5	68			
Kern Medical Center	7	95			
Loma Linda Health Education Consortium	1	14			
Mercy Medical Center	1	26			
San Joaquin General Hospital	3	67			
UCSF Fresno Medical Education Program	17	284			
Valley Consortium for Medical Education *	2	45			
Total	37	625			

Source: ACGME Accreditation Data System (ADS)

\* Teaching Health Centers

# Teaching Health Centers

Among the institutions that sponsor GME in the SJV, three are Teaching Health Centers (THCs), which primarily train residents in ambulatory community-based settings. As part of efforts to increase the number of primary care physicians practicing in medically underserved areas, the Affordable Care Act established the Teaching Health Center GME program. Through this program, the federal government provides grants to underwrite the costs of training primary care residents in FQHCs, FQHC Look-Alikes, and other community clinics (additional information about THCs is provided in the FQHC section of the report).



Figure 2: Graduate Medical Education Sponsorship Geographic Distribution

## Newly Accredited Institutions

Several new institutions within the region are seeking (or have already received) accreditation to open new GME programs. Adventist Medical Center-Hanford, St. Agnes Medical Center, and Valley Health Team Incorporated are among the newly accredited sponsoring institutions that do not yet have residents enrolled. Valley Children's Healthcare, the region's only Children's Hospital, is also a newly accredited institution, having recruited its first class of residents in 2017. According to the ACGME, there are 39 approved resident positions for the Valley Children's Healthcare three-year pediatrics program (13 residents per year).

# GME Naïve Hospitals

There are a number of hospitals in the SJV that do not participate in residency training. Hospitals that have never participated in training residents are often referred to as "GME naïve," which means that CMS will provide Medicare funding for new GME positions in these hospitals, which then have five years to establish the maximum number of residency positions allowed under CMS policy. This maximum number is also referred to as "the cap." For these reasons, GME naïve hospitals are at an advantage when developing new residency programs. While there are a number of hospitals in the SJV that are GME naïve, not all may be able to establish new programs (i.e., there are certain eligibility criteria, such as the total number of hospital beds and total share of Medicare patients, which also must be satisfied).

## III. KEY FINDINGS

- (1) The two strongest predictors of where physicians will ultimately practice are where the physician finishes his/her training (residency or fellowship) and where the individual was raised. Data published by the Association of American Medical Colleges (AAMC) in 2015 show that California ranks first in the nation with the highest retention rates of physicians who complete their residency training in the state. Among active physicians who completed residency training in California, nearly 70 percent have remained here to practice. Studies have also shown that medical students are far more likely to practice in communities similar to those where they were raised. In one study, rural background was shown to increase the odds of practice in a rural area by 2.4 times. Increasing enrollment and/or creating new residency programs in the SJV will thus be among the most effective strategies for addressing regional physician shortages and improving access to physician services.
- (2) The most significant barrier to GME expansion is securing adequate funding for both direct and indirect costs. It should be emphasized that funding for resident salary and benefits alone is not sufficient for the development of new GME programs or expansion of current programs. GME programs must also contribute to faculty salaries and benefits and other infrastructure needs in order to meet accreditation requirements prior to recruiting residents.
- (3) Increasing the number of GME positions in existing programs is currently limited by the CMS cap, availability of sufficient numbers of faculty and adequate space for teaching, and other resources required for accreditation by the ACGME. Expansion of UC-sponsored GME programs

in the SJV would require additional funding from the state (or from hospital resources) for resident salaries and other direct and indirect costs given that there is already a maximum number of residency positions at these sites that are supported by CMS. It should be noted, however, that health systems are often reluctant to provide the necessary funds to support expansion given the significant resources that are required to support GME.

(4) There are a few ways to secure the funding necessary to increase or develop new GME programs or positions. Development of new GME programs could be pursued in FQHCs associated with GME naïve hospitals. Although this funding is not available for institutions that have established residency programs, CMS provides funding for new residency positions in GME naïve FQHCs and hospitals. As part of this process, a "cap" on the number of residency positions must be developed over a five-year period.

For institutions with one or more established programs, state funding for GME expansion could be pursued through OSHPD. As previously described, the 2017-2018 California state budget includes the \$33.3 million for OSHPD health care workforce programs (primarily to support primary care residency programs). This funding will be available effective July 1, 2017.

Access to funds generated through Proposition 56 could also potentially be a valuable new resource for establishing new GME programs in areas of unmet need, provided that these funds are made available for this purpose.

(5) The conflicts between the educational and service missions create barriers to successful expansion of Teaching Health Center (THC) programs. The California Health Care Foundation (CHCF) found the loss of productivity associated with teaching to be a significant challenge as health center revenue is primarily based on patient visits, while managing residency programs and maintaining accreditation requires faculty to devote a significant amount of time to teaching and other nonclinical activities. Resources required for faculty recruitment and to meet standards for accreditation also requires a substantial investment of resources, which makes developing new residency programs financially challenging for many FQHCs in the SJV (also noted in FQHC section).

## IV. RECOMMENDATIONS

- (1) Fund the work necessary to develop a detailed GME expansion plan and timeline for implementation across the eight-county SJV region. This plan should build upon existing programs and resources for teaching and should include identification of sponsoring institution(s), affiliated training sites, medical/surgical specialties, subspecialty programs, estimated number of trainees by year (by program), and in total. This effort should include a thorough assessment of opportunities to pursue new federal funding through mechanisms currently available for GME naïve institutions.
  - As part of this effort, health system leaders and regional GME Designated Institutional Officials (DIOs) should be convened to discuss opportunities to assess the possibility of

developing one or more new regional consortia as potential new GME sponsoring institutions (Appendix C).

- The planning activities described above could likely be completed within 9-12 months, with a one-time budget allocation of \$250,000.
- (2) Secure resources to appoint and convene a task force that includes representatives from UC Merced, UCSF Fresno, Teaching Health Centers, the Central Valley Health Network, and other stakeholders to explore ways to develop new GME training models that make residency training in FQHC settings economically feasible and to help THCs overcome barriers to accreditation. The task force should also develop a plan for launching an educational campaign for leaders from SJV hospitals and FQHCs to facilitate greater collaboration between hospitals and FQHCs in developing new residency programs (also noted in FQHC section).



## **ADVANCED PRACTICE NURSING PROGRAMS**

# I. OVERVIEW

Advanced practice registered nurses (APRNs) are integral to the nation's health care workforce. APRNs have advanced education and training that prepares them to deliver high quality, safe, and effective care in a variety of clinical settings. Increasingly, APRNs are recognized for their roles and contributions as primary care providers in medically underserved communities. Recent literature has also substantiated that NPs not only serve in medically underserved areas, but also provide care for a disproportionate number of Medi-Cal patients. These nurses are typically trained at the master's degree level. In recent years, however, total enrollment in Doctor of Nursing Practice (DNP) programs has steadily increased. The development of new DNP programs has generally been in response to national calls by nursing schools affiliated with the American Association of Colleges of Nursing (AACN) to change the level of preparation necessary for advanced nursing practice from the master's degree to the doctorate level by 2015.

Notwithstanding this transition, not all master's degree and DNP programs prepare students for specific APRN roles. Nurses holding these advanced degrees can also choose to participate in a certificate program to prepare them as advanced practice nurses. Practicing APRNs must have completed an accredited graduate-level program, passed a national certification examination, and obtained a state license to practice in one of the following recognized roles:

- Nurse Practitioners (NPs) are the most common type of APRN, with over 234,000 licensed in the U.S. NPs practice in a variety of specialties and are trained to provide initial, ongoing, and comprehensive care. Similar to Certified Nurse-Midwives, all states recognize prescriptive authority for nurse practitioners, yet the scope of practice authority for NPs is regulated at the state level and varies substantially across the U.S.
- Clinical Nurse Specialists (CNSs) fill roles that are often defined by population, setting, or medical subspecialty. They provide diagnosis, treatment, disease management, health promotion, and preventative health care services. More than half of all CNS work in hospital settings and are responsible for more than one department.
- **Certified Nurse-Midwives (CNMs)** provide a range of women's health care services including family planning, gynecologic care, prenatal and postpartum care. While most known for attending births, CNMs often identify primary care as a primary responsibility and they are defined as primary care providers under federal law. All states recognize prescriptive authority for nurse-midwives, yet the scope of practice for CNMs varies considerably from state to state.
- Certified Registered Nurse Anesthetists (CRNAs) administer anesthetics to patients undergoing surgical procedures in a variety of clinical settings. According to the American Association of Nurse Anesthetists, CRNAs are the primary providers of anesthesia care in rural health care settings in the U.S. By 2022, CRNA programs will be required to transition their master's degree

programs to confer a practice-oriented doctorate degree in order for their programs to remain accredited.

II. ADVANCED PRACTICE NURSING EDUCATION IN THE SAN JOAQUIN VALLEY

There are currently nine master's degree level advanced practice nursing programs in the SJV, offered by five educational institutions. For more information, see below.

Table 2 - Advanced Practice Nursing Programs in the San Joaquin Valley						
Educational Institutions	Program Type	Degree Type				
California State University, Bakersfield	Family Nurse Practitioner	MSN				
	Adult-Gerontology Clinical Nurse Specialist	MSN				
California State University.	Pediatric Clinical Nurse Specialist	MSN				
Fresno	Family Nurse Practitioner	MSN				
	Pediatric Nurse Practitioner	MSN				
	Psychiatric Mental Health Practitioner	Post-Master's Certificate				
California State University, Sonoma	Family Nurse Practitioner	MSN/ Post-Master's Certificate				
*Fresno Pacific University	Family Nurse Practitioner	MSN				
*National University	Certified Registered Nurse Anesthetist	MSN				

\* Private Institution

While the majority of the programs in the region focus on NP preparation, there are CRNA and CNS programs available. At the time this report was completed, there were no CNM programs in the SJV and only three in the entire state of California. Students in the area also have the opportunity to pursue a DNP degree. California State University (CSU) Fresno, along with San Jose State University, currently make up the CSU Northern California Consortium that administers a DNP program. While this is a practice-oriented doctorate, this degree program does not specifically prepare students for one of the four APRN roles. The following provides a brief description of the educational institutions and their respective advanced degree programs within the SJV.

# California State University, Bakersfield

CSU Bakersfield re-opened its family nurse practitioner (FNP) master's degree program in Fall 2014 after the decision to suspend admissions due to state budget cuts. This is a two-year full-time program with cohort sizes ranging from 15-17 students per class.

# California State University, Fresno

The School of Nursing at CSU Fresno has been educating nurses since the late 1950s and is one of the largest educators of undergraduate and graduate nursing within the region. Currently, CSU Fresno offers five APRN programs, including two CNS and three NP programs. Students in four of the five programs earn a Master of Science in Nursing (MSN) degree. One program is a psychiatric mental health nurse practitioner certificate program, which requires students to have an MSN prior to admission.

CSU Fresno and San Jose State University joined together to create the CSU Northern California Consortium that administers a Doctor of Nursing Practice program. This is one of two DNP consortia formed by CSU. Both consortia rely heavily on online instruction and allow students to work full-time. It is important to note that the Legislature authorized CSU to offer the DNP degree on a pilot basis in 2010 and without further legislation this pilot will sunset in 2018. As of February 2017, Assembly Bill 422 had been introduced to repeal the sunset and authorize CSU to establish DNP degree programs. At the time this report was completed, Assembly Bill 422 had not yet secured passage by the Legislature.

# California State University, Sonoma

Sonoma State University offers an FNP master's degree program at various locations within its geographic service areas, which include four cities in the San Joaquin Valley. The program is currently offered in Merced, Modesto, Stockton, and Turlock.

# California State University, Stanislaus

While CSU Stanislaus currently offers master's degree nursing programs, none of these programs are specific to APRN preparation. Pending approval from the Board of Registered Nursing, CSU Stanislaus plans to establish an FNP graduate program. Classes could begin as early as January of 2018.

# Fresno Pacific University

Fresno Pacific University is a private institution with five campuses located throughout the San Joaquin Valley. They have recently opened an FNP master's degree program, which is offered at their North Fresno Campus.

# National University – Fresno Campus

National University is a private institution located in multiple cities across the state, including Fresno. National University currently offers the only certified registered nurse anesthetist master's degree program in the region. As previously noted, all CRNA programs will need to have transitioned from master's level to doctoral level programs by 2022 in order to remain accredited.



Figure 3: Geographic Distribution of Advanced Practice Registered Nursing Programs

## III. UNIVERSITY OF CALIFORNIA NURSING EDUCATION PROGRAMS

UC operates four Schools of Nursing (SONs), located at its campuses in Davis, Irvine, Los Angeles, and San Francisco. Collectively, these schools enroll approximately 1,300 students annually. UC nursing schools prepare nurses and scholars to lead and transform nursing care in complex, diverse, and evolving health care environments through academic excellence, innovative research and teaching, clinical practice, strong community partnerships, and global initiatives. The UC SONs differ in history and developmental stage, with two long-established schools at UC San Francisco (UCSF) and UC Los Angeles (UCLA), and two newer schools at UC Davis (UCD) and UC Irvine (UCI). They also differ in the mix and size of both undergraduate and graduate programs.

UC nursing schools offer a variety of educational programs, including undergraduate (BS) and master's (Master's Entry Program in Nursing/Master's Entry in Clinical Nursing) programs to prepare registered nurses for clinical practice, master's degree programs for advanced practice nurses and nursing leadership, and PhD programs to prepare nurse researchers and educators. UCLA and UCI SONs are in the process of gaining approval or planning for offering the DNP degree to prepare nurses for clinical and administrative leadership. UCSF's DNP program will begin enrolling students in spring 2018. UCD has a long history of preparing NPs for the Central Valley, with over 1,800 alumni from the certificate program, the majority of whom work in the region. Their Master of Science program for NPs now has clinical sites in the area and recruits students from the SJV area.

In addition to preparing new registered nurses, UC SONs prepare a large proportion of California's nursing faculty and advanced practice nurses, and thus contribute substantially to California's capacity to prepare the state's future generation of nurse leaders and faculty.

- IV. KEY FINDINGS
- (1) Faculty shortages pose major statewide challenges for nursing graduate degree programs and create major barriers for programs in the SJV. Assuring adequate RN, APRN, and nursing faculty supply in California will rely upon maintaining current nursing enrollments and successfully replacing retiring faculty across the UC, CSU, and California Community College systems. The limited number of faculty inhibits the ability of many nursing programs to increase enrollment. Existing programs offered by CSU have struggled financially and with respect to faculty recruitment and retention. Nursing programs also face significant market competition from employers in the health care and other industries that offer graduate level nurses much higher salaries than nursing faculty. As the salary gap between faculty and clinical nurse practitioners grows, it has become increasingly difficult to recruit and retain faculty to fill vacant positions.
- (2) Several factors could lead to a decrease in the number of advanced degree nursing programs in the region in the near future. The CSU DNP degree pilot program could end in 2018 if the sunset date authorizing CSU to grant this degree is not extended. It should be noted that at the time this report was completed, California Assembly Bill 422 had not yet secured passage. In the event that this measure is unsuccessful, CSU would be prohibited from enrolling any new

students in the pilot program after July 1, 2018. National University also must transition its program to award doctoral degrees by 2022 in order to remain accredited. If this transition does not occur successfully, there would no longer be a CRNA program in the SJV. If either or both of these programs were to close, this would further limit opportunities available for students within the region.

- (3) There is a large pool of qualified undergraduate nursing students in the San Joaquin Valley. All three CSUs (Bakersfield, Fresno, and Stanislaus) in the region offer a Bachelor of Science in Nursing (BSN), which also prepares students for admission to APRN degree programs. During the 2015-2016 academic year, 345 bachelor's degrees in nursing were granted from the three CSUs in the SJV. Undergraduate programs at both CSU Bakersfield and Fresno are impacted meaning that the number of fully qualified applicants exceeds the number of positions available in program(s). Fresno Pacific University also awards the BSN degree. APRN programs in the SJV are well-positioned to recruit students enrolled in these BSN programs.
- (4) There is some state funding available for RN and FNP programs that is administered by the Office of Statewide Health Planning and Development (OSHPD) through the Song-Brown program. The total annual funding through this program is a little more than \$7 million, of which FNP/PA (physician assistant) funding is approximately \$1.35 million and RN funding is \$2.725 million. Additional information regarding this funding is available at: <u>www.oshpd.ca.gov</u>.
- (5) States that permit APRNs to practice at the full extent of their training report improved health outcomes and lower hospitalization rates. In 2010, the Institute of Medicine issued its report, *The Future of Nursing, Leading Change, Advancing Health.* This report advised that nurses play a critical role in responding to demands for improved access to care. The report also criticized state laws that prevent APRNs, including NPs, from practicing at the full extent of their training. While an increasing number of states have taken steps to expand scope of practice to "full practice authority" for NPs, legislative efforts in California have been largely unsuccessful.

In a paper issued by the National Governor's Association (NGA) in December 2012, the NGA reported that:

"...Sixteen states and the District of Columbia allow NPs to practice completely independently of a physician and to the full extent of their training (i.e., diagnosing, treating, and referring patients as well as prescribing medications for patients); the remaining 34 states require NPs to have some level of involvement with a physician, but the degree and type of involvement varies considerably by state. To better meet the nation's current and growing need for primary care providers, states may want to consider easing their scope of practice restrictions and modifying their reimbursement policies to encourage greater NP involvement in the provision of primary care."

Full or independent practice authority means that state practice and licensure laws provide for nurse practitioners to evaluate patients, diagnose, order and interpret diagnostic tests; to

initiate and manage treatments (including prescribing medications); and to bill insurers and Medi-Cal under their own provider identifier. This is the model recommended by the IOM and National Council of State Boards of Nursing. California, however, is designated as having "restricted practice authority," meaning that current laws restrict the ability of a nurse practitioner to engage in at least one element of NP practice. This designation places California among those states with the most restricted practice environments for NPs.

#### IV. RECOMMENDATIONS

- (1) Increase state support for nursing programs operated by UC and/or CSU to support faculty recruitment and retention and to enable these programs to consider increasing enrollment. Nursing programs in colleges and universities have traditionally relied on tuition-based income and do not have a strong faculty practice revenue base. Several comparator public nursing schools in the U.S. (e.g. University of Michigan and University of Virginia) receive state, campus, or medical center support to bridge the structural gap between revenues generated and costs associated with clinical nursing education.
- (2) Identify mechanisms to provide incentives for nursing faculty to teach in the SJV. Addressing compensation issues will strengthen the ability to recruit and retain nursing faculty. Nursing education programs in the SJV could benefit by hiring APRNs as clinical instructors. Their engagement in practice at the medical center and ambulatory sites, including Federally Qualified Health Centers (FQHCs), would contribute to both educational quality and better student mentorship. Such efforts could potentially be managed and funded with additional resources to support a special nursing faculty recruitment initiative through the existing Song-Brown program.
- (3) Reassess the interest and feasibility of pursuing future legislation regarding expanded scope of practice for APRNs. Although recent efforts in California have been unsuccessful, reassessing the feasibility of expanding scope of practice for nurse practitioners to enable them to practice at the top of their license could be a means for expanding access to primary care statewide, and could be of particular benefit in medically underserved regions such as the SJV.

#### HEALTH PROFESSIONAL PIPELINE PROGRAMS

## I. OVERVIEW

Racial, ethnic, and linguistic diversity among health care professionals is associated with better access to care for minority and underserved populations, which results in improved patient outcomes and cost savings. Underrepresented minority (URM) physicians (primarily Black/African American, Hispanic/Latino/a, and Native American) are more likely to practice in underserved communities and serve a larger number of minority patients. URMs make up about 25 percent of the nation's population, yet they constitute about nine percent of the physician workforce. In California, it is also important to note that although nearly 50 percent of the state's residents identify as Hispanic or Latino/a or African American, fewer than 10 percent of California's active physicians identify as Latino/a or African American.

Many factors contribute to the historic lack of diversity in the health sciences, including poor pre-college academic preparation, less effective study habits and test-taking skills, lack of financial aid, family responsibilities, lack of mentoring and role models, poor or insufficient undergraduate advising, peer and faculty discrimination, unconscious bias, stereotype threat, and social isolation. Pipeline, pre-professional, and enrichment programs for K-12 students and college undergraduates offer substantial benefits and resources for enhancing opportunities for racial and ethnic minorities and educationally or financially disadvantaged students to enter careers in the health sciences.

## II. HEALTH PROFESSIONAL PIPELINE PROGRAMS IN SAN JOAQUIN VALLEY

Current pipeline programs in the San Joaquin Valley (SJV) range from activities initiated in elementary through high school, to those focused on students enrolled in community colleges, California State University (CSU) and UC campuses. Programs range in duration from a few weeks, often in the summer, to year-long interactions with students. Some programs are personnel intensive, where there is a focus on a small number of students whereas others extend outreach to larger numbers. Students from poorly performing schools, socioeconomically disadvantaged backgrounds, or who are the first in their family to attend college appear to benefit the most from these programs. Described below are examples of model programs primarily focused on creating pathways to a career in the health sciences.

# UCSF Fresno Latino Center for Medical Education & Research

The UCSF Fresno Latino Center for Medical Education & Research (LaCMER) provides multiple longitudinal, comprehensive academic programs to address the serious shortage of Latino physicians and other underrepresented health care professionals in the region. LaCMER works to create a strong educational pipeline within the public schools in Fresno County by recruiting, advising, mentoring and tutoring Latino students and other educationally and economically disadvantaged students to meet the academic qualifications necessary to enter any CSU, UC, or private university. The mission of the center is to encourage and develop individuals to become health care professionals who will return to the San Joaquin Valley to provide culturally competent care to the medically underserved. LaCMER is funded in part by local, state, and federal agencies, as well as respective school districts; grant funding by private foundations has also been a significant source of support over the years. The cost to administer LaCMER programs is approximately \$1 million annually. <u>http://www.fresno.ucsf.edu/latino-center-for-medical-education-and-research/</u>

LaCMER offers three health professions preparatory programs: Junior Doctors Academy, Doctors Academy, and Health Careers Opportunity Program.

# Junior Doctors Academy

The Junior Doctors Academy (JDA) is a special academic enrichment program for motivated seventh and eighth grade students who are interested in health careers and attending Caruthers, Kings Canyon, Sequoia and Terronez Middle Schools. JDA academically prepares middle school students to enter high school and increases awareness of careers in medicine and other health fields. The program offers: tutoring support; study trips to colleges, universities, primary care facilities and science museums; community service activities; health professional guest speakers; and parent engagement. In 2016-17, a total of 217 students were enrolled in the program, with an average of 54 students from each school.

# Doctors Academy

The Doctors Academy (DA) is a challenging school-within-a school program at Caruthers, Selma and Sunnyside High Schools. It was created to increase the number of students who graduate from high school, college, and go on to become competitive health professional school applicants. The program provides extended academic, personal, and career counseling, as well as test preparation. The Doctors Academy includes summer school enrichment programs; rigorous accelerated classes with an emphasis on math, science and writing; weekly tutorial support from current college students; culturally competent health research projects; volunteer experiences; five-year educational plan counseling and support services; parent empowerment workshops; medical or health practitioner mentors; and clinical placement in medical, science, or health settings.

The UCSF Fresno Pharmacy Education Program has also collaborated with LaCMER to provide information about careers in pharmacy and pathways for admission to interested students.

Since 1999, the DA program has had admirable success. Among graduates from 2003 to 2016, 457 out of 458 (nearly 100%) were accepted into a four-year college.

- 100% of participating students graduated from high school (urban sites)
- 41% of students have gone directly from high school into a UC
- 35% of students are working in some area of health
- 20 individuals are currently in medical school

# Health Careers Opportunity Program (HCOP)

The Health Careers Opportunity Program (HCOP), located at CSU Fresno but managed by LaCMER, is an academic/extra-scholastic student support program dedicated to serving undergraduate students from economically and/or educationally disadvantaged backgrounds. HCOP prepares students, who have a

strong interest in the health and allied health professions and who ultimately plan to return to practice in the Central Valley to become competitive for admission to medical, dental, pharmacy, physical therapy and other health/allied professional programs. Participants must be enrolled at CSU Fresno and have a minimum cumulative grade point average of 3.0. HCOP provides resources and assistance, including tutoring, mentoring, advising, clinical placements, and guidance with health professional program applications. The program serves over 160 students annually and each year 10-15 students are accepted to a health professional program. A number of these graduates are now clinical providers in the SJV, practicing as physicians, dentists, pharmacists, nurses, public health workers, mental health workers, and hospital administrators. HCOP collaborates with the San Joaquin Valley Program in Medical Education (SJV PRIME) to offer annual local workshops for pre-medical students and provide mentors during the admissions process.

LaCMER organizes the Health Education and Leadership (HEaL) conference during the fall and spring to engage all program participants (JDA, DA, and HCOP) and their parents. Approximately 650 people attend each conference, including community and health professionals, medical residents, and practicing physicians.

# III. COMMUNITY COLLEGE PIPELINE PROGRAMS

UC Merced, the newest campus in the UC system, aims to increase college-going rates among students in the San Joaquin Valley. The campus strives to help improve the standard of education through various educational outreach programs, including transfer initiatives in partnership with community colleges in the SJV. The student populations at community colleges are more racially and economically diverse than those at CSU and UC, which provides opportunities for UC Merced to build on the success of existing transfer programs through the development and inclusion of a health professions pipeline component. Programs identified below have the potential to target community college students with an interest in the health sciences.

# Summer Up Program

Through the UC Transfer Initiative Program at UC Merced, the Summer Up Program is a six-week, Merced College math program designed to help community college students be one step closer to transferring to a four-year university. The program serves community college students by providing online and in-class math instruction, supported by Merced College math faculty and UC Merced teaching assistants. The goal of the program is to provide students with the academic foundation to be successful as college students and graduates. <u>http://uctip.ucmerced.edu/community-college/summer-up</u>

## Empowering to Reach Achievement Program

The Empowering to Reach Achievement (ERA) Program targets community college bound high school seniors from Atwater, Buhach, Livingston, Madera, and Merced high schools who are interested in transferring to a four-year university. The program goals focus on educating students about the transfer pathway, knowledge about transfer requirements and how to transfer successfully. The program works

with students throughout the academic year to help them discover their career goals and select the college or university that will be the best fit for them. <u>http://era.ucmerced.edu/</u>

# Summer Transfer Academy and Resources for Success

The Summer Transfer Academy and Resources for Success (STARS) is a free, summer residential program designed to help community college bound high school students successfully navigate the community college system and transfer to a four-year university. STARS is a four-day/three-night program that takes place at the UC Merced campus. Students have a chance to experience life as a college student and to gain more information about community college resources, financial aid, study skills, UC/CSU admissions requirements, and other topics. <u>http://era.ucmerced.edu/stars-program</u>

- IV. KEY FINDINGS
- (1) Securing ongoing financial support for existing pipeline programs continues to be challenging. Most health professional pipeline programs in the SJV are funded by multiple sources including local school districts, state agencies, and private organizations. These programs are often reliant on short-term grant funding to sustain their budgets. This creates instability for staff and places the programs at intermittent financial risk.
- (2) Most pipeline programs in the SJV do not focus on creating a pathway to health professional schools. Model health professional pipeline programs with strong records of success exist in the SJV and other locations across the state. However, the majority of existing pipeline programs in the SJV focus on creating a pathway to undergraduate degree programs. Several successful health professional pipeline programs (including post-baccalaureate programs) exist at other California campuses and could serve as models that could be replicated in the SJV. For example, the Biology Scholars Program (BSP) is an undergraduate program at UC Berkeley designed to promote the success of students from groups historically underrepresented in the biological sciences. The program has an exceptional record of success, with approximately 85% of URM BSP students gaining admission to medical school compared to 55% for all UC Berkeley premedical students, and 35% of URM students not in BSP (see Appendix F for more information).
- (3) Although California post-baccalaureate programs have a longstanding record of success, no post-baccalaureate programs are currently located in the San Joaquin Valley. Health professional post-baccalaureate programs have proven to be highly successful in providing the additional support that many students need to be competitively eligible for admission to medical school and other health professional programs. UC post-baccalaureate programs are offered across health professional disciplines at various UC campuses.
- (4) The majority of pipeline programs in the SJV focus on K-12 students. Given the predictive value of undergraduate students in choosing a health career (i.e., university and transfer students are closer in the educational pipeline to applying to a health professional program than K-12

students), there are opportunities to enhance existing pipeline programs for transfer students by dedicating resources to develop and sustain a focused health professions pathway.

## V. RECOMMENDATIONS

- (1) Convene a higher education taskforce of representatives from UC Merced, CSU, and the SJV California Community Colleges (and perhaps others from UC and CSU campuses with successful programs) to develop a strategic plan to create and fund collaborative programs that will successfully prepare undergraduate students from the SJV for competitive eligibility for admission to a health professional school. This effort should build on best practices and be focused on meeting the needs of pre-health students at UC Merced, CSU Bakersfield, CSU Fresno, and CSU Stanislaus. Successful health professional pipeline programs in place at other UC campuses (e.g., UC Berkeley Biology Scholars Program, UC Riverside Medical Scholars Program (Appendix G) should be replicated or adapted at UC Merced as a strategy for meeting local needs. As part of this effort, consideration should be given to developing a regional postbaccalaureate program at UC Merced to support qualified college students from the San Joaquin Valley.
- (2) Funding commitments for new and existing programs, whether at the undergraduate or K-12 levels, should be made for a minimum five-year period to provide financial stability and continuity, contingent upon reporting of outcomes and demonstrated success. Resources should be identified and committed to support proven pipeline programs with a demonstrated record of success.
- (3) There are opportunities to build a pathway to leverage the diversity of California's Community Colleges by focusing on transfer students who are interested in pursuing a career in the health sciences. The UC Merced Transfer Initiative Program offers support to students interested in transferring from a California Community College to a UC – <u>http://uctip.ucmerced.edu/</u>. While UC Merced does not yet have health professional pipeline programs, expanding existing transfer programs to focus on the health sciences would likely increase the future number of underrepresented minority students applying to health professional programs.





## III. REGIONAL INITIATIVES FOR FUTURE GROWTH IN THE HEALTH SCIENCES

## HEALTH SCIENCES MILESTONES AT UC MERCED: 2008 TO PRESENT

UC Merced has a plan for developing future health sciences education programs as part of the campus' academic plan. Many of these early efforts began in 2007-2008, and were developed in consultation with the UC Office of the President and other UC academic partners. In addition to the designation by the National Institutes of Health as a Center of Excellence on Health Disparities, steady progress toward developing the infrastructure necessary for health sciences instruction has been ongoing. Significant among these are, the establishment of the Health Sciences Research Institute (HSRI) and development of an undergraduate minor concentration and undergraduate major in Public Health (established in 2014). These efforts will help prepare future UC Merced graduates to enter the workforce or enroll in graduate or health professional degree programs. The campus has also developed an accredited PhD program in Public Health, where graduate students work with the diverse communities in the SJV and actively engage in research to identify solutions to the challenges facing the people in the region.

Planning for a future medical education program at UC Merced began before the arrival of undergraduate students on campus in fall 2005. The following provides a timeline of the steps taken and activities developed on the pathway to expanding health sciences education at UC Merced since 2008:

#### <u>2008</u>

- May 2008 At the recommendation of former UC President Robert C. Dynes, the UC Board of Regents endorsed continued planning for a possible future UC Merced School of Medicine with the expectation that the campus present a detailed business plan for a medical school in May 2009 along with a basic campus plan with established goals in place as a condition of proceeding beyond the planning process. Then Chancellor Steve Kang and then Dean of Natural Sciences Maria Pallavicini provided an update on planning. At that time, the proposed new medical school was envisioned to open in 2013-14 with a class of 32 students and an estimated annual operating budget of \$11 to \$16 million.
- September 2008 UC Merced created a small planning office to advance its medical education proposal, Dean Pallavicini was appointed Vice Provost for Health Sciences and an external consulting group, the Washington Advisory Group (WAG), was retained to assist in examining the campus' planning efforts to establish a new school.

#### <u>2009</u>

January 2009 — The WAG consultants submitted a final report to former UC Merced Chancellor Kang after reviewing background materials and meeting with individuals on campus, at sister campuses and at the UC Office of the President; representatives from potential clinical affiliates in the San Joaquin Valley; academic planning partners at UC Davis and UCSF Fresno; and leaders of the Valley Coalition for UC Merced Medical School. The principal recommendation in the report suggested moving forward toward the creation of a fully independent medical school in three distinct stages; with each being contingent upon appropriate ongoing resource support. These stages were proposed as follows:

- Establish an undergraduate program in biomedical education to attract exceptional students to pursue BS degrees that emphasize the health needs of the Valley and prepare them for advanced study in all of the health sciences, medicine included.
- Transition and begin as a "branch campus" in conjunction with the UC Davis School of Medicine as early as 2012 provided that key milestones could be met (e.g. 16-24 students would be admitted into a UC Merced-specific program of medical study with learning experiences on the UC Davis campus and at UC Merced).
- Then, pending adequacy of permanent operating resources, move toward establishment of a fully-independent UC Merced medical school after having functioned as a successful branch campus after a period of time and seek Regental approval when the State's economy is more favorable, ideally no later than 2020.
- February 2009 Former UC President Mark Yudof endorsed the recommendations by WAG, emphasizing the importance of a stepwise approach and the need for permanent ongoing resource support to fund operating and capital needs at each step along the way.
- February 2009 Congressman Jim Costa (D-Fresno) and then Congressman Dennis Cardoza (D-Atwater) announced a \$147,000 grant from the California Endowment to the Valley Coalition for a UC Merced Medical School to collect community input regarding planning for the future UC Merced medical school. The Coalition also offered its support to UC Merced's plan with a formal resolution, which called for incorporation of medical education and clinical work at UCSF Fresno and other locations in the San Joaquin Valley, as appropriate, during the "Phase II" UC Davis-UC Merced partnership program. The Coalition's resolution also called for the medical school to be developed and fully independent by 2015, five years earlier than called for in the WAG report.

# <u>2010</u>

- May 2010 UC Merced appointed Donald M. Hilty, MD, director of the Rural Program in Medical Education at UC Davis School of Medicine, as co-director of the San Joaquin Valley Program in Medical Education.
- July 2010 Following a series of listening sessions in the region, the Valley Coalition for UC Merced Medical School released the report "Vision for the Valley," which detailed the health challenges that exist in the San Joaquin Valley, supported the future development of a medical school at UC Merced and made specific recommendations regarding planning.
- September 2010 UC Merced announced a partnership with UC Davis School of Medicine to establish a medical education program to begin educating medical students in 2011.
- > September 2010 UC Merced began offering a minor in public health.
# <u>2011</u>

July 2011 — UC Merced Chancellor Dorothy Leland and the UC Davis School of Medicine (represented by Tonya Fancher, MD, associate director for curriculum) announced the first cohort of students in the UC San Joaquin Valley Program in Medical Education (SJV PRIME).

# <u>2012</u>

- Summer 2012 UC Merced enlisted Derry Ridgway, MD, to serve as interim director of medical education. Dr. Ridgway's responsibilities included helping to guide planning regarding hands-on medical opportunities for students and faculty involvement in PRIME among other responsibilities.
- July 2012 UC Merced established the Health Sciences Research Institute (HSRI) to foster research aimed at improving the health of people in the San Joaquin Valley.
- > July 2012 San Joaquin Valley PRIME announced the second class of students.
- September 2012 UC Merced admitted the first cohort of public health graduate students as part of a School of Social Sciences, Humanities and Arts program.

# <u>2013</u>

- April 2013 The first class of students in the San Joaquin Valley PRIME began clinical training at UCSF Fresno under the direction of Kenny Banh, MD, director of undergraduate medical education at UCSF Fresno and site director for UC Davis clerkships at UCSF Fresno.
- May 2013 UC Merced HSRI hosted the Cancer Health Communications forum aimed at improving testing and detection of cancer in the region.
- June 2013 UC Merced hosted a medical education symposium to consider the future of medical education at UC Merced.
- June 2013 HSRI launched the Valley Fever Research Consortium aimed at increasing awareness of the illness and improving detection and treatment.
- > September 2013 San Joaquin Valley PRIME announced the third class of students.
- November 2013 HSRI, along with UCSF Fresno and California State University, Fresno's Central California Center for Health and Human Services, held a "Valley Fever Research Day" at UCSF Fresno to determine research priorities and public service needs related to valley fever.

# <u>2014</u>

- March 2014 HSRI presented an educational lecture series on valley fever to help educate the public about this disease.
- March 2014 The Central Valley Higher Education Consortium in partnership with UC Merced, UCSF Fresno and Fresno State received funds from the State of California Office of Statewide Health Planning and Development to hold a pre-medical conference for Fresno State and UC Merced

students at UCSF Fresno in September 2014.

- April 2014 The second class of students in the San Joaquin Valley PRIME began clinical training at UCSF Fresno.
- April 2014 UC Merced HSRI, Public Health, Health Psychology, and Molecular and Cell Biology cosponsored a Strategic Academic Focusing Initiative around the theme of Human Health Sciences.
- > August 2014 UC Merced began offering an undergraduate major in public health.
- > August/September 2014 Fourth class of students in the San Joaquin Valley PRIME started.
- September 2014 Reaching Out to Aspiring Doctors for the San Joaquin Valley pre-medical conference for UC Merced, Fresno State and other area college and university students was held at UCSF Fresno.

# <u>2015</u>

- March 2015 The UC Merced Senate appointed a faculty-led Medical Education Task Force to make recommendations about UC Merced's involvement in the SJV PRIME and options for medical education at UC Merced.
- > April 2015 The third class of students in SJV PRIME started clinical training at UCSF Fresno.
- > May 2015 First class of students graduated from the SJV PRIME.
- August 2015 The UC Merced Medical Education Task Force visited UC Berkeley, UC Davis and UCSF to consider options for medical education at UC Merced.
- > August/September 2015 Fifth class of students in the SJV PRIME began.
- September 2015 UC Merced began laying the foundation for a PhD in public health.
- November 2015 The Medical Education Task Force delivered a report to the UC Merced Senate on options and recommendations for Medical Education at UC Merced. Senate asked the faculty associated with the Human Health Sciences Strategic Academic Focusing Initiative to lead discussions regarding development of medical education at UC Merced.

#### <u>2016</u>

- > April 2016 Fourth class of SJV PRIME students started clinical training at UCSF Fresno.
- > May 2016 Second class of students graduated from SJV PRIME.
- September 2016 The second Reaching Out to Aspiring Doctors (ROAD) for the San Joaquin Valley pre-medical and pre-health conference for students from UC Merced, Fresno State and other area colleges and universities was held at UCSF Fresno.
- > October 2016 SJV PRIME partner campuses and UC Office of the President renewed their

commitment to the program by extending the Memorandum of Understanding through June 30, 2019.

- October 2016 UC Merced broke ground on Merced 2020 Project, an unprecedented public-private partnership that will provide new facilities and capacity to accommodate enrollment growth to 10,000 students.
- Fall 2016 Thanks to funding from the California Legislature, spearheaded largely by Assemblymember Adam Gray, SJV PRIME has funding to increase enrollment to 12 students per year, leading ultimately to an enrollment of 48 students in the program.

# <u>2017</u>

- January 2017 UC Merced researchers who are part of the HSRI were awarded \$1.7 million grant to study valley fever as part of UC's Multicampus Research Programs and Initiatives.
- February 2017 UC Merced Public Health PhD program received system-wide approval to provide graduate level training in prevention sciences, environmental health, and health services and policy.
- > April 2017 Fifth class of SJV PRIME students started training at UCSF Fresno.
- May 2017 Third class of students graduated from SJV PRIME. By this time, the program had graduated three classes for a total of 12 students who are currently training in residency programs.
- May 2017 UC Merced Public Health graduated its first PhD: Van Do-Reynoso, Director of the Madera County Public Health Department.
- > Spring 2017 Human Health Sciences SAFI led the hiring of seven new faculty members.
- > July 2017 HSRI organized SJV PRIME first-year students' introduction to the San Joaquin Valley.
- → July 2017 UC Merced, UCSF Fresno and UCOP visited UC Riverside School of Medicine with Assemblymember Gray to learn from their process of establishing a medical school and tour facilities.
- August 2017 UC Merced Public Health Program admitted fifth cohort (for a total of 30 graduate students) and continues to serve almost 300 undergraduate public health majors and 100 minors.

UC Merced continues to support San Joaquin Valley PRIME, continued growth of the Health Sciences Research Institute and offers academic programs that attract exceptional students to pursue degrees that emphasize the health needs of the Valley and prepare them for advanced study in all health sciences, medicine included. At the same time, the campus is focused on developing its core academic and research programs, with the goal of accommodating 10,000 students.

#### POTENTIAL NEW UCSF BRANCH CAMPUS IN THE SAN JOAQUIN VALLEY

### I. BACKGROUND

From the inception of the SJV Program in Medical Education, a number of steps were taken to focus on preparing future physicians who would contribute to meeting regional health care needs. Although it was made clear from the start that the program was not to be considered or regarded as a branch campus, there was also recognition that the successful transition and expansion of the program could eventually become the foundation for development of a future branch campus. The development of medical school branch campuses at other institutions around the country or joint educational programs, including the longstanding partnership UC Riverside had with UC Los Angeles prior to its transition to an independent medical school, have proven to be successful pathways to opening newly accredited medical schools.

To better understand the resources that would be required to undertake such an effort, an assessment of the requirements for creating a possible future branch campus of the UC San Francisco (UCSF) School of Medicine was undertaken by the UC Office of the President in coordination and partnership with UCSF leadership. This assessment was completed in October 2017 using the following phased approach for medical school enrollment growth:

- 12 students per year at fall 2020 (currently funded under SJV PRIME)
- 24 students per year at fall 2022 (contingent upon permanent funding/resources)
- 50 students per year at fall 2025 (contingent upon permanent funding/resources)

This effort has provided a solid foundation for the development of a more comprehensive, detailed business plan and further consideration by UC leadership.

II. ESTIMATED RESOURCE REQUIREMENTS

#### Purpose

A new UC branch campus in the SJV, targeting potential students interested in practicing in there, could build upon the existing foundation at UCSF Fresno and its longstanding 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 medical education opportunities and reducing physician shortages to help address some of the region's most pressing health issues. This effort would also provide increased opportunity for high school and college students from the region to prepare and become competitively eligible for admission to a medical school geared toward addressing community needs. With continued planning and development of new partnerships in the region, these efforts could also improve physician and faculty recruitment efforts; bolster clinical research; and bring a significant increase in new economic activity to the area. Consultants have estimated that a branch campus could bring an additional \$30 million in annual revenue to the region.

# Academic and Clinical Feasibility

The leadership and faculty of the UCSF School of Medicine, in conjunction with leadership and faculty at UCSF Fresno (and including opportunities to partner further with UC Merced, California State University, Fresno, and other educational programs), have the expertise to successfully design, develop and launch a new branch campus. UCSF has a long history of making significant contributions to the delivery of high quality health services, which over time have saved millions of lives. UCSF School of Medicine has a history of successfully overseeing medical student education on another UC campus through its longstanding partnership with UC Berkeley, known as the UC Berkeley-UCSF Joint Medical Program. 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.

It is important to emphasize that new faculty and staff will be required, among other essential resources. To have optimal impact, students should be recruited specifically to join a possible UCSF-SJV branch campus with a commitment to spend the majority of their educational time in Fresno and the surrounding SJV. In addition, the curriculum must be designed with a focus on the competencies graduates will need to impact health disparities in the SJV and similar rural environments. Additional impact would be evident with the development of innovative health sciences preparatory programs at UC Merced, Cal State Fresno and other SJV campuses in collaboration with UCSF and UCSF Fresno to prepare students to succeed at matriculating into and graduating from this branch campus.

The most feasible short-term approach would be to use a phased approach, as previously planned and begin with an expanded class of medical students who start their medical education at the UCSF main campus for the first phase of their curriculum, and 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, faculty capable of teaching foundational sciences and clinical skills can be recruited and infrastructure can be developed to support implementation of a full four year curriculum located within the Central Valley, assuming adequate resources are available. Once this is achieved, enrollment should target 50 students per year as a strategy for addressing the high costs of launching a new campus, while also benefiting from both the lower marginal costs and future regional benefits associated with having a larger class of students enrolled. This accelerated plan to deliver all four years of the medical education curriculum in the SJV will lead to the best possible outcomes for retention.

# Economic Feasibility

The most substantial barrier to this project is the need to assure that sufficient, ongoing resources are available to support the operating budget needs of a high quality UC medical education program in the SJV. To meet this aim and to have students receive most of their medical education in the SJV, there would also be needs for future capital investments. This would be required, for example, before enrollment could grow to 50 students per class.

It is important to emphasize that significant investment beyond tuition revenue will be needed given that tuition costs do not cover the true cost of medical education at any medical school. In addition, students from this region are likely to come from relative or absolute economic disadvantage. The pressing need for scholarship support among this group will thus be greater than that of traditional medical students. Without such robust support, high levels of indebtedness would likely discourage career choices focused on the specialties, geographic areas, and populations where the needs are greatest. Top students from the region will be competitive for admission to other U.S. medical schools, which in turn could result in future decisions to enroll in schools that offer substantial financial aid and scholarship support. Within this context, it should be noted that first-generation college or graduate students often have higher needs for learning, personal, and financial support, which increases overall costs for instruction.

Dedicated 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 a new branch campus in the SJV. Based upon recent experiences with development of the UC Riverside School of Medicine, consultation with other U.S. medical schools, and the work undertaken over the past year with an experienced consulting group, it is estimated that the start-up costs for the first ten years of a branch campus, inclusive of capital expenses, is approximately \$157 to \$167 million. Beyond the first ten years, an annual operating budget supporting 50 students per class, located in or near UCSF Fresno would be approximately \$29-\$33 million annually. Tuition revenues would support roughly \$11.7 million of this annual budget, leaving a gap of \$18 to \$22 million that must be filled through another stable and sustainable revenue source.

Launching a fundraising campaign within and around the SJV to attract philanthropy could also be vital for meeting the overall needs of this endeavor. Notwithstanding the uncertainty of a future fund-raising campaign, a permanent and robust plan for stable, permanent financing will be required in order to move forward. One option for meeting this need would be to create an endowment that could generate the roughly \$18 to \$22 million in ongoing annual operating revenue support that (together with tuition revenue) would be required to sustainably run a branch campus enrolling a total of 200 medical students. An endowment of \$400 to \$450 million would be required to meet this goal, which could be met through creation of a new public-private partnership with revenues generated through a variety of sources. These could include one-time or multi-year state investments; new local sales tax measures (Table 3); philanthropy and fundraising; and perhaps others. These or other options for ensuring a stable, ongoing operating budget will require further discussion with state and regional leaders.

# I. FUTURE PATHWAYS TO AN INDEPENDENT MEDICAL SCHOOL

Although this effort envisions the UCSF School of Medicine as the LCME-accredited medical school for the SJV PRIME program and for a potential future branch campus in the SJV, it is important to emphasize that this pathway also provides a future opportunity for a transition to an independently accredited school of medicine in the SJV. The most cost-effective and timely way to achieve this goal is to draw on the strengths, expertise, and best practices in medical education already in place at other UC medical school campuses, particularly by expanding and building the existing partnership between UC Merced, UCSF-Fresno, and UC San Francisco established through the SJV PRIME program and that could be further strengthened with the launch of a new branch campus.

Partnering with UCSF offers strategic advantages with respect to curriculum, program quality, accreditation, cost-savings, timing, and the core education, research and public service missions of UC.

	Location	Voter Approval Required	Restrictions on Use of Tax Revenue	Similar Specific Use Taxes
Sales Tax	County	2/3 majority vote required for specific use sales tax	Use specified in voter-approved measure	<ul> <li>Fresno County collects a</li> <li>0.10% sales tax</li> <li>to fund local</li> <li>zoos</li> <li>Alameda,</li> <li>Contra Costa,</li> <li>and San</li> <li>Francisco</li> <li>Counties</li> <li>collect a 0.50%</li> <li>sales tax to</li> <li>fund Bay Area</li> <li>public transit</li> </ul>
Property Tax	County	2/3 majority vote needed to approve issuance of GO bonds to be repaid with property tax revenue.	Pay for voter- approved debt to fund infrastructure projects. Bond proceeds may not be used for operating expenses.	<ul> <li>Voters in</li> <li>Fresno county approved over</li> <li>\$500 million in bond issuances for nine school districts in 2016</li> </ul>
тот	County	2/3 majority vote required for specific use TOT	Use specified in voter-approved measure	

# Table 3 - Select Tax Options for Generating New Revenues

In order to strengthen the basic sciences infrastructure at Merced that would serve as the foundation upon which to build from, the campus could identify and recruit biomedical sciences faculty that would be prepared and able to deliver the UCSF curriculum (already accredited by the Liaison Committee on Medical Education) at UC Merced to first and second-year medical students, who would then complete their clinical training in years three and four at UCSF-Fresno and other clinical settings throughout the region. This model is similar to the partnership that UC Riverside (UCR) had with UCLA, which paved the way for UCR's successful transition to an independently accredited School of Medicine. Possible options for accelerating and expanding the role of UC Merced could include those summarized below:

Option 1

• Fall 2025 – 50 first-year medical students beginning at UC Merced

Estimated Cost – In addition to the estimated \$18 to \$22 million in ongoing annual operating revenue support that (together with tuition revenue) would be required to operate a branch campus, roughly \$5.6 million in annual instructional expenses would be needed in order to teach the curriculum at UC Merced. The estimated resource requirements for a class of 50 students will be approximately \$24 to \$28 million. It should be noted that these estimates are above and beyond the initial 10-year start-up costs identified earlier in this section.

### Option 2

• Fall 2030 – 50 first-year medical students beginning at UC Merced

Estimated Cost – The resource requirements would be roughly the same as those noted in Option 1 (adjusted for inflation). This additional time, however, could prove to be valuable and beneficial for enabling the campus leadership and faculty to advance overall campus priorities; pursue additional fund-raising; and gain some further experience in medical education that will help lead to long-term success. It should be noted that these estimates are above and beyond the initial 10-year start-up costs identified earlier in this section.

These or other options would require significant investment of new resources to build the infrastructure and the foundation for a comprehensive four-year medical education program in the SJV. While this path would be contingent upon LCME approval, and with the UCSF School of Medicine serving as the LCME-accredited (and degree-granting) medical school, a transition to an independent UC Merced medical school could then occur, contingent upon: 1) leadership agreement by UCSF and UC Merced; 2) sufficient, ongoing resources to support the operating needs of an independent medical school at UC Merced; and 3) approval and successful accreditation by the LCME.

### IV. HEALTH CARE DELIVERY

#### FEDERALLY QUALIFIED HEALTH CENTERS

#### I. OVERVIEW

For more than 50 years, Federally Qualified Health Centers (FQHCs or health centers) have delivered affordable, accessible, high quality primary health care to patients in medically underserved regions and communities across the nation. As a result, health centers have become an essential health care option for America's most vulnerable populations, including migrant and seasonal agricultural workers, residents of public housing, people experiencing homelessness, and U.S. veterans. These clinics increase access to care and serve all individuals regardless of their insurance status or ability to pay. The FQHC care model is comprehensive, culturally competent, and patient-centered, coordinating a wide range of medical, dental, behavioral, and patient services.

FQHCs receive federal grant funding along with access to the following benefits:

- Prospective Payment System reimbursement for services to Medicaid and Medicare beneficiaries
- Medical malpractice coverage
- 340B Drug Pricing Program discounts for pharmaceutical products
- Free vaccines for uninsured and underinsured children
- Federal loan guarantees for capital improvement
- Assistance in the recruitment and retention of primary care providers through the National Health Service Corps

Approximately 1,400 health centers currently operate more than 10,400 service delivery sites that provide care in every U.S. state, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and the Pacific Basin.

# II. FQHCs IN THE SAN JOAQUIN VALLEY

FQHCs have had a significant impact on California's health care delivery system. There are currently more than 175 health center organizations providing care at roughly 1,400 sites throughout the state

Table 4 – FQHCs in the US, CA, & the San Joaquin						
Valley						
	Organizations	Clinical	Patients			
		Sites				
US	1,375	10,400	24.3 M			
CA	176	1,400	4.1 M			
SJV	11	136	700 K			

(Table 4). One of California's regions with a heavy reliance on clinics for meeting the health care needs of its population is the San Joaquin Valley (SJV). There are 11 FQHC organizations with 136 clinic sites providing health care services in the SJV (Appendix H). Among all community clinics, FQHCs operate the largest share (i.e., 136 FQHC sites of the nearly 180 clinic sites) located in SJV

counties (Figure 4). Since 2013, each of these organizations have received Health Resources and Service Administration (HRSA) grants to open new sites, expand services at existing sites, and expand capacity at existing sites. The counties with the highest number of FQHC clinics are Kern (37), Fresno (29), and Tulare (22). The cities with the largest concentration of these clinics are Bakersfield (19), Fresno (13),



Stockton (8), and Tulare (7), with Clinica Sierra Vista running the majority of those located in Bakersfield and Fresno.

Figure 4: Geographic distribution of FQHC clinics across the San Joaquin Valley. Each color is associated with each of the 11 FQHC organizations.

### Health Center Program Look-Alikes

Other important safety-net clinic organizations serving medically underserved areas include those designated by HRSA as Health Center Program Look-Alikes (formerly called FQHC Look-Alikes). A Look-Alike is an organization that meets the eligibility requirements of an FQHC, but that does not receive federal grant funding. Although Look-Alikes do not receive federal funding, they receive many of the same benefits as FQHCs, including reimbursement under the Prospective Payment System. These clinics are often the most competitive applicants for new FQHC grant funding. There are currently 12 Look-Alikes in the SJV, with sites located in Fresno, Merced, Madera, Kings, and Tulare counties.

# School-based Health Centers

There are growing efforts by health centers to increase partnerships with local schools and school districts to develop School-based Health Centers (SBHC). SBHCs are funded under the FQHC program and offer students and families a convenient health care option. Many have also developed youth programs that provide exposure and volunteer opportunities that foster interest in health careers. There are currently four established SBHCs in the SJV. The Fresno Unified School District Board of Supervisors recently authorized the development of six new SBHCs.

# Central Valley Health Network

Health center organizations in the SJV are members of the Central Valley Health Network – a regional advocacy organization that supports the missions of its member organizations and works as one network to advocate for local, state, and federal policies that increase access to care and improve health outcomes for underserved populations. The Central Valley Health Network is among the largest networks of FQHCs in the U.S. and works closely with their partners at the California Primary Care Association and the National Association of Community Health Centers to ensure that health centers are supported as a vital part of the health care delivery system.

# III. TEACHING HEALTH CENTER PROGRAMS

Studies suggest that physicians who train in safety-net settings are more likely to practice in such settings after they complete their residency training. With this observation, the Patient Protection and Affordable Care Act (ACA) established The Teaching Health Center Graduate Medical Education Program that provides grants to underwrite the cost of training primary care residents in FQHCs, FQHC Look-Alikes and other community-based clinics that provide care to medically underserved people. Notwithstanding the financial uncertainties of the Teaching Health Center (THC) program, health center interest in developing residency programs and demand from medical school graduates interested in residency training in community-based ambulatory settings remains high.

California has six THCs, located in Bakersfield, Fresno, Modesto, Redding, San Bernardino, and San Diego. Each sponsors family medicine programs while the THC in San Bernardino also sponsors programs in pediatrics and psychiatry. Applications to these eight residency programs significantly exceed the total number (107) of available slots. There are currently three family medicine programs at health centers in

the SJV. A recent issue brief published by the California Health Care Foundation (CHCF) looked at the progress of the six THCs and found that most graduates of these residency programs continue to practice in underserved areas following their residency, which makes the development of more training programs attractive to some health center organizations. In 2016, leadership from four SJV health centers attended a statewide workshop hosted by the California Primary Care Association – *Introduction to Residency Program Development* – reflecting the interest among FQHCs in developing more residency programs in the region.

It is important to note that UCSF Fresno, its faculty group, and Community Regional Medical Center (CRMC) are currently in negotiation with Family Healthcare Network – an existing FQHC – to assume oversight and responsibility for the Ambulatory Care Center on the CRMC campus. This center is an outpatient facility that supports primary care, specialty, and subspecialty clinics for Medi-Cal and indigent patients. It is also the primary ambulatory teaching site for residents and fellows at UCSF Fresno and sees approximately 120,000 patient visits per year. Although the Family Healthcare Network is not currently a HRSA-funded THC, once the negotiations are finalized (expected by January 2018), the size and scope of the residency programs would be extensive and will exceed the number of residents and training programs that currently exist at the three THCs in the SJV. Although this will be beneficial, there will nevertheless be a clear need for further expansion of GME in targeted areas of need.

- IV. KEY FINDINGS
- (1) Federal funding for the Teaching Health Center program and its partner programs may be at risk. As part of the federal government's efforts to expand access to primary care, the ACA reauthorized and funded the existing Health Center and National Health Service Corps programs. One of the new programs created under the ACA to train additional physicians to work in FQHCs and other community-based clinics was the Teaching Health Center Graduate Medical Education (THC) program. Although funding was extended for FY 2016 and FY 2017, as of Feb 2018, federal funding for these programs has only been appropriated through the second quarter of FY 2018. The uncertainty around the future of the Medi-Cal expansion under the ACA is even more problematic. If not reauthorized, FQHCs and other Medi-Cal providers could see as much as a 70% decrease in revenue.
- (2) FQHC expansion is constrained by the limited provider pool. While clinic expansion in the SJV has proven to be an effective way to expand access to care, it is important to note that the longstanding workforce shortages in the region and related challenges with recruitment and retention persist. Increased expansion without a commensurate increase in providers would likely result in a redistribution of providers rather than a true increase in access to care.
- (3) The conflict between the educational and service missions creates barriers to successful expansion of Teaching Health Center programs. CHCF found the loss of productivity associated with teaching to be a significant challenge as health center revenue is primarily based on patient visits, while supporting high quality training programs requires trainees and faculty to devote a

significant amount of time to education and certain other non-clinical activities. Resources required for faculty recruitment and to meet standards for accreditation also require a substantial investment of resources, which makes development of residency programs a financial challenge for many FQHCs in the SJV (also noted in the GME section).

#### V. RECOMMENDATIONS

- (1) Ensure that state funding continues to be provided to sustain existing Teaching Health Centers that are facing an imminent loss of federal funding. The state budget bill for 2017-18 recently passed by the Legislature includes the first \$33.3 million of the original \$100 million augmentation for health care workforce programs. This funding to support primary care residencies through the Song-Brown program includes \$5.7 million for California's THCs and will be available effective July 1, 2017, as approved by the Governor on June 27, 2017. Continued attention and monitoring of the funding needs of this program will be important as these funds are not permanent, yet are critically important given the uncertainty around the future of federal funding for the THC program.
- (2) Secure resources to appoint and convene a task force that includes representatives from UC Merced, UCSF Fresno, Teaching Health Centers, the Central Valley Health Network, and other necessary stakeholders to explore ways to develop new GME training models that make residency training in FQHC settings economically feasible and to help THCs overcome barriers to accreditation. The task force should also develop a plan for launching an educational campaign for SJV hospital and FQHC leaders to facilitate greater collaboration between hospitals and FQHCs in developing new residency programs (also noted in GME section).
- (3) Convene higher education leadership to discuss the value and importance of creating new partnerships and pipeline opportunities for pre-health students at UC Merced, CSU Fresno, and CSU Stanislaus that leverages the size of the Central Valley Health Network and the expansion of School-based Health Centers in the region (also noted in pipeline section).





#### TELEHEALTH

#### I. OVERVIEW

Telehealth is the use of communication technologies to enhance and support long distance clinical health care services, health education delivery and public health. Although "telemedicine" was once the term more commonly used to refer to the delivery of health services between patients and providers or consultations between providers, "telehealth" is now the more widely used term to describe a broad range of services, including dentistry, physical and occupational therapy, home health, health education and numerous others. Currently, 48 states and the District of Columbia have a definition for telemedicine, telehealth, or both; however, the terms are often used interchangeably (see Appendix I for glossary of commonly used terms). The National Consortium of Telehealth Resource Centers developed a framework for defining telehealth, which encompasses the following four modes of transmission:

- Live video allows providers to see patients through real time videoconferencing technology. Live video also allows providers to consult with distant specialists who would otherwise not be available for in-person consultations.
- **Store-and-forward** refers to the transmission of recorded health history, generally in the form of images or pre-recorded videos that are sent to a provider for clinical evaluation (e.g., x-rays, MRIs, video-exam clips).
- **Remote patient monitoring** (RPM) uses technology to collect a range of health data, such as heart rate or blood pressure, allowing providers at a distant site to monitor a patient's condition.
- **Mobile health (mHealth)** is a relatively new form of telehealth involving the provision of health care services using mobile devices, such as smart phones, tablets, and personal digital assistants.

While not all of these modes of telehealth may be required at a single site, each has the potential to provide benefits to health systems, particularly for those located within rural and medically underserved communities.

Across the U.S., the use of telehealth has grown rapidly, with more than half of U.S. hospitals using some form of telehealth. The American Telemedicine Association estimates that there are now roughly 200 telehealth networks with 3,500 sites in the nation. Increasingly, evidence has shown that telehealth can improve health care outcomes and lower costs, by reducing readmission rates, emergency department visits, and use of other costly services. Through the delivery of telehealth services, patients can access more timely care, and reduce costly and lengthy travel. Despite these recognized benefits, states still vary substantially in their policies and regulations with respect to telehealth.

Historically, California has been recognized as a provider and policy leader in the field of telehealth, enacting its first law in 1996. Since then, there have been a number of programs and initiatives seeking to expand the use of telehealth within the state. In 2007, Governor Schwarzenegger's administration worked with the University of California and other stakeholders to obtain \$22 million in funding from the Federal Communications Commission to develop a statewide telehealth network, which is also

known as the California Telehealth Network (CTN). Currently, the CTN has over 200 participating sites that benefit from the statewide medical grade broadband network. The CTN also works with the California Telehealth Resource Center (CTRC), one of the fourteen federally designated Telehealth Resource Centers in the nation, to expand telehealth training and support for medically underserved clinics and hospitals.

# II. TELEHEALTH IN THE SAN JOAQUIN VALLEY

Evidence has repeatedly shown that the San Joaquin Valley (SJV) has had a longstanding shortage of health care providers, particularly when compared to their more urban counterparts. Expansion of telehealth services has been viewed as a strategy for addressing regional workforce challenges and expanding access to care. As a result, there have been a number of programs and initiatives that have targeted the SJV. The following are select examples of organizations that have promoted the use of telehealth throughout the SJV and the state (see Appendix J for more telehealth activities).

# Anthem Blue Cross

In the late 1990s, Anthem Blue Cross (formerly Blue Cross of California) established its statewide telemedicine program. The program aims to increase access and timeliness of care in rural areas; improve health care quality; and support the education and retention of rural providers. As of 2015, there were over 60 primary care or presentation sites (e.g., clinics, doctors' offices) and over 18 specialty locations (e.g., specialist offices, teaching hospitals, medical centers) within the network. Eight of these Anthem Blue Cross telehealth primary care sites are located within the San Joaquin Valley.

#### Kings View Behavioral Health Systems

Kings View Behavioral Health Systems is a private practice group of clinics based in the San Joaquin Valley that has been delivering behavioral health services since the 1950s. It launched its telepsychiatry program to increase access to behavioral health care to patients in more rural areas in 2003. Kings View allows sites to pay only for the time used, provides 24-hour coverage and access to expert technical support. Kings View is one of the few providers of behavioral telehealth services in the San Joaquin Valley.

# UC Davis Health System

The Center for Health and Technology (CHT) Telehealth Program was established in 1992 to provide specialty neonatal care to expectant mothers in a small community distant from the UC Davis Medical Center. Since its inception, the CHT has provided 42,000 telemedicine consultations throughout 50 counties to over 200 sites. The program quickly became one of the largest in the nation and is well known for its expertise in pediatric specialty care. The CHT also provides training, education, and research opportunities for medical students, nursing students and others. The program has worked with a number of clinics and hospitals in the SJV, including but not limited to the Family Healthcare Network, Community Regional Medical Center, and Lodi Memorial Hospital.

#### UCSF Fresno

UCSF Fresno was established as a regional campus of the University of California, San Francisco in 1975 to address the severe shortage of physicians in the San Joaquin Valley. To further address the shortage of subspecialty care in the region, UCSF Fresno is planning to develop a telehealth program in partnership with UC Davis. The initial focus will be to establish relationships with existing Federally Qualified Health Centers and rural health clinics in the region.

#### III. KEY FINDINGS

- (1) Telehealth programs are far more likely to thrive in geographic regions with a major telehealth network hub. Many of the successful telehealth programs in the state are located in the northern and southern regions of the state and are supported by major medical institutions that serve as a telehealth network hub. These institutions, often academic medical centers, typically have a better supply of specialty physicians and other health care providers, in addition to professional and social connections within their communities. Specialists located at a telehealth hub can serve as a resource to both patients and primary care clinicians at hospitals, community clinics, and other health care facilities in medically underserved areas.
- (2) Start-up and ongoing costs for implementing telehealth are significant. Costs associated with equipment are site-specific and dependent on the medical specialties being provided; however, standard equipment can range between \$15,000 and \$22,000. This does not include the cost of additional equipment that may be needed for specific medical specialties. Ongoing costs, such as medical grade broadband, dedicated staff (e.g., site coordinator) and educational resources for those staff can create financial barriers to implementation for some organizations (e.g., community health centers). There also must be a steady investment in technology and personnel to sustain effective well-managed telehealth programs.
- (3) Limited or inadequate reimbursement for telehealth services continues to deter its effective utilization throughout the SJV and the state. Since the passage of the Telehealth Advancement Act of 2011, there has been expansion of the definition and coverage of telehealth services in California. Still, evidence suggests that reimbursement rates for telehealth services are lower than reimbursement for comparable in-person services. Medi-Cal, for example, only reimburses for a limited set of services and providers at rates that are often cited as low or insufficient. Medi-Cal is one of the largest payers of health care in the SJV, with some SJV counties having more than 50% of their population enrolled. For private payers, the provision of telehealth services is "subject to the terms and conditions of an individual's contract." In 2016, Assembly Bill 2507 was proposed to mandate reimbursement parity for telehealth services; however, this effort was unsuccessful.
- (4) Clinical sites often struggle to recruit and retain providers who are willing to see patients at rates that are sustainable for their programs. Sites that serve large Medi-Cal populations are

especially disadvantaged with respect to recruitment because of the relatively low reimbursement rates for telehealth services, which provide little incentive for providers to enter into agreements with these sites. Contracting with specialty providers can also present a challenge. For instance, some contracting arrangements can require that providers be compensated regardless of whether telehealth services are provided (i.e., regardless of whether patients are seen). Sites with low or unpredictable volumes of telehealth consultations cannot sustain the cost of these providers and thus cannot sustain a financially viable telehealth program.

(5) Generally, there is a lack of adequate publicly available information regarding the telehealth policies of private payers, which in turn exacerbates the difficulties and misunderstanding among providers and patients regarding the benefits of providing access to telehealth services. Confusion surrounding private payer telehealth policies continues to be an issue faced by providers across the nation. In California, although the policy environment is favorable, health providers have reported concerns regarding the lack of transparency related to reimbursement policies and denied claims. This misunderstanding of the actual business practices of private payers is a barrier to more providers opting to offer telehealth services for their patients.

#### IV. RECOMMENDATIONS

- (1) Provide the resources necessary to develop UCSF Fresno as the major telehealth network hub/regional site for the San Joaquin Valley. At present, the SJV lacks the presence of a major medical institution with the capacity to serve as a telehealth regional network hub. As the largest trainer of physicians in the SJV, UCSF Fresno in partnership with Community Regional Medical Center could serve as major providers of subspecialty care in the region. According to leadership at UCSF Fresno, resources that would be required include: sufficient space to house a hub (i.e., the physical site needed to house the equipment and infrastructure) to support both the central site and participating locations; a dedicated staff to provide technical support; and the personnel needed to provide an effective interface with electronic medical records. Once established as a major regional hub/central site, expansion of telehealth services could more readily occur through new partnerships with hospitals and clinics throughout the region. Resources that are in place at UC Davis offer a useful example of how this effort might be advanced.
- (2) Reassess the feasibility of requiring reimbursement for telehealth services equivalent to inperson consultations with providers. State law currently recognizes live video and store-andforward as forms of telehealth and private payers *may* reimburse for these services. Previously, Assembly Bill 2507 sought to require reimbursement parity; however, the bill was likely unsuccessful in view of the predicted increase in health expenditures (i.e., insurance premiums and enrollee-out-of-pocket expenses). The California Health Benefits Review Program estimated that overall health expenditures would increase by between \$96.8 million and \$402.6 million

within the first year. It is important to note that Assembly Bill 2507 also proposed to expand the definition of telehealth to include emails, phone calls, and text or chat conferencing. Further work is recommended to more clearly examine the costs of reimbursement parity given the state's current definition of telehealth. Such an assessment should also include updated actuarial analyses that are relevant for the SJV and statewide.

- (3) Improve incentives for providers to deliver care via telehealth to medically underserved areas by expanding eligibility for the State Loan Repayment Program to include telehealth providers. Legislation would be required to amend Article 2.5 of the California Health and Safety Code to include the eligibility of telehealth services within the California State Loan Repayment Program, which is administered by the Office of Statewide Health Planning and Development.
- (4) Legislation should be considered that would require all payers to make their telehealth policies publicly available. This measure would serve to inform providers and reduce confusion surrounding these policies. In the absence of laws mandating reimbursement or reimbursement parity, providers are left to do extensive research (on their own) to determine whether or not they can be reimbursed for telehealth services by certain payers. This creates unnecessary barriers for both providers and patients who may wish to understand the provisions of various insurance plans. At present, Texas has been the only state to pass legislation (TX Senate Bill 1107) requiring that all payers publish their telehealth policies on their website (Appendix K).

#### **DEMONSTRATION PROJECTS**

### I. OVERVIEW

The San Joaquin Valley (SJV) is one of the fastest growing regions in the State of California. It lags the rest of the state in many socioeconomic and environmental indicators, with some of the highest rates of poverty, uninsured, and poorest air quality in the state and nation. Over 41% of the population is covered by Medi-Cal. These problems pose persistent threats to the health of communities throughout the region. The SJV also ranks very high with respect to the prevalence of many preventable diseases and with respect to shortages of physicians and other health professionals. The rate of primary care physicians per 100,000 residents ranges from 43–64 for Fresno and surrounding areas, compared to a statewide average of 72 per 100,000 residents. Preventable hospitalization rates for the Fresno area are higher than the California average. Out of 58 counties in California, Fresno and the surrounding counties of Kern, Madera, and Tulare rank as 52<sup>nd</sup>, 53<sup>rd</sup>, 49<sup>th</sup>, and 50<sup>th</sup> respectively for health outcomes.

Although lacking in all areas of health care, the SJV does have several Federally Qualified Health Centers and clinics (FQHCs), as well as academic medical center programs at UCSF Fresno, Community Regional Medical Center, Kern Medical, and other locations. These institutions could provide opportunities for the development of demonstration projects. Demonstration projects are designed to test and measure the effects of potential changes to federal and state programs/policies; new health care delivery and payment models; expansion of scope of practice; and the development of other innovative approaches to improving health care.

The most common sponsors of demonstration projects are government agencies and philanthropic organizations. For example, the Centers for Medicare and Medicaid Services (CMS) Innovation Center supports the development and piloting of various payment and delivery models that aim to improve health outcomes and lower health care costs of those who receive Medicaid, Medicare, and Children's Health Insurance Program (CHIP) benefits. Congress authorized CMS – through the Affordable Care Act (ACA) and previous legislation – to conduct specific demonstration models that fall under the following categories:

- Accountable Care
- Episode-based Payment Initiatives
- Primary Care Transformation
- Initiatives Focused on the Medicaid and CHIP Populations
- Initiatives Focused on the Medicare-Medicaid Enrollees
- Initiatives to Accelerate the Development and Testing of New Payment and Service Delivery Models
- Initiatives to Speed the Adoption of Best Practices

There are several CMS-sponsored innovation models being run at the state level and being tested at numerous health care facilities across California. There are at least 20 facilities located in the SJV participating in these projects.

Some state agencies also sponsor or authorize demonstration projects. Although there has been minimal state funding in the past allocated for such projects for health care, the Office of Statewide Health Planning and Development administers the Health Workforce Pilot Projects Program (HWPP), which allows organizations to test and evaluate new or expanded roles for health care professionals or new delivery models, before changes in licensing laws are made by the California Legislature. Organizations use HWPP to study the potential expansion of a profession's scope of practice to expand access to health care and encourage workforce development. Nurses, dental auxiliary and medical auxiliary providers have benefitted most from this program.

Private foundations and health professional associations are major sponsors of demonstration projects as well. These organizations invest in new ideas and projects that they believe have the potential to significantly improve the quality of care, lower the cost of health care, and/or improve access to care for economically disadvantaged populations.

# II. DEMONSTRATION PROJECTS IN THE SAN JOAQUIN VALLEY

# Federally Sponsored Demonstration Projects

As previously noted, there are some health care facilities in the SJV that are participants in CMS demonstration projects. The majority of these sites have participated in models developed under the Primary Care Transformation category as part of an FQHC Advanced Primary Care Practice demonstration to test how the patient-centered medical home model can improve quality of care, promote better health, and lower costs. Other models tested were those developed under the Episode-based Payment Initiatives category, which includes an Oncology Care Model and a Bundled Payments for Care Improvement (BPCI) initiative. The BPCI is comprised of four broadly defined models of care, which link payments for the multiple services that beneficiaries receive during an episode of care. Under the initiative, organizations enter into payment arrangements that include financial and performance accountability for episodes of care.

# Demonstration Projects Sponsored by Private Organizations

To meet the challenge of producing a better trained primary care workforce, the Josiah Macy Jr. Foundation launched Professionals Accelerating Clinical and Educational Redesign (PACER), a national professional development program designed to build interprofessional faculty teams equipped to transform their clinical practices and educational programs to prepare their trainees to work together in high performing patient-centered medical homes. The program is funded by the Macy Foundation, the American Board of Family Medicine, the American Board of Internal Medicine, the American Board of Pediatrics, and the Accreditation Council for Graduate Medical Education. <u>www.pcpacer.org</u>.

UCSF Fresno and Community Regional Medical Center (CRMC) are one of nine institutional partnerships chosen to participate in PACER. One of the primary goals of the UCSF Fresno/CRMC PACER team is to transform its primary care residency programs and continuity clinics at CRMC's ambulatory care center into high quality patient-centered medical homes. This program is expected to enhance knowledge and

skills for faculty to teach and provide interprofessional, team-based, health care that is comprehensive and maximizes health outcomes for patients.

Ultimately, it is anticipated that PACER will create a sustainable model of faculty development that evolves over time and can be shared and possibly replicated with other primary care residencies in the SJV. Since this program was just launched in 2016, there is no current information about its success. However, the project will be evaluated by educational researchers at Oregon Health & Science University at the end of the three-year project period.

# III. KEY FINDING

(1) The ACA included a number of provisions affecting the Medicaid and Medicare programs, including appropriating funds for the new Innovation Center within CMS, to test and implement payment and delivery system reforms and new quality incentives. There are several CMS-sponsored innovation models being run at the state level with at least 20 facilities located in the SJV participating in these projects. With the recent proposals in Congress to "repeal and replace" the ACA, the future of the Innovation Center and federal funding for such demonstration projects remain uncertain. Although state funding is not generally available for health care-related demonstration projects, there are other funding opportunities available through foundation grants and professional associations.

#### IV. RECOMMENDATIONS

- (1) With the uncertainty of the ongoing support for the ACA, it is recommended that new federal proposals, particularly related to new financing and care delivery models, be temporarily delayed until there is further clarification from Health and Human Services about the future of federal funding for health care coverage. However, SJV providers, FQHCs, and hospitals should consider joining existing models actively being tested across the region.
- (2) The state and SJV counties should explore opportunities to develop public-private partnerships with private foundations to fund the development and evaluation of innovative models that improve access to care and expand the health workforce in the SJV region. Given the projected health workforce shortages and persistent maldistribution of providers in the San Joaquin Valley, there is a compelling rationale for growth of health professions educational opportunities and improvements in health care delivery that is well-planned and aligned with community needs. To meet these needs, new public and private partnerships, together with a commitment to collaboration and innovation, will be required.

### IV. CONCLUDING COMMENTS

As health professions programs work to train the future workforce and prepare for the ramifications of the possible repeal of the Affordable Care Act, new and ongoing challenges should be expected. Given the projected health workforce shortages and persistent maldistribution of providers in the San Joaquin Valley, there is a compelling rationale for growth of health professions educational opportunities and improvements in health care delivery that is well-planned and aligned with community needs. To meet these needs, new public and private partnerships, together with a commitment to collaboration and innovation, will be required.

# V. ACKNOWLEDGEMENTS

The University of California Office of the President wishes to thank many individuals who made important contributions to this report. To begin, we would like to extend special thanks to California State Assembly member Adam Gray (District 21), for his ongoing support of the University of California's efforts to train a health workforce that meets the needs of the state and the San Joaquin Valley. We are also grateful for the information and perspectives provided by individuals throughout the University of California's health sciences system; state and regional advocacy and professional associations; research centers; community clinics; and pipeline programs. These contributions were valuable in helping us better understand the challenges and opportunities in the region and in developing recommendations the state might consider as it plans for the future. We would specifically like to thank:

# Graduate Medical Education and Advanced Practice Registered Nursing Programs

- Heather M. Young, PhD, RN, FAAN, Associate Vice Chancellor for Nursing & Dean and Professor Betty Irene Moore School of Nursing, UC Davis
- John Heydt, MD, Chief Academic Officer, Borrego Health

# San Joaquin Valley Program in Medical Education (SJV PRIME)

- Ralph Hexter, PhD, Interim Chancellor, UC Davis
- Julie Freischlag, MD, Former Vice Chancellor and Dean, UC Davis School of Medicine
- Mark Servis, MD, Vice Dean for Medical Education, UC Davis School of Medicine
- Dorothy Leland, PhD, Chancellor, UC Merced
- Thomas Peterson, PhD, Provost and Executive Vice Chancellor, UC Merced
- Sam Hawgood, MBBS, Chancellor, UC San Francisco
- Talmadge E. King, Jr., MD, Dean, UCSF School of Medicine
- Catherine Lucey, MD, Executive Vice Dean, UCSF School of Medicine
- Michael Peterson, MD, Associate Dean, UCSF Fresno Medical Education Program
- Cathryn Nation, MD, Associate Vice President, UC Office of the President

# Pipeline Programs

- Katherine Flores, MD, Director, UCSF Fresno- Latino Center for Medical Education and Research
- Bertha A. Dominguez, MS, Associate Director, UCSF Fresno-Latino Center for Medical Education and Research
- John Matsui, PhD, Director & Co-founder, Biology Scholars Program, UC Berkeley
- Neal Schiller, PhD, Senior Associate Dean, Student Affairs and Salma Haider Endowed Chair in Biomedical Sciences, UCR School of Medicine

# **Federally Qualified Health Centers**

- Nataly Diaz, Senior Program Coordinator of Workforce Development, California Primary Care Association
- Cathy Frey, MHA, Chief Executive Officer, Central Valley Health Network

- Mary Renner, Chief Operation Officer, Central Valley Health Network
- Jason Vega, Consultant to the Senior Policy Advisor, Central Valley Health Network
- Beth Malinowski, Deputy Director of Government Affairs, CaliforniaHealth+Advocates

# Telehealth

- Thomas S. Nesbitt, MD, MPH, Interim Vice Chancellor for Human Health Services and Associate Vice Chancellor, Strategic Technologies & Alliances, UC Davis Health System
- Jana Katz-Bell, MPH, Assistant Dean, Interprofessional Programs, UC Davis School of Medicine and Betty Irene Moore School of Nursing
- Kathy Chorba, Executive Director, California Telehealth Resource Center
- Michael Martineau, Program Director, California Telehealth Resource Center
- Daniel Kurywchak, Chief Technology Officer, California Telehealth Network
- Mario Gutierrez, Executive Director, Center for Connected Health Policy
- Mei Wa Kwong, JD, Policy Advisor and Project Director, Center for Connected Health Policy

We would also like to thank Janet Coffman, PhD, Associate Professor, UCSF Healthforce Center and Philip R. Lee Institute for Health Policy Studies, who served as the Principal Investigator for the companion study for this report, *Current & Future Health Professions Workforce Needs in the San Joaquin Valley*. We are grateful to Dr. Coffman and her team, which included Timothy Bates, MPP, Project Manager and Igor Geyn, Research Analyst, for conducting a comprehensive assessment of health workforce needs in the San Joaquin Valley.

The Office of the President gratefully acknowledges the contributions, expertise, and guidance provided by Phyllis A. Guze, MD, Professor of Medicine, Emeritus and former Associate Vice Chancellor, Health Affairs and Executive Dean of the UC Riverside School of Medicine. Dr. Guze was particularly helpful in bringing her recent experiences as a founding member of the UCR School of Medicine leadership team to the discussions and preparation of this report.

We offer our sincere thanks and appreciation to Cathryn Nation, MD, UC Associate Vice President, Health Sciences, whose leadership and commitment to sharing this information as a contribution to the ongoing workforce discussions about the role of California's health professions educational programs in meeting the health care needs of the San Joaquin Valley helped make this report possible. Finally, we would like to acknowledge her UC Health team and express our appreciation and gratitude to Dena Bullard, MHS, Coordinator, Academic Programs and Special Initiatives, Kristian Wright, Project Policy Analyst, and Helen S. Young, MS, Project Policy Analyst, for their invaluable assistance and substantial contributions to the development and writing of this report.

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#### VII. APPENDICES

#### Appendix A:

#### Letter to Assembly Member Adam Gray

#### UNIVERSITY OF CALIFORNIA

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May 27, 2016

The Honorable Adam Gray Assembly Member, District 21 California State Capitol Post Office Box 94249-0021 Sacramento, California 94249-0021

Dear Assembly Member Gray:

We are writing to follow up on our recent meeting to discuss the need to address the long-term health-care needs of San Joaquin Valley residents, including increasing the number of medical professionals practicing in the region. In particular, we welcomed the chance to further discuss the FY 2015-16 State Budget that would fund a study on medical education at UC Merced, and how we might approach it differently in order to maximize the University's impact on health-care outcomes in the Valley. The details of a proposed path forward are provided below.

It is important to begin by highlighting what is already underway at UC Merced to help address the underserved residents of the San Joaquin Valley. UC Merced faculty members and graduate students are already engaged in research that addresses health issues that have an impact on Valley residents. The Merced campus is developing strong programs in public health, including an undergraduate minor and major, which will prepare students to enter the workforce or move on to advanced training in graduate or medical school. UC Merced is also developing a standalone public health Ph.D. program. Meanwhile, several graduate students are pursuing a public health track that focuses on preventing chronic and infectious diseases by working with communities in the region. UC Merced has faculty members in all three schools involved in many aspects of biomedical research, most of it funded through the National Institutes of Health (NIH). As an example, a recently obtained NIH grant includes a partnership with CSU Fresno to bring their graduates into UC Merced Ph.D. degree programs in biomedical and behavioral science.

UC Merced is a partner with the UC Davis School of Medicine and UCSF Fresno in the San Joaquin Valley Program in Medical Education (SJV PRIME). Currently, The Honorable Adam Gray May 27, 2016 Page 2

the program serves to train medical students who want to practice in the Valley and care for underserved communities. The first cohort of students in the program started in 2011 and graduated from the program in 2015. These students are now undergoing residency training, including at UCSF Fresno. There are approximately 27 students currently enrolled in the program and the three campuses involved with SJV PRIME believe we can significantly expand the reach and success of this program with the appropriation of additional resources going forward. Thank you for your past support for SJV PRIME. It has been invaluable.

# UC Study on Improving Health Care Access in the San Joaquin Valley

In order for the University's study to have the scope and type of impact that will truly be meaningful both in the near and long-term, we must bring multiple University resources together to review and make recommendations on how best to address health-care access for San Joaquin Valley residents. With that in mind, the UC Office of the President would propose to conduct a study with the following key elements:

#### Workforce Planning

 Provide an overview and assessment of health workforce needs in the Valley that will establish a baseline from which we can measure the impact of possible new approaches and programs.

#### **Healthcare Delivery**

- Identify opportunities for State or federal demonstration projects that would enable the development of innovative programs to improve access to care (e.g. scope of practice changes and/or new financing and care delivery models).
- Identify specific recommendations for expansion of telemedicine services that will expand the scope of diagnosis and treatment.
- Analyze the feasibility of Federally Qualified Health Center (FQHC) expansion in the region.

#### **Education and Training**

 Identify essential steps and timeline for expanding the current San Joaquin Valley Program in Medical Education (SJV PRIME), pursuant to the AB 133 (budget trailer bill that amends the Budget Act of 2015); and thereafter, the The Honorable Adam Gray May 27, 2016 Page 3

> development of options and timeline for further expansion of medical student enrollment (e.g., development of a branch campus of an existing UC medical school).

- Analyze the potential for expansion of graduate medical education (residency training) and advanced practice nursing programs in the region, given the strong predictive value with respect to a provider's choice of practice location.
- Identify the resource requirements for development of additional pipeline
  programs aimed at increasing the rate at which Valley matriculate into
  health professional schools (e.g., pre-collegiate outreach programs for middle
  and high school students; pre-health academic, research and clinical programs for undergraduates; and post-baccalaureate and conditional admit
  programs for recent college graduates).

Some of this work is already underway and we will now work diligently to complete the rest and return to you with a set of recommendations that may require new partnerships and new investments by UC and the State of California. Although the health care challenges facing the region may be many, the University of California and UC Merced are committed to working with you and your colleagues to overcome these challenges, especially in a region that has been historically underserved.

Sincerely,

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Janet Napolitano President University of California

cc: The Honorable Anthony Cannella Provost Dorr Executive Vice President Stobo Executive Vice President Peacock Associate Vice President Juarez

Northy Leland

Dorothy Leland Chancellor University of California, Merced

#### Appendix B:

### Current and Future Health Workforce Needs in the San Joaquin Valley:

#### **Executive Summary**

# **Executive Summary**

The San Joaquin Valley is one of the fastest growing regions of California, has the largest share of Latinos in the general population of any region in state, and the health status of its residents is poor relative to other regions in the state. The San Joaquin Valley region has a high rate of poverty, and a high percentage of its population is eligible to enroll in Medi-Cal. The region has historically suffered from a shortage of physicians and it may be that other critical segments of the region's health professions workforce also are not adequate to meet the region's needs. This report analyzes current data describing the supply, distribution, and characteristics of health professionals in the region, in addition to the demand for health professionals in the region in order to assess whether the workforce will be adequate to meet the region's future demand for health professionals.

The San Joaquin Valley is defined as encompassing Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties. Findings are presented for physicians (MDs and DOs), physician assistants (PAs), certified nurse midwives (CNMs), certified registered nurse anesthetists (CRNAs), clinical nurse specialists (CNSs), nurse practitioners (NPs), and registered nurses (RNs), as well as behavioral health professionals (clinical psychologists, clinical social workers, marriage and family therapists, licensed counselors, psychiatric technicians, and substance abuse disorder counselors). The report also includes information describing the region's educational pipeline (i.e. training programs) for these professions.

The findings presented in this report are drawn from a variety of sources including California's licensing boards for health professionals, the California Employment Development Department, the Integrated Postsecondary Education Data System, the National Resident Matching Program, associations of health professions schools, and the US Census Bureau. A list of the data sources and the types of information obtained from each source can be found in Appendix B.

#### **Findings**

#### **Current Supply of Health Professionals**

- The San Joaquin Valley region has the lowest ratios of licensed MDs, DOs, NPs, RNs, marriage and family therapists, licensed counselors, and licensed social workers per 100,000 population in California and the second lowest ratios of PAs, CNs and psychologists per capita.
- The per capita ratio of licensed MDs to population in the region falls from 138 to 116 if MDs who are still in training (i.e., residents and fellows) or do not provide patient care are excluded.
- In most behavioral health professions, the per capita ratio of professionals in the San Joaquin Valley is less than half the ratio in California overall.
- Ratios of pre-license behavioral health professionals per 100,000 population are also low.
- Per-capita supplies of health professionals vary widely across the region's counties.
#### **Demographic Characteristics of Health Professionals**

- Physicians in the San Joaquin Valley region are more likely to be Asian or Latino and less likely to be White compared to California overall.
- Despite better representation relative to the state's overall physician workforce, the share of physicians in the region who are Latino is still much lower than the share of Latinos in the general population.
- In California, Latinos are better represented among PAs, NPs, RNs, social workers, and counselors than they are among physicians and psychologists.
- Only one-third of physicians in the San Joaquin Valley are female, whereas NPs, RNs, psychologists, social workers, and counselors are predominantly female.
- Thirty percent of active patient care physicians in the San Joaquin Valley region are over 60 years old.
- Thirty-seven percent of psychologists in the region are over 60 years old.

#### **Pipeline of Trainees in Health Professions**

- There are no medical schools in the San Joaquin Valley and the supply of medical residents in the region is 30% below the statewide average.
- There are no PA programs in the San Joaquin Valley region and there are no doctoral level training programs that focus specifically on preparing graduates to practice clinical or counseling psychology.
- Per capita ratios of trainees in medicine, clinical or counseling psychology, social work, and substance abuse/addiction counseling are low relative to California overall.
- In the San Joaquin Valley, psychiatric technician education programs had the largest number of graduates in 2015, followed by graduates of social work programs.
- In 2015, the region's psychiatric technician education programs produced 43% of all psychiatric technician program graduates in California.
- Females are better represented among recent medical school graduates compared to practicing physicians, while males are better represented among recent nursing school graduates compared to practicing RNs.
- Latinos are better represented among recent graduates of RN education programs, clinical or counseling psychology education programs and social work education programs in the region compared to practicing RNs, counselors, and social workers.
- In California, Latinos are better represented among recent graduates of PA, NP, CNS, RN, psychiatric technician, substance use/addiction counseling, and master's level training programs in clinical or counseling psychology and social work in comparison to graduates of medical schools and doctoral-level training programs in either clinical or counseling psychology or social work.

#### **Future Demand for Health Professionals**

- In both the San Joaquin Valley region and California overall, RNs represent the largest source of projected growth in employment among medical and nursing professions.
- Among medical and nursing professions, the rate of job growth in the San Joaquin Valley is projected to be highest for PAs and NP, but the absolute number of new PA and NP jobs is projected to be much smaller compared to number of new RN jobs.
- The rate of job growth for physicians in the region is projected to be lower than the rate of job growth among PAs, NPs, and RNs.
- Among behavioral health professions, clinical, counseling, and school psychologists are projected to experience the region's largest absolute increase in the number of jobs between 2014 and 2024.
- The behavioral profession with the highest projected rate of job growth varied substantially across counties in the San Joaquin Valley.

#### Conclusion

Findings from this project indicate that the San Joaquin Valley has low ratios of health professionals per 100,000 population in most medical, nursing, and behavioral health professions, relative to California overall and relative to most other regions of the state. This difference is most pronounced for physicians. Psychiatric technicians are a major exception most likely due to the presence of multiple behavioral health and correctional facilities, which are a major source of job opportunities for psychiatric technicians.

The project's findings also raise questions about whether the region will be able to absorb projected increases in the numbers of jobs in health professions and to meet the needs of the region's population. Concerns about ability to meet future workforce needs are most pronounced for physicians and psychologists because 30% of physicians and 37% of psychologists are age 60 or older. In addition, the region has low ratios of trainees to population in medical and behavioral health professions and has no training programs for physician assistants and certified nurse midwives. In addition, Latinos are better represented among recent graduates than among practicing clinicians but the percentages are not at parity with the percentage of Latinos in the general population of the region.

To meet future demand, the San Joaquin Valley will want to consider several strategies including recruitment of health professionals trained outside the region, expanding training opportunities in the region, and preparing young people in the regions to complete training in the health professions. In the short-term, scholarship and loan repayment programs would provide incentives for health professionals trained outside the region to practice in high need areas within the region. Expanding training opportunities in the region would also be helpful because health professionals often prefer to practice in the region in which they trained. Investment in preparing young people in the San Joaquin Valley for careers in the health professionals will be critical over the long run to enable the region to have sufficient numbers of health professionals with racial/ethnic, cultural, linguistic, and socio-economic backgrounds similar to those of the region's population.

## Appendix C:

#### **Glossary of Terms in Graduate Medical Education**

**Direct Graduate Medical Education (DGME):** DGME payments help fund the direct costs of teaching, including salaries and benefits for residents, faculty time and administrative costs to run training programs.

**Fellows:** Physicians who have completed a residency and are pursuing further training in a subspecialty through an accredited specialty-specific program (e.g., cardiology following an internal medicine residency).

**GME Consortia:** Formal associations of medical schools, teaching hospitals, and other organizations involved in residency training, with central support, direction, and coordination to enable members to share and leverage resources and to function collectively.

**Housestaff:** Term often used to refer to all individuals participating in specialty or subspecialty training programs.

**Indirect Medical Education (IME):** IME payments help cover costs unique to teaching such as the use of additional testing and advanced technology from which residents learn, while recognizing that teaching hospitals treat a more complex mix of patients (e.g., in burn units, trauma centers).

**Interns:** Medical school graduates (i.e., individuals who have earned an MD or DO degree) who are in their first year at an accredited residency program. These individuals are also referred to as post-graduate year 1 or "PGY 1" residents (and they do not yet have a license to practice medicine).

**International Medical Graduates (IMG):** Individuals who have graduated from a medical school outside of the U.S., Puerto Rico, or Canada. This also includes U.S. citizens who completed their medical education outside of these countries.

**Residents:** Physicians who have graduated from medical school and are participating at any level of training in an accredited residency training program.

**Subspecialty Training Program**: A structured educational experience following completion of a prerequisite specialty program (typically residency training) in GME designed to conform to the Program Requirements of a particular subspecialty.

**Teaching Health Center GME program (THC GME):** The Affordable Care Act established The Teaching Health Center Graduate Medical Education Program, which provides grants to underwrite the cost of training primary care residents in FQHCs, FQHC Look-Alikes and other community-based clinics that provide care to medically underserved people.

## Appendix D:

## Proposition 56: The California Healthcare, Research and Prevention Tobacco Tax Act of 2016

Language regarding Graduate Medical Education:

(c) Moneys from the CALIFORNIA HEALTHCARE, RESEARCH AND PREVENTION TOBACCO TAX ACT OF 2016 Fund in the amount of forty million dollars (\$40,000,000) annually shall be used to provide funding to the University of California for the purpose and goal of increasing the number of primary care and emergency physicians trained in California. This goal shall be achieved by providing this funding to the University of California to sustain, retain and expand graduate medical education programs to achieve the goal of increasing the number of primary care and emergency physicians in the State of California based on demonstrated workforce needs and priorities.

- (1) For the purposes of this subdivision "primary care" means Internal Medicine, Family Medicine, Obstetrics/Gynecology, and Pediatrics.
- (2) Funding shall be prioritized for direct graduate medical education costs for programs serving medically underserved areas and populations.
- (3) For the purposes of this subdivision all allopathic and osteopathic residency programs accredited by federally recognized accrediting organizations and located in California shall be eligible to apply to receive funding to support resident education in California.
- (4) The University of California shall annually review physician shortages by specialty across the state and by region. Based on this review and to the extent that there are demonstrated state or regional shortages of non-primary care physicians, funds may be used to expand graduate medical education programs that are intended to address such shortages.

#### **Appendix E:**

#### MEMORANDUM OF UNDERSTANDING

Among the UC Davis School of Medicine, UC San Francisco School of Medicine, UCSF Fresno Medical Education Program, UC Merced and the UC Office of the President

This document describes the inter-institutional agreement among the University of California, Davis (UC Davis), the University of California, Merced (UC Merced), the University of California, San Francisco (UCSF), the UCSF Fresno Medical Education Program (UCSF Fresno) and the UC Office of the President (UCOP) to further develop, advance and jointly administer a unique UC PRogram in Medical Education (PRIME) program, hereafter to be referred to as the "UC San Joaquin Valley (SJV) Program in Medical Education (LCME). Consistent with the requirements of the Liaison Committee on Medical Education (LCME), the program will be formally identified (primarily for LCME purposes) as the "UC Davis - San Joaquin Valley Program in Medical Education."

#### History

The Central Valley is one of the fastest growing regions in the State of California. It lags the rest of the state in many socioeconomic and environmental indicators, with some of the highest rates of poverty, un-insurance and poorest air quality in the state and nation. These problems pose persistent threats to the health of communities throughout the region. The Central Valley also ranks very high with respect to the prevalence of many preventable diseases and with respect to shortages of physicians and other health professionals. As the only UC campus in the Central Valley, the location of UC Merced and its designation by the National Institutes of Health (NIH) as a Center of Excellence on Health Disparities, will enable UC Merced to make substantial ongoing contributions toward expanding access to health sciences education; to offer the regional and cultural context necessary to help reduce health disparities in the Central Valley; and to align this work with the education, research and public service missions of the University of California.

From its inception, the leadership and faculty of UC Merced have recognized the need to join regional efforts to improve access to health services and to help improve health outcomes. UC Merced has a plan for developing future health sciences education programs as part of the campus' academic plan. Many of these early efforts began in 2007-2008, and were developed in consultation with the UC Office of the President and other UC academic partners.

To assist with this work, UC Merced retained the services of the Washington Advisory Group (WAG) to develop recommendations to achieve these goals. In light of both the early stages of development of the UC Merced campus and the state's significant financial problems, the WAG report (finalized in December 2008) recommended a three-step approach to developing the infrastructure necessary for health sciences instruction and a potential step-wise path toward the possible future development of an independent LCME-accredited School of Medicine at UC Merced.

In brief, the 2008 WAG report recommended that planning occur in three distinct phases whose duration would be contingent upon availability of sufficient institutional and financial resources necessary for continuing development. These three steps can be briefly summarized as follows:

The initial step called for establishment of a pre-baccalaureate biomedical education track for undergraduates of exceptional promise to pursue a baccalaureate degree that would emphasize the health needs of the Central Valley and prepare students for advanced study in the health sciences, including the study of medicine at UC Merced or elsewhere. It was recommended that special consideration be given to Valley residents from disadvantaged and culturally diverse backgrounds. The intent of this recommendation was "...to enhance the likelihood that UC Merced students would return to the Valley to join the region's health professions workforce."

Steady progress towards meeting this goal has been ongoing and enhanced by a number of major achievements, including: the designation by the NIH as a Center of Excellence on Health Disparities; establishment of the Health Sciences Research Institute (HSRI); and development of an undergraduate minor concentration and undergraduate major in Public Health (established in 2014), which will help prepare future UC Merced graduates to enter the workforce or enroll in graduate or health professional degree programs.

The second stage suggested that consideration be given to the development of a dedicated medical education program or "branch campus" that could be developed in conjunction with an established UC School of Medicine." This next step - also contingent upon availability of sufficient resources - was described as a program to which a select cohort of approximately 16-24 students could be admitted that would include, as part of the medical education curriculum, an emphasis on regional health disparities and the health needs of various groups and communities in the Central Valley.

The long-term and final stage of development proposed the formation of "...an independent LCMEaccredited medical school that offered an innovative approach to medical education." This was viewed as a mechanism that could strengthen the campus infrastructure in terms of further development of its basic sciences programs, while concurrently building experience in medical education, with UC Merced functioning first as an academic medical education partner, and/or then potentially functioning as a future "branch campus," of an existing UC school. It was noted at that time, that UC Riverside had a long-standing partnership with the School of Medicine at UC Los Angeles, prior to its transitioning to an independent medical school that admitted its first class of 50 students in 2013.

As a way for UC Merced to begin to build partnerships with existing UC medical schools and facilitate its involvement and introduction to academic medicine, UC Merced partnered with the UC Davis School of Medicine to help develop a new PRIME program, focusing on the health needs of the Central Valley. Building on UCD's existing Rural PRIME program, SJV PRIME (previously referred to as the UC Davis - UC Merced San Joaquin Valley Program in Medical Education), drew upon many of the strengths of UC Davis, including its established education and research programs.

This new PRIME program was launched by the UC Davis School of Medicine, in partnership with UCSF-Fresno, and led to the admission of the first class of six students in fall 2011. Enrolled students complete their basic sciences/pre-clinical education at UC Davis; then complete all of their required third-year core clerkships at UCSF Fresno (with students in prior classes then having options to choose to complete their fourth year at UCSF Fresno or at UC Davis in Sacramento). Going forward, efforts will be made to expand educational opportunities for students to learn and work in the Central Valley with increased time across the educational continuum.

UCSF Fresno's 40-year history in medical education, together with its longstanding community, affiliations with teaching hospitals in the region, and advocacy for improving the health and welfare of the population, continue to make UCSF Fresno a natural and strong educational partner for this program.

From its inception, and as future plans develop, the goal of the program will be to recruit and prepare bright and dedicated students for future careers in medicine in the San Joaquin Valley. At the time the program was launched, it was also made clear that the program was not a "branch campus" and was not to be referred to as such by any of the parties participating in the program. It was recognized by all UC partners that a "branch campus" is a specific LCME designation that requires strong institutional commitment, including the investment of substantial, ongoing resources that were clearly beyond those available at the start of this program.

By renewing and updating this new three-year MOU and by jointly pursuing next steps to develop and expand this program, the parties recognize that ongoing consultation must include well-qualified faculty and dedicated leadership from all UC partners, including UC's three campus academic partners, as well as by leadership from the UC Office of the President (with UC Health leading these efforts).

#### Program Structure: General Roles and Responsibilities of UC Partners

The UC Davis School of Medicine: The SJV PRIME Program was established under the auspices of the UC Davis School of Medicine for purposes of LCME accreditation and degree-granting authority. UC Davis is thus the institution with primary responsibility for the program under the direction of Acting Chancellor Ralph Hexter, with delegation of responsibility to the Vice Chancellor and Dean of the UC Davis School of Medicine, Dr. Julie Freischlag. The UC Davis School of Medicine will continue to be the primary entity to deliver the basic sciences/pre-clinical education to students admitted to and enrolled in the SJV PRIME program. UC Davis is also responsible for governance of the program as UCO carries the direct reporting responsibility to the LCME and is responsible for meeting the standards required for accreditation.

All students admitted to SJV PRIME must first qualify for admission to the UC Davis School of Medicine. Faculty from the three partnering institutions (UC Davis, UCSF Fresno, and UC Merced) will participate in the admissions process for the SJV PRIME program. Final admissions decisions, however, will be the responsibility of UC Davis. Although UC Davis will work with the partner campuses to incorporate learning opportunities specifically related to the Central Valley into the curriculum, development and oversight of the curriculum and assuring that students meet requirements for graduation will remain the responsibility of UC Davis. Graduating students will thus continue to earn their Doctor of Medicine (MD) degrees from the UC Davis School of Medicine.

<u>UC San Francisco -Fresno (UCSF Fresno)</u>: UCSF Fresno will remain the principal site for core clerkships during the third year of medical school. As previously noted, future efforts will be made to enable fourth year students to complete more of their fourth year clinical curriculum in the Central Valley. All of the UC partners acknowledge the importance of students receiving clinical training in the Valley to support and nurture their interests in practicing there.

While planning with respect to the fourth year is underway and will evolve over time, there is recognition by the partners that SJV PRIME students will benefit from increased time and increased exposure to a variety of health care facilities and clinical settings in the Central Valley. Clinical training sites will continue to be approved through a formal process with approved affiliation agreements in place prior to students being assigned to those sites. These activities are consistent with the agreement among the partners that students will benefit by having more continuity and experience in the Central Valley, optimally including some portion of each of their four years in medical school.

<u>UC Merced</u>: UC partners will work with UC Merced to expand learning opportunities and enhance the educational experiences for the students in the SJV PRIME program. All parties recognize the importance of developing a medical school curriculum that provides learners with educational experiences relevant

to the social, political, and cultural histories of the San Joaquin Valley. They also recognize the need to incorporate exposure to, and interaction with, San Joaquin Valley community members and organizations as part of the SJV PRIME educational experience. UC Merced faculty are well positioned to play an important role in this regard. While specific activities and responsibilities are under active discussion and will be developed and formalized, a wide range of possibilities have been discussed with UC Merced leadership. For example, UC Merced faculty will continue to work to identify and provide research opportunities for SJV PRIME students through the HSRI, particularly in areas such as community health and health disparities, thus exposing learners to research that addresses key health challenges in the region. Other new roles for UC Merced that have been discussed range from increased course offerings for (and outreach among) pre-medical students, to a lecture series about health care in the region as well as expanded Master's degree opportunities for SJV PRIME students who wish to do a fifth year.

#### **Financial Responsibility**

As the responsible LCME medical school, UC Davis holds primary institutional and financial responsibility for the UC Central SJV PRIME program. New budget provisions included in Assembly Bill 133, the budget trailer bill that amended the Budget Act of 2015, were signed by the Governor on March 1,2016. This action commits \$1.855M annually to expand total enrollment to 48 students (12 students per year across the four-year curriculum). This state funding will be a valuable and essential resource for providing the ongoing funding for faculty and staff, as well as for providing some modest support for programmatic needs requiring coordination among sites.

<u>Principles guiding allocation of state resources:</u> The following guidelines were developed and approved by all members of the San Joaquin Valley Work Group and will be utilized for purposes of allocating state funds for SJV PRIME:

- (1) State support will follow the actual number of enrolled SJV PRIME students in each year of the program to the educational site where they are located (at a rate of \$35,000 per student per year). At the point UC Merced contributes directly to the SJV PRIME curriculum, recommendations regarding appropriate allocation of funding will be identified and discussed by the partners, including recommendations to leadership in the Office of the President.
- (2) For the duration of the MOU, allocation of state resources will be managed by the Office of the President (UC Health) and adjusted annually based upon review of total enrollment and contingent upon ongoing educational program arrangement(s).
- (3) Professional Degree Supplemental Tuition (PDST) will be collected by the UCD School of Medicine for SJV PRIME students.
- (4) PDST (net of financial aid) will be allocated for enrolled students as follows:

Students in Years One and Two - PDST will be retained by the UCD School of Medicine.

Students in Year Three - POST will be allocated to UCSF Fresno for SJV PRIME students.

Students in Year Four - While plans for year four are currently under discussion and development, the goal will be to have students begin to complete more of their fourth year clinical curriculum in the region. Annual funding allocations will be determined by the partners based upon the role and responsibility of UC partners and affiliated clinical sites.

(5) Annual state support that exceeds the total budgeted number of enrolled students will be subject to further discussion and approval by the Office of the President. The Office of the President is requested to seek agreement from the state to retain the full annual allocation until full enrollment is reached (i.e., 48 FTE students), with distribution of the balance distributed to various partnering UC sites in proportion to their role and contribution(s). For example, as part of the deliberations and discussions of the SJV PRIME Workgroup, the partners identified a number of important infrastructure needs for the program. Among these priorities are needs to provide funding for dedicated staff support at UCSF Fresno to support the program and to provide coordination of student services.

In addition to the core revenue sources identified above, the parties have agreed to work together (and/or coordinate efforts) to seek grants and scholarship funds to support the SJV PRIME program and its students.

#### **Program Oversight**

An advisory group for the SJV PRIME program will be created and comprised of leadership representation from UC Davis, UC San Francisco, UCSF Fresno, UC Merced and the UC Office of the President. This group will be referred to as the UC Central SJV PRIME Advisory Group, and will be convened by the Office of the President (UC Health). This group will meet semi-annually to monitor progress, facilitate decision-making and keep leadership at UC Davis, UCSF, UCSF Fresno and UC Office of the President leadership informed.

#### **Effective Date and Signature**

This MOU shall be effective upon the signatures of the authorized officials from UC Davis, UC Merced, UC San Francisco and UC San Francisco Fresno, and the UC Office of the President. The new MOU shall be in effect from September 1, 2016, to June 30, 2019. The agreement may be renewed with the mutual agreement of the parties. All parties indicate their agreement with this MOU by their signatures. This MOU will be renewed every three years and amended as needed, subject to agreement of UC academic partners and the UC Office of the President.

In concurrence:

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John Stobo, MD Executive Vice President UC Health, Office of the President

Ralph Hexter, PhD Acting Chancellor UC Davis

Julie Freischlag, MD Vice Chancellor and Dean School of Medicine, UC Davis

n M.d

Michael Peterson, MD Associate Dean UCSF Fresno Medical Education Program

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Cathryn Nation, MD Associate Vice President UC Health, Office of the President

Dorothy Leland, PhD Chancellor UC Merced

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Thomas Peterson, PhD Provost and Executive Vice Chancellor, UC Merced

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Sam Hawgood, MBBS Chancellor UC San Francisco

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Talmadge E. King, Jr., MD Dean UCSF School of Medicine

## Appendix F:

#### UC Berkeley Biology Scholars Program

#### Biology Scholars Program (http://bsp.berkeley.edu/)

The Biology Scholars Program (BSP) is an undergraduate program at <u>UC Berkeley</u> designed to promote the success of students from groups historically underrepresented in the biological sciences. Funded by the Howard Hughes Medical Institute and UC Berkeley, the goal of BSP is to increase the diversity of Berkeley undergraduates who succeed in their biology majors and related careers. Although most BSP members are biology majors (70%), some choose other majors (e.g., psychology, social welfare, mathematics, political science) predominantly leading to careers in medicine or other health professions that will allow them to express their interest in biology (e.g., public policy, public health). Program components include academic workshops and study groups; professional seminars; research internships; and community service opportunities.

There are currently 400 BSP students at Berkeley – 60% are underrepresented minorities (URM) and 80% are low-income, first-generation college attendees. When compared with the majority of students (White and Asian) not in BSP, URM BSP students graduate with biology degrees in equivalent percentages and with equivalent exit UC GPAs, thus closing the minority-majority performance gap in spite of entering UCB with lower high school GPAs and lower total SAT scores (Matsui et al, 2003). Approximately 85% of URM BSP students gain admission to medical school compared to 55% of all Berkeley pre-meds, and 35% of URM students not in BSP.

BSP's annual budget is approximately \$800,000, which goes to support salary and benefits for program staff, program events, tutoring, and more. With 400 students, average cost per student per year is approximately \$2,000. These students do not receive a stipend while participating in the program. On a separate note, BSP offers an undergraduate research program where student participants (16) receive a stipend of \$4,000 per year. Approximately \$100,000 per year is needed to support the research component of the program.

#### Appendix G:

#### **UC Riverside School of Medicine Pipeline Programs**

While UC Riverside (UCR) is located south of the SJV (in the Inland Empire), it is one of the most ethnically diverse research universities in the nation. The population in the Inland Empire is similar to the SJV in size, demographics, and lack of health care providers. The recently developed UCR School of Medicine (SOM) aims to serve Inland Southern California by training a diverse workforce of physicians and developing innovative research and health delivery programs to improve the health of medically underserved communities in that region. The UCR SOM has numerous health professional pipeline programs. The cost to administer these programs is approximately \$650,000 annually. (https://medschool.ucr.edu/pipeline\_programs.html)

- Medical Leaders of Tomorrow offered for the <u>first time in 2013</u>, this one week summer residential program at UCR for 40 rising 10<sup>th</sup> graders includes interactive classroom activities to promote interest in science and medicine, mentoring provided by staff, faculty, physicians and college students, the creation and presentation of community health projects by participants, and parent workshops on financial aid and college admissions.
- Health Sciences Partnership a collaboration between UCR and 10 area high schools; mentor teams comprised of UCR undergraduate health science students, post-baccalaureate students and medical students provide one-on-one or small group counseling and mentoring to 690 high school students, most of whom are in Health Academy or special after school programs; mentor teams visit these students in their classrooms presenting information on college life, study skills, health careers, medical school, and facilitating problem-based learning (PBL) activities; tours of UCR and SOM are provided to these high school groups.
- Future Physician Leaders (FPL) this is a lifelong mentorship program for students interested in becoming physicians and being leaders in service to underserved communities. The program has three components, which take place each summer: Leadership Lecture Series, Summer Physician Shadowing Rotations and Community Service/Community Health Projects. Student interest in participating in the program continues to be high with application numbers increasing from year to year. The program is continuously enhanced to provide students with new ways to provide health education (e.g., participating in the UPS Wellness Fair), and to gain exposure to hands-on health care (e.g., workshops for CPR certification), and leadership skill enhancement (e.g., The 7 Habits of Highly Effective People workshop). Between 150-200 high school or college students from the Riverside-San Bernardino, Coachella Valley, and Temecula areas participate in the seven-week summer program each year. During the academic year, FPL members are invited to special mentorship events at the medical school (such as the annual speed mentoring dinner, special seminars, and open house activities).
- FastStart an intensive 5-week residential summer program for as many as 36 socioeconomically and/or educationally disadvantaged incoming UCR freshmen. Students are provided with daily instruction in mathematics, biology, and chemistry; workshops in study skills, campus resources, ethics, and other enrichment opportunities; and visit local health care facilities and see doctors at work. The opportunity to live on campus provides the social acculturation essential to assist these

students transition successfully into the academic year and quickly assume the academic discipline needed for success in the first year science coursework. *FastStart* students also receive critical mentoring from resident advisors, faculty and staff. This program was recognized as an "Exemplary Practice Program" by the Public Health Institute's "Connecting the Dots" Initiative (2008).

- Community College Outreach Program (CCOP) this program represents outreach to local community colleges to provide transfer workshops, UCR campus visits, individual and group advising, and access to the MSP resources once students transfer to UCR (MSP is described below). Outreach activities are delivered by a team of MSP faculty, staff and students at a number of regional community colleges, including Riverside Community College, Moreno Valley Community College, College of the Desert, Mt. San Antonio Community College, and San Bernardino Community College.
- Medical Scholars Program (MSP) a comprehensive learning community designed to provide academic, personal and professional development support for ~200 disadvantaged students per year in the sciences to increase graduation rates and promote entrance into medical school or other health profession postgraduate programs. MSP utilizes holistic mentoring and advising approaches to develop personalized academic plans based on student's academic preparation, outside responsibilities, and career plans. MSP also provides key resources (e.g., study groups and academic coaches for gateway science courses, peer mentorship and positive encouragement by staff and faculty) at critical transition points in the student's academic career. Professional and career development counseling are promoted to inspire leadership and a sense of community service. This program was also recognized as an "Exemplary Practice Program" by the Public Health Institute's "Connecting the Dots" Initiative (2008).
- Pre-Medical Post-Baccalaureate Program (PPP) recruited 11 disadvantaged students in 2015 who have strong interpersonal skills and a passion to help the underserved, but who need assistance in improving their science coursework and performance on the MCAT. PPP provides intensive MCAT preparation during the summer, followed by enrollment in upper division science courses at UCR during the academic year. PPP students also participate in clinical volunteer activities and attend seminars related to health care topics, such as health care disparities. They receive personalized advising and counseling to prepare for the medical school application process.
- Mini-Medical School (MMS) this program was designed to train students on how to deliver meaningful health education to medically underserved communities in the Inland Empire. Teams of UCR undergraduate, post-baccalaureate and medical school students collaborate on creating presentations on health topics to the general public in different venues (public schools, boys and girls clubs, health fairs, etc.). Topics include information on various medical conditions (e.g., diabetes, skin cancer), demonstrations on a practical way to shop for healthy food alternatives in the local neighborhood, accessing health insurance, improving health literacy, etc. Currently, there are 165 students registered for 27 different topics. Partnerships with multiple health entities and civic organizations have been arranged.
- K-12 Outreach Program this K-12 program is a new partnership between the UCR SOM and schools in the San Bernardino Unified School District. The partners are San Bernardino High School (SBHS), Arrow View Middle School (AVMS) and Riley Elementary School (RES). These schools are feeder schools to each other which help create a unique vertical mentoring relationship that is

intended to become sustainable and trackable. The program seeks to encourage primary and secondary school students and their families to explore, experience and demystify higher education and professional medical careers. About 20 medical school and six post-baccalaureate students will volunteer as a 'family team' to mentor 12 selected high school students from SBHS, who will in turn mentor about 20 middle school students at AVMS, and together these students will directly mentor about 35 elementary school students (one class at RES). A community advisory board consisting of parents, SBHS alumni and administrators has been formed. This pilot program is anticipated to become a model for expansion with other local K-12 schools.

- Health Coaches Program this program was piloted with Riverside County Regional Medical Center in the fall of 2013 with eight students, and currently has been expanded to more than 20 students. These students participate in a variety of clinics of RCRMC where they work with the clinic staff to provide health education and motivational coaching for patients struggling with obesity, diabetes, hypertension, smoking, etc. The students spend at least eight hours per week at each clinic and must commit for at least one full academic year; the summer program requires the coaches to spend at least 20 hours per week. This program is working very well and there are plans to expand the number of coaches and clinics participating.
- Health Professions Advising Center (HPAC) currently housed under the Office of Undergraduate Education, HPAC provides individual and group health professions advising and support for students who aspire to graduate and/or to pursue graduate programs in the health professions. Two professional staff and peer mentors guide students as they plan their pre-health professions course work, health related experiences, service work, and research in preparation for applying to programs. The UCR SOM took responsibility for creating this center five years ago and transformed this center into the main health professions advising office for the entire UCR campus. Although this office assists students who are interested in any health profession, HPAC serves as the main office for pre-medical student advising and a critically important pipeline for future UCR SOM medical students.

# Appendix H:

## Federally Qualified Health Center Clinic Sites in the San Joaquin Valley

FQHC Organization	Site Name	Street Address	City	Zip Code	County
	Tulare Community Health Clinic	1101 N Cherry St	Tulare	93274	Tulare
	Tulare Community Health Clinic	737 W Bardsley Ave	Tulare	93274	Tulare
	Tulare Community Health Clinic	1203 N Cherry St	Tulare	93274	Tulare
Altura Contors	Tulare Community Health Clinic	600 N Cherry St	Tulare	93274	Tulare
For Health	Tulare Community Health Clinic	16686 Road 168	Woodville	93257	Tulare
For health	Tulare Community Health Clinic, Inc.	1186 Leland Ave	Tulare	93274	Tulare
	Tulare Community Health Clinic - South Tulare	3035 E Bardsley Ave	Tulare	93274	Tulare

FQHC Organization	Site Name	Street Address	City	Zip Code	County
	Aria Community Health Center	140 C St	Lemoore	93245	Kings
	Aria Community Health Center	1000 Skyline Blvd	Avenal	93204	Kings
Avenal	Aria Community Health Center AMC	148 E Kings St	Avenal	93204	Kings
Community Health Centers	Aria Community Health Center - Mobile 2	1000 Skyline Blvd	Avenal	93204	Kings
	Aria Community Health Center Riverdale	3554 W Mount Whitney Ave	Riverdale	93656	Fresno
	Avenal Community Health Center	1000 Skyline Blvd	Avenal	93204	Kings

FQHC Organization	Site Name	Street Address	City	Zip Code	County
	Camarena Health	401 Trinity Ave	Chowchilla	93610	Madera
	Camarena Health	505 E Almond Ave	Madera	93637	Madera
Camarena	Camarena Health	49169 Road 426	Oakhurst	93644	Madera
Health	Camarena Health	344 E 6th St	Madera	93638	Madera
	Camarena Health A Street	124 S A St	Madera	93638	Madera

FQHC Organization	Site Name	Street Address	City	Zip Code	County
Clinica Sierra Vista	34th Street Community Health Center	2000 Physicians Blvd	Bakersfield	93301	Kern
	Arvin Community Health Center	1305 Bear Mountain Blvd	Arvin	93203	Kern

FQHC Organization	Site Name	Street Address	City	Zip Code	County
	Baker Street Village Community Health Center	1015 Baker St	Bakersfield	93305	Kern
Clinica Sierra	Central Bakersfield Community Health Center	301 Brundage Ln	Bakersfield	93304	Kern
Vista (continued)	Clinica Sierra Vista Mobile Health Services	815 Martin L King Blvd	Bakersfield	93307	Kern
	Delano Community Health Center	1508 Garces Hwy	Delano	93215	Kern
	Divisadero Community Health Center	145 N Clark St	Fresno	93701	Fresno
	East Bakersfield Community Health Center	815 Martin Luther King Blvd	Bakersfield	93307	Kern
	East Bakersfield Dental Clinic	1125 E California Ave	Bakersfield	93307	Kern
	East Niles Community Health Center	7800 Niles St	Bakersfield	93306	Kern
	Easton Community Health Center	5784 S Elm Ave	Fresno	93706	Fresno
	Elm Community Health Center	2740 S Elm Ave	Fresno	93706	Fresno
	Elm Dental Center	2756 S Elm Ave	Fresno	93706	Fresno
	Elm Women's and Pediatric Community Health Center	2760 S Elm Ave	Fresno	93706	Fresno
	Family Health Center	1611 1st St	Bakersfield	93304	Kern
	Frazier Mountain Community Health Center	704 Lebec Rd	Lebec	93243	Kern
	Fresno Mobile Unit	4498 N Brawley Ave	Fresno	93722	Fresno
	Garland Community Health Center	3727 N 1st St	Fresno	93726	Fresno
	Gaston Middle School Health And Wellness Center	1120 E Church Avenue	Fresno	93706	Fresno
	Greenfield Community Health Center	9001 S H St	Bakersfield	93307	Kern
	Kern Mobile Unit	705 S Union Ave	Bakersfield	93307	Kern
	Kern River Health Center	67 Evans Rd	Wofford Heights	93285	Kern
	Kern Valley Medical Center	6310 Lake Isabella Blvd	Lake Isabella	93240	Kern
	Lamont Community Health Center	8787 Hall Rd	Lamont	93241	Kern
	McFarland Community Health Center	217 W Kern Ave	McFarland	93250	Kern

FQHC Organization	Site Name	Street Address	City	Zip Code	County
	North Fine Community Health Center	1945 N Fine Ave	Fresno	93727	Fresno
Clinica Siama	North Of The River Community Health Center	2525 N Chester Ave	Bakersfield	93308	Kern
Vista	Old Town Kern Community Health Center	234 Baker St	Bakersfield	93305	Kern
(continued)	Orange And Butler Community Health Center	1350 S Orange Ave	Fresno	93702	Fresno
	Regional Medical Community Health Center	2505 E Divisadero St	Fresno	93721	Fresno
	South Bakersfield Community Health Center	2400 Wible Rd	Bakersfield	93304	Kern
	West Delano Dental Center	441 Diaz Ave	Delano	93215	Kern
	West Fresno Community Health Center	302 Fresno St	Fresno	93706	Fresno
	West Shaw Community Health Center	4739 W Shaw Ave	Fresno	93722	Fresno

FQHC Organization	Site Name	Street Address	City	Zip Code	County
	Community Medical Center	2003 E Mariposa Rd	Stockton	95205	San Joaquin
	Community Medical Centers - California Street	230 N California St	Stockton	95202	San Joaquin
	Community Medical Centers - Channel	701 E Channel St	Stockton	95202	San Joaquin
	Community Medical Centers - Hammer	1721 E Hammer Ln	Stockton	95210	San Joaquin
Community	Community Medical Centers - Lodi	2401 W Turner Rd	Lodi	95242	San Joaquin
Medical	Community Medical Centers - Manteca	200 Cottage Ave	Manteca	95336	San Joaquin
Centers, inc.	Community Medical Centers - Mariposa Road	2015 E Mariposa Rd	Stockton	95205	San Joaquin
	Community Medical Centers, E. March Lane	1801 E. March Ln	Stockton	95210	San Joaquin
	Community Medical Centers, Gleason House	423 S San Joaquin St	Stockton	95203	San Joaquin
	Community Medical Centers, Tracy	730 N Central Ave	Tracy	95376	San Joaquin
	Community Medical Centers, Waterloo	1031 Waterloo Rd	Stockton	95205	San Joaquin

FQHC Organization	Site Name	Street Address	City	Zip Code	County
	Family HealthCare Network	1107 W. Poplar Avenue	Porterville	93257	Tulare
	Family HealthCare Network	33025 Road 159	Ivanhoe	93235	Tulare
	Family HealthCare Network	41651 Sierra Dr	Three Rivers	93271	Tulare
	Family HealthCare Network	12586 Avenue 408	Orosi	93647	Tulare
	Family HealthCare Network	400 E Oak Ave	Visalia	93291	Tulare
	Family HealthCare Network	730 N Farmersville Blvd	Farmersville	93223	Tulare
	Family HealthCare Network	201 E Lakeview Ave	Woodlake	93286	Tulare
Family	Family HealthCare Network	1133 W Poplar Ave	Porterville	93257	Tulare
HealthCare	Family HealthCare Network	31180 Road 72	Goshen	93227	Tulare
Network	Family HealthCare Network	9416 Road 238	Terra Bella	93270	Tulare
	Family HealthCare Network	401 E School Ave	Visalia	93291	Tulare
	Family HealthCare Network - Hanford	329 W 8th St	Hanford	93230	Kings
	Family HealthCare Network - N. Bridge	501 N Bridge St	Visalia	93291	Tulare
	Family HealthCare Network - Springville	35800 Hwy190	Springville	93265	Tulare
	Family HealthCare Network - Tulare	263 S. West Street	Tulare	93274	Tulare

FQHC Organization	Site Name	Street Address	City	Zip Code	County
	Golden Valley Health Center	401 Lesher Dr	Merced	95341	Merced
	Golden Valley Health Center	127 El Portal Dr	Merced	95340	Merced
	Golden Valley Health Center	200 C St	Patterson	95363	Stanislaus
Golden Valley	Golden Valley Health Center	1130 6th St	Modesto	95354	Stanislaus
Health Centers	Golden Valley Health Center - 6th St Modesto	1114 6th St	Modesto	95354	Stanislaus
	Golden Valley Health Center - Dos Palos	1405 California Ave	Dos Palos	93620	Merced
	Golden Valley Health Center - Gustine-Newman	637 Merced St	Newman	95360	Stanislaus
	Golden Valley Health Center - Los Banos	821 Texas Ave	Los Banos	93635	Merced
	Golden Valley Health Center - Planada	9235 E Broadway St	Planada	95365	Merced
	Golden Valley Health Center - Riverbank	4150 Patterson Rd	Riverbank	95367	Stanislaus

FQHC Organization	Site Name	Street Address	City	Zip Code	County
	Golden Valley Health Center - Turlock	1200 W Main St	Turlock	95380	Stanislaus
	Golden Valley Health Center - W. Childs Merced	847 W Childs Ave	Merced	95341	Merced
Golden Valley	Golden Valley Health Center – Women's Health-Merced	797 W Childs Ave	Merced	95341	Merced
fealth Centers (continued)	Golden Valley Health Center- Florida Ave. Modesto	1510 Florida Ave	Modesto	95350	Stanislaus
	Golden Valley Health Center- Hammond St. Modesto	1121 Hammond St	Modesto	95351	Stanislaus
	Golden Valley Health Center-Le Grand	13161 Jefferson St	Le Grand	95333	Merced
	Golden Valley Health Centers	2101 Tenaya Dr	Modesto	95354	Stanislaus
	Golden Valley Health Centers - Ceres	2760 3rd St	Ceres	95307	Stanislaus
	Golden Valley Health Centers - Turlock	1141 N Olive Ave	Turlock	95380	Stanislaus
	Golden Valley Health Centers - West I St. Los Banos	725 W I St	Los Banos	93635	Merced
	Golden Valley Health Centers- Las Vegas St-Modesto	1717 Las Vegas St	Modesto	95358	Stanislaus
	Golden Valley Health Center- Westley	301 Howard Rd	Westley	95387	Stanislaus

FQHC Organization	Site Name	Street Address	City	Zip Code	County
Livingston Community Health	Hilmar Community Health Center	7970 Lander Ave	Hilmar	95324	Merced
	Livingston Community Health Services	1140 Main St	Livingston	95334	Merced

FQHC Organization	Site Name	Street Address	City	Zip Code	County
	Omni Family Health	3409 Calloway Dr	Bakersfield	93312	Kern
Omni Family	Omni Family Health	277 E Front St	Buttonwillow	93206	Kern
Health	Omni Family Health	21138 Paso Robles Hwy	Lost Hills	93249	Kern
	Omni Family Health	1001 Main St	Delano	93215	Kern
	Omni Family Health	2101 7th St	Wasco	93280	Kern
	Omni Family Health	1100 4th St	Taft	93268	Kern
	Omni Family Health	320 James St	Shafter	93263	Kern

FQHC Organization	Site Name	Street Address	City	Zip Code	County
Omni Family Health (continued)	Omni Family Health	655 S Central Valley Hwy	Shafter	93263	Kern
	Omni Family Health	1215 Jefferson St	Delano	93215	Kern
	Omni Family Health	525 Roberts Ln	Bakersfield	93308	Kern
	Omni Family Health	161 N Mill St	Tehachapi	93561	Kern
	Omni Family Health	1133 Chelsea St	Ridgecrest	93555	Kern
	Omni Family Health	1014 Calloway Dr	Bakersfield	93312	Kern
	Omni Family Health	4600 Panama Ln	Bakersfield	93313	Kern
	Omni Family Health	4131 Ming Ave	Bakersfield	93309	Kern
	Omni Family Health	210 N Chester Ave	Bakersfield	93308	Kern

FQHC Organization	Site Name	Street Address	City	Zip Code	County
United Health Centers Of The San Joaquin Valley	United Health Centers Of The San Joaquin Valley	121 Barboza St	Mendota	93640	Fresno
	United Health Centers Of The San Joaquin Valley	2502 Jensen Ave	Sanger	93657	Fresno
	United Health Centers Of The San Joaquin Valley	517 S Madera Ave	Kerman	93630	Fresno
	United Health Centers Of The San Joaquin Valley	1560 E Manning Ave	Reedley	93654	Fresno
	United Health Centers Of The San Joaquin Valley	6425 W Bowles Ave	Raisin City	93652	Fresno
	United Health Centers Of The San Joaquin Valley	1209 Whitley Ave	Corcoran	93212	Kings
	United Health Centers Of The San Joaquin Valley	1270 N Lemoore Ave	Lemoore	93245	Kings
	United Health Centers Of The San Joaquin Valley - Earlimart	476 E Washington Ave	Earlimart	93219	Tulare
	United Health Centers Of The San Joaquin Valley	16928 11th St	Huron	93234	Fresno
	United Health Centers Of The San Joaquin Valley – Orange	445 11th St	Orange Cove	93646	Fresno
	United Health Centers Of San Joaquin Valley - Parlier	650 S Zediker Ave	Parlier	93648	Fresno

FQHC Organization	Site Name	Street Address	City	Zip Code	County
Valley Health Team, Inc.	Clovis Community Health Center	180 W Shaw Ave	Clovis	93612	Fresno
	Kerman Dental Center	942 S Madera Ave	Kerman	93630	Fresno
	Kerman Health Center	449 S Madera Ave	Kerman	93630	Fresno
	Kerman Unified School District Community Health Center	702 S 8th St	Kerman	93630	Fresno
	Sablan Health Center	927 O St	Firebaugh	93622	Fresno
	San Joaquin Health Center	21890 W Colorado Ave	San Joaquin	93660	Fresno
	Valley Smiles	21890 W Colorado Ave	San Joaquin	93660	Fresno

## Appendix I:

#### **Glossary of Terms in Telehealth**

**Distant Site (see hub site):** The site at which a provider is located, while delivering care via telehealth. This is the term is used by The Centers for Medicare and Medicaid Services (CMS) with respect to telehealth services.

Hub Site (see distant site): The location from which specialist or consultative telehealth services originate.

**Live video:** The real time interaction between a provider and a patient using audio-visual telecommunications technology.

**Mobile health (mHealth):** The provision of health care services using mobile devices, such as smart phones, tablets, and personal digital assistants.

**Originating Site (see spoke site):** The CMS defines this as the location where the patient is located when receiving a telehealth consultation.

**Remote Patient Monitoring (RPM):** The collection of a range of health data, such as heart rate or blood pressure that allow distant providers at a distant site to monitor a patient's condition.

**Spoke Site (see originating site):** The site where the patient is located during a telehealth consultation, or where the provider requesting consultative services is located.

**Store-and-forward:** The transmission of recorded health histories, usually in the form of images or prerecorded videos that are sent to a provider for clinical evaluation (e.g., x-rays, MRIs, video-exam clips)

**Telehealth:** California law defines telehealth as the mode of delivering health care services and public health by utilizing information and communication technologies to facilitate the diagnosis, consultation, treatment, education, care management and self-management of a patient's health care while the patient is at the originating site and the health care provider is at the distant site.

**Telehealth Resource Centers (TRCs):** Federally designated centers that provide assistance, education, and training to organizations and individuals who are actively interested in providing care via telehealth.

**Telemedicine:** According to the CMS, telemedicine is the use of medical information exchanged from one site to another using interactive telecommunications equipment.

**Telepresenter:** An individual trained to use of telehealth equipment that may be needed to facilitate the delivery of telehealth services at an originating or spoke site.

#### Appendix J:

## Partial List of Sites with Telehealth Activities in San Joaquin Valley\*

Adventist (Multiple locations)

Alta Family Health Clinic Dinuba, CA

Castle Family Health Atwater, CA

Children's Health Center Fresno, CA

Dameron Hospital Stockton, CA

Darin Camarena Health Centers, Inc., Madera, CA

Family Health Care Network Porterville and Visalia, CA

Health Plan of San Joaquin (Multiple locations)

Kern County Mental Health Bakersfield, CA

Kings View Behavioral Health (Multiple locations)

Lodi Memorial Hospital Lodi, CA

Madera Family Medical Group Madera, CA

Oildale Community Health Center Bakersfield, CA

Reen Medical Group Ridgecrest, CA

Ridgecrest Regional Hospital Ridgecrest, CA

San Joaquin General Hospital French Camp, CA

Tule River Indian Health Porterville, CA

United Health Center of San Joaquin Valley (multiple locations)

Valley Children's Hospital, Madera, CA

Wasco Medical Center Bakersfield, CA

\*This list does not include all sites with telehealth activity within the San Joaquin Valley

## Appendix K:

## **Texas Senate Bill 1107**

Language Regarding Telemedicine and Telehealth Policies:

Sec. 1455.006. TELEMEDICINE MEDICAL SERVICES AND TELEHEALTH SERVICES STATEMENT.

- (a) Each issuer of a health benefit plan shall adopt and display in a conspicuous manner on the health benefit plan issuer's Internet website the issuer's policies and payment practices for telemedicine medical services and telehealth services.
- (b) This section does not require an issuer of a health benefit plan to display negotiated contract payment rates for health professionals who contract with the issuer to provide telemedicine medical services or telehealth services.

