

California's Current and Future Behavioral Health Workforce

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Abstract / Overview

In California, access to insurance coverage for behavioral health services has improved substantially over the past two decades, which has helped Californians who need behavioral health services pay for their care. To increase the likelihood that better coverage for behavioral health services will yield better access to treatment, California needs an adequate supply of behavioral health workers who are distributed equitably across the state, reflect the demographic characteristics of the state's population, participate in public and private health insurance plans, and possess the skills and credentials necessary to deliver the types of behavioral health services that Californians need. This report compiles and synthesizes available data from multiple sources on the state's current behavioral health workforce and the pipeline of trainees in behavioral health occupations. Gaps in availability of data needed to assess the adequacy of the behavioral health workforce are noted. The report also presents projections of future supply and demand for behavioral health workers in California. The report focuses on behavioral health occupations for which licensure is required because few data are available about unlicensed behavioral health occupations. Our findings suggest that California will need to make substantial investments to meet future demand for behavioral health professionals because many behavioral health professionals, particularly psychiatrists and psychologists, will reach retirement age within the next decade. Increasing the supply of professionals who can prescribe psychiatric medications is especially critical because the number of psychiatrists is projected to decrease by 34% between 2016 and 2028. In addition, action is needed to improve the geographic distribution of the behavioral health workforce and training programs in behavioral health fields. In most occupations, action is also needed to increase racial/ethnic diversity and/or the percentage of males in the workforce.

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Contents

Acknowledgements	2	Types of Educational Institutions/Institutional Sectors	42
Executive Summary	4	Chapter 5: Forecasted Supply of and Demand for Behavioral Health Professionals	44
Sources of Data.....	4	Method of Forecasting Supply.....	44
Current Behavioral Health Professions Workforce .	4	Data Sources for Supply Forecast	46
Pipeline of Behavioral Health Workforce Trainees .	5	Method of Forecasting Demand	49
Forecasts of Supply and Demand for Behavioral Health Professionals	6	Supply and Demand Forecast Comparisons.....	50
Recommendations	7	Limitations	52
Chapter 1: Introduction	10	Conclusion.....	53
Chapter 2: Description of California's Behavioral Health Workforce	11	Conclusion	54
Scope of Practice	11	Major Findings	54
Requirements for Licensure	11	Recommendations	56
Chapter 3: Current California Behavioral Health Workforce	15	References	60
Sources of Data.....	15	Appendix A:	63
Numbers of Licensed Behavioral Health Professionals and Pre-license Professionals	18	Licensure Pathway Diagrams	63
Ratios of Licensed Behavioral Health Professionals and Pre-license Professionals Per Capita	21	Appendix B:	66
Acceptance of Health Insurance	25	Estimates of Employment of Behavioral Health Professionals by Setting, California, 2014	66
Demographic Characteristics	25	Appendix C:	72
Race/Ethnicity	26	Regional Tables on the Pipeline of Behavioral Health Workforce Trainees – Demographic Characteristics and Institutional Sector	72
Gender	28	Race/Ethnicity	72
Age Distribution	29	Gender	75
Employment and Wages	29	Institutional Sector	76
Chapter 4: Pipeline of Behavioral Health Workforce Trainees	31	Appendix D: Projections of Trends in the Supplies of Behavioral Health Professionals in California	79
Sources of Data.....	31	Appendix E: Definitions	84
Supplies of Behavioral Health Trainees	32	Appendix F: Data Sources	86
Geographic Distribution of Behavioral Health Training Programs	35		
Demographic Characteristics of Behavioral Health Trainees	38		
Race/Ethnicity	38		

Executive Summary

Meeting behavioral health needs is critical to optimizing the health and well-being of Californians. Approximately one in six adults in California were diagnosed with a mental illness in 2014, while one in twenty-five had a serious mental illness. One in fourteen children in California had a serious emotional disturbance. Many Californians also suffer from substance use disorders. In 2013-2015, California had 11 drug overdose deaths per 100,000 persons overall and some rural counties had rates that were more than double the statewide average.

Access to public and private insurance coverage for behavioral health services has improved substantially over the past two decades, increasing the ability of Californians to pay for the behavioral health services they need. Yet, many Californians with mental illness or substance use disorders do not receive treatment. To increase the likelihood that better insurance coverage for behavioral health services will yield better access to treatment, California needs an adequate supply of behavioral health workers who are distributed equitably across the state and who reflect the demographic characteristics of the state's population. These workers must also possess the skills and credentials necessary to deliver the types of behavioral health care (e.g., counseling, prescribing/medication management) that people need and participate in public and private health insurance plans.

This report assesses California's progress toward providing its residents with a behavioral health workforce that meets its needs. The report compiles and synthesizes available data from multiple sources on the state's current behavioral health workforce and the pipeline of trainees in behavioral health occupations, and presents projections of future supply and demand for behavioral health workers in California. Gaps in availability of data needed to assess the adequacy of the behavioral health workforce are noted. The report focuses on behavioral health occupations for which licensure is required because few data are available about unlicensed behavioral health occupations, with the exception of substance abuse counselors. This lack of data limits the report's ability to describe the substance use disorder workforce which relies more heavily on unlicensed personnel than the mental health workforce.

Sources of Data

Data presented in this report were obtained from multiple sources including:

- Licensure records and surveys conducted by licensing boards for behavioral health professionals in California
- American Community Survey, U.S. Census Bureau
- California Employment Development Department, Labor Market Information Division's Occupational Employment Statistics and Wages program
- Integrated Postsecondary Education Data System, U.S. Department of Education

Current Behavioral Health Professions Workforce

California had over 80,000 licensed behavioral health professionals in 2016. These behavioral health professionals are not distributed evenly across the state. In addition, for most occupations, the workforce reflects neither the racial/ethnic diversity nor the gender composition of the state's population. In some occupations, a large proportion of workers will reach retirement age within the next decade. Specifically, existing data indicate that:

- Ratios of behavioral health professionals to population vary substantially across California's regions.
 - The Greater Bay Area has the highest per capita ratios for all occupations except psychiatric technicians.
 - The Inland Empire and the San Joaquin Valley have low per capita ratios relative to other regions of the state for all occupations except psychiatric technicians.
- Aside from psychiatrists, the percentage of licensed behavioral health professionals who accept any form of insurance is unknown. Findings from a previous study suggest that in 2015, only 77% of psychiatrists who provided patient care in California had any patients with private health insurance. Only 55% of psychiatrists had any Medicare patients and only 46% had any Medi-Cal patients.
- The demographic characteristics of behavioral health professionals do not reflect the demographic characteristics of California's population.
 - African-Americans and Latinos are underrepresented among psychiatrists and psychologists (the most highly educated providers); Latinos are also underrepresented among counselors and clinical social workers.
 - Men constitute the majority of psychiatrists, whereas the majority of psychologists, counselors, and social workers are women.
 - Forty-five percent of psychiatrists and 37% of psychologists are over age 60 years.
- Wages vary widely across behavioral health occupations, as do the settings in which people are employed.
 - Among occupations for which data are available, psychiatrists have the highest mean annual earnings and substance abuse and addiction counselors have the lowest mean annual earnings.
 - Forty-eight percent of psychiatrists are employed in an office-based setting; among the other occupations, office-based settings account for no more than 19% of employment.
 - Employment in a residential care facility is much more common among substance abuse and behavioral disorder counselors (34% of employment) and mental health counselors (27% of employment) in comparison to other occupations.

Pipeline of Behavioral Health Workforce Trainees

California's behavioral health trainees are not distributed evenly across the state. Trainees are more racially/ethnically diverse than licensed professionals but African-Americans and Latinos remain underrepresented among graduates in most professions, especially those that require a doctoral degree. The contributions of different types of educational institutions to behavioral health workforce training varies substantially across professions. Specifically, existing data indicate that:

- There are no residency programs for psychiatrists and no educational programs for psychiatric mental health nurse practitioners (PMHNPs) or psychologists north of Sacramento.
- There are no doctoral programs in psychology in the Central Coast and San Joaquin Valley regions.
- The percentage of Latinos among 2015 graduates of master's of social work and psychiatric technician education programs is at parity with the percentage in the general population but Latinos remain underrepresented among graduates of psychiatry residency programs and clinical or counseling psychology programs at both the master's and doctoral level.
- The institutional sector in which behavioral health professionals are trained varies substantially across occupations.
 - The vast majority of graduates of master's of social work and psychiatric technician programs are from public higher education institutions.
 - Large percentages of graduates of doctoral programs in clinical or counseling psychology and graduates of training programs in substance abuse/addiction counseling are from private, for-profit institutions.

Forecasts of Supply and Demand for Behavioral Health Professionals

Estimates of future supply and demand for behavioral health workers suggest that the state will face substantial shortages of workers in all occupations relative to projected need for behavioral health services.

If current trends continue, between 2016 and 2028:

- Supplies of psychiatrists, psychologists, and licensed clinical social workers (LCSWs) are projected to decrease.
- Supplies of licensed marriage and family therapists (LMFTs), licensed professional clinical counselors (LPCCs), and psychiatric technicians are expected to increase.
- Demand is projected to increase between 2016 and 2028 for all of the occupations for which demand was forecasted.
- If current trends continue, the supply of psychiatrists and the combined supply of psychologists, LMFTs, LPCCs, and LCSWs in California will be inadequate to meet future demand.
- Forecasts for demand based on *current service utilization patterns* indicate that by 2028:
 - California will have 41% fewer psychiatrists than needed.
 - California will have 11% fewer psychologists, LMFTs, LPCCs, and LCSWs than needed.

- Forecasts for demand based on *current service utilization plus unmet need* for services indicate that by 2028:
 - California will have 50% fewer psychiatrists than will be needed.
 - California will have 28% fewer psychologists, LMFTs, LPCCs, and LCSWs combined than will be needed.

Recommendations

Our findings suggest that California will need to make substantial investments to meet future demand for behavioral health occupations.

Increase Supply

Increasing the supply of professionals who are trained to prescribe psychiatric medications is especially critical because the number of psychiatrists is projected to decrease by 34% between 2016 and 2028. Persons with severe mental illness need medications to manage their conditions and some persons with mild or moderate mental illness find them helpful. To cope with this projected shortage, California's policy-makers need to simultaneously consider ways to increase the number of psychiatrists and expand models of care that rely less heavily on psychiatrists.

Examples of strategies for increasing availability of professionals who can prescribe psychiatric medications include:

- Increasing the number of psychiatry residency positions.
- Expanding the use of PMHNPs to prescribe medications.
- Supporting team-based models of care in which psychiatrists provide advice and education about medications to primary care physicians, physician assistants (PAs), and nurse practitioners (NPs) either in person or virtually via telehealth technology.
- Providing additional training to primary care physicians, NPs, and PAs to enhance their ability to care for patients with mental illness or substance use disorders.

To implement these strategies, policy-makers could leverage two existing sources of funding:

- The Mental Health Services Act's (MHSA) Workforce Education and Training program, which provides grants to psychiatry residency programs and PMHNP education programs.
- Song-Brown program special programs grants, which provide funds to primary care residency programs and primary care PA and NP training programs to enhance training on high priority health care needs.

Policy-makers should also explore the feasibility of using funds from Medi-Cal, California's Medicaid program, to support institutions that sponsor residency programs in psychiatry. Many states use Medicaid funds to support residency training and some target specific specialties in which they experience shortages.

California policy-makers should also explore the feasibility of creating academic ladders by which persons who have completed certificate or associate degree education in behavioral health services can obtain the additional training needed to become licensed behavioral health professionals, and employers should provide financial and other support to help their employees complete additional education.

California should also ensure that persons who complete education in behavioral health professions are encouraged to provide behavioral health services. This is especially important for LCSWs because there is substantial demand for these professionals in other settings, such as child welfare agencies and general acute care hospitals. At present, the MHSA WET program provides stipends to MSW students interested in careers in behavioral health but at this writing it is unknown whether funding for the stipends and other MHSA WET programs will be extended beyond 2018.

Improve Geographic Distribution

California's policy-makers should address the geographic maldistribution of behavioral health professionals and training programs in behavioral health occupations. Most programs are clustered in the Greater Bay Area and urban areas of Southern California. Research has found that primary care physicians tend to practice near the place where they complete residency. This may be true of behavioral health professionals as well.

Examples of strategies for improving the geographic distribution of behavioral health professionals include:

- Expanding clinical training in the Far North (i.e., north of Sacramento), Central Coast, and San Joaquin Valley regions and expanding the provision of didactic education via distance learning.
- Focusing the recruitment efforts of training programs in underserved regions on prospective students from these areas and providing financial aid to those who agree to practice in these areas upon graduation.
- Sustaining and increasing funding for the MHSA WET educational stipend program, which provides stipends to graduate students in PMHNP, clinical psychology, marriage and family therapy, and clinical social work who agree to complete requirements for supervised professional experience and work in the public mental health system for 12 months following graduation.
- Sustaining and increasing funding for the MHSA WET Mental Health Loan Assumption Program (MHLAP) which repays \$10,000 in education loans in exchange for practicing for one year in a hard-to-fill or retain position within a county public mental health system.
- Increasing funding for the Licensed Mental Health Services Provider Education Program, which repays \$15,000 in educational loans in exchange for practicing for two years in a publicly-funded mental health facility, a non-profit mental health facility that contracts with a county entity to provide mental health services, and/or a designated mental health professions shortage area.
- Establishing similar stipend and/or loan repayment programs to support behavioral health professionals who provide substance use disorder services to low-income persons.

Increase Racial/Ethnic Diversity

California needs to increase racial/ethnic diversity in the behavioral health professions, particularly in psychiatry and psychology, to increase opportunities for African-American and Latino Californians to receive behavioral health services from culturally, racial/ethnically, and linguistically concordant professionals.

Examples of strategies for increasing the racial/ethnic diversity of behavioral health professionals include:

- Providing comprehensive academic, social, emotional, and financial support to underrepresented minority students at the undergraduate level to prepare them for admission to graduate or professional school.
- Fostering exposure to behavioral health careers among underrepresented minority students, who may be less aware of career opportunities in these fields than opportunities in medicine or nursing.
- Establishing academic ladders by which people with certificate or associate degree education in in treatment of mental illness and substance use disorders have an opportunity to pursue employer-supported education to obtain the additional training needed to obtain licensure, preferably with financial and other support from employers.

Improve and Expand Collection and Dissemination of Workforce Data

This report points to the need to improve and expand the collection, analysis, and dissemination of data about California's behavioral health workforce. Aside from the Medical Board, the licensing boards for behavioral health professionals historically have not collected data regarding labor force participation, practice settings, acceptance of health insurance, or demographic characteristics of the workforce. Data on ability to speak languages other than English are especially important because estimates from the American Community Survey suggest that 19% of Californians age five years or older do not speak English well. Consistent collection of data at the point of licensure is especially important for the PMHNP workforce, as there are few other sources of data available for this profession. Collection, analysis, and dissemination of data on paraprofessionals, such as peer providers and addiction counselors, is also important because they are a critical part of the behavioral health workforce.

Expanding the volume and breadth of data collected by licensing boards and other state agencies would also be helpful for ensuring the availability of a minimum dataset across all behavioral health occupations, including peer providers, addiction counselors and other paraprofessionals, and a standard nomenclature that can be used to classify them. Data on graduates of training programs that prepare persons to work in behavioral health occupations should also be collected, analyzed, and disseminated.

Chapter 1: Introduction

Meeting behavioral health needs is critical to optimizing the health and well-being of Californians. Approximately one in six adults in California was diagnosed with a mental illness in 2014, while one in 25 had a serious mental illness. One in 14 children in California had a severe emotional disturbance.¹ According to the National Survey on Drug Use and Health (NSDUH), 12.3% of adolescents had a major depressive episode in 2014-2015.² In 2014-2015, 6.6% of persons age 12 or older had an alcohol use disorder.² California had 11 drug overdose deaths per 100,000 persons in 2013-2015 and some rural counties had rates that were more than double the statewide average.³ Historically, many Californians with behavioral health needs have had difficulty obtaining the services they need. Among California adolescents who had a major depressive episode between 2011 and 2015, only 32.1% reported that they received treatment within the past year; only 37.2% of adults who had any mental illness during the same time period received treatment within the past year.² Persons with alcohol dependence or abuse were even less likely to be treated.⁴

Access to insurance coverage for behavioral health services has improved substantially over the past two decades. California enacted a mental health parity law in 1999 which requires health insurers to provide coverage for serious mental illness in adults and severe emotional disturbances in children "under the same terms and conditions" as coverage provided for medical conditions.⁵ The federal government enacted legislation in 2008 that requires group health insurance plans to provide parity in coverage for all mental health and substance use disorders.⁶ The Affordable Care Act (ACA) extended the requirement for parity in coverage of mental health and substance use disorders to health plans sold in the individual insurance market and to Medi-Cal managed care plans.⁷ Moreover, since the ACA was implemented in 2014, the number of Californians with health insurance coverage has increased substantially from 83% of the population in 2013 to 93% in 2016.^{8,9}

To increase the likelihood that better insurance coverage for behavioral health services will yield better access to treatment, California needs an adequate supply of behavioral health workers who are distributed equitably across the state and who reflect the demographic characteristics of the state's population. These workers must also possess the skills and credentials necessary to deliver the types of behavioral health care (e.g., prescribing/medication management, counseling) that people need. This report assesses California's progress toward achieving this goal. The report compiles and synthesizes available data from multiple sources on the state's current behavioral health workforce and the current pipeline of trainees in behavioral health occupations. Gaps in availability of data needed to assess the adequacy of the behavioral health workforce are noted. The report also presents projections of future supply and demand for behavioral health workers in California that stakeholders can use to inform decisions about the size and location of training programs.

Persons working in some behavioral health occupations are required to obtain a license from the state in which they practice. Other occupations, such as addiction counselors and peer providers, do not require licensure but may require certification. For example, California requires addiction counselors who work in substance use disorder treatment facilities that are licensed or certified by the state to be certified by one of two certifying bodies accredited by the National Commission for Certifying Agencies. Certification is voluntary for peer providers.

Occupations discussed in the report include those in which all professionals are trained to provide behavioral health services, such as marriage and family therapy and social work, and occupations in which a subset of workers specialize in behavioral health, such as medicine and nursing. This report focuses on behavioral health occupations for which licensure is required because few quantitative data are available for unlicensed behavioral health personnel. This lack of data limits the report's ability to describe the substance use disorder workforce which relies more heavily on unlicensed personnel than the mental health workforce. The one substance use disorder occupation for which some data are available – substance abuse/addiction counselors – is included. Gaps in the availability of quantitative data for behavioral health occupations are noted throughout the report.

Chapter 2: Description of California's Behavioral Health Workforce

California's behavioral health workforce consists of multiple occupations that have differing scopes of practice and differing educational and licensure requirements. Understanding the similarities and differences among these professions is important for interpreting data on the supplies and pipelines of trainees in each occupation.

Scope of Practice

Psychiatrists and psychiatric mental health nurse practitioners (PMHNPs) are the only behavioral health professionals permitted to prescribe medications.¹ They may also provide psychotherapy to individuals, families, and groups. Clinical psychologists, licensed marriage and family therapists (LMFTs), licensed professional clinical counselors (LPCCs), and licensed clinical social workers (LCSWs) provide psychotherapy. Psychiatric mental health clinical nurse specialists (CNSs) provide direct care to patients, and educate and advise other nursing personnel and managers regarding care for patients with mental illness. Psychiatric technicians provide therapeutic services under the direction of a licensed behavioral health professional. Unlicensed counselors and peer providers provide counseling, mentoring, and support. While these personnel play important roles in the provision of behavioral health services they are not included in this report, aside from substance abuse counselors, because few quantitative data about them are available.

Scope of practice laws set forth the maximum range of behavioral health services that a licensed behavioral health professional can legally provide but do not guarantee that all behavioral health professionals will "practice at the top of their license." Employers may have policies that limit the scope of services that behavioral health professionals they employ may provide. This report does not discuss those policies because there is no existing source of comprehensive data about them.

Requirements for Licensure

Table 2.1. lists the requirements for licensure in six licensed behavioral health occupations in California: psychiatrists, psychologists, LCSWs, LMFTs, LPCCs, and psychiatric technicians. The table also lists requirements for certification for PMHNPs and CNSs. These professionals are licensed registered nurses (RNs) who have completed additional graduate-level education to prepare for advanced practice in psychiatric mental health nursing. Appendix A contains diagrams that provide detailed information about licensure requirements for psychologists, LCSWs, LMFTs, LPCCs, and psychiatric technicians.

Educational Requirements

Psychiatrists and psychologists must complete a doctoral degree. PMHNPs, psychiatric mental health CNSs, LMFTs, LPCCs, and LCSWs are required to complete a master's or doctoral degree. Psychiatric technicians may complete a psychiatric technician education program (typically an associate degree program or a certificate program) but can also complete an equivalent combination of education and supervised professional experience.

Clinical Training Requirements

The Medical Board of California requires graduates of U.S. and Canadian medical schools to complete 12 months of clinical training in a single residency program following completion of medical school; graduates of medical

¹ Physicians and nurse practitioners in other specialties and physician assistants are allowed to prescribe psychiatric medications but they do not have as much training in diagnosis and treatment of behavioral health disorders as psychiatrists and psychiatric mental health nurse practitioners.

schools in other countries must complete 24 months of residency of which the last 12 months must be in a single program. Psychiatrists do not need any additional training to obtain licensure but need to complete four years of residency in psychiatry to be eligible for board certification, which is typically a requirement for employment in the field.

The California Board of Psychology requires psychologists to complete 3,000 hours of supervised clinical experience; they must complete 1,500 of these hours after they receive a doctoral degree. Many psychologists who are in the process of completing post-doctoral clinical training register with the Board of Psychology as a psychological assistant or a registered psychologist, although this is not required if specific conditions are met.

The California Board of Behavioral Sciences (BBS) requires graduates of master's of social work programs to register as an Associate Clinical Social Worker prior to completing 3,200 hours of supervised clinical experience. Similarly, persons who have completed a master's degree that satisfies requirements for licensure as a LPCC must register with the BBS as a Professional Clinical Counselor Intern before completing 3,000 hours of supervised clinical experience. Persons who have completed a master's degree that meets the BBS's requirements for licensure as an LMFT must complete 1,300 hours of supervised clinical experience before registering with the BBS as a LMFT Intern, after which they must complete an additional 1,700 hours for a total of 3,000 hours of supervised clinical experience.

Psychiatric mental health CNSs and PMHNPs are required to complete clinical training as part of their master's or doctoral programs but are not required to obtain any additional supervised clinical experience prior to obtaining certification from the California Board of Registered Nursing (BRN).

Examination Requirements

Most licensing boards for behavioral health occupations require persons to pass specific examinations to obtain licensure. Psychiatrists and all other physicians are required to pass Steps 1, 2, and 3 of the U.S. Medical Licensure Examination or the National Board of Osteopathic Medical Examiners examination. Physicians typically take Steps 1 and 2 of these examinations during medical school. Psychiatrists who wish to become board certified may also take an examination administered by the American Board of Psychiatry and Neurology but they are not required to do so to obtain a license.

Persons seeking licensure as a psychologist, LCSW, LMFT, or LPCC are required to take an examination on California law and ethics. They must also take an examination regarding their clinical skills developed by the BBS or by a national certifying body. Psychiatric technicians must pass the California Psychiatric Technician Licensure Examination.

RNs seeking certification as a CNS or NP are not required take an examination if they have graduated from a CNS or NP education program in California that meets the BRN's requirements. Applicants from other states are required to pass the Psychiatric Mental Health Nursing Board Certification Examination or the Psychiatric Mental Health Nurse Practitioner Board Certification Examination, both of which confer national certification. Licensed RNs who have not obtained a graduate degree can obtain national certification as a Psychiatric Mental Health RN if they have practiced full-time for two years as an RN, have worked a minimum of 2,000 hours in a psychiatric mental health setting, and have completed 30 hours of continuing education in psychiatric mental health nursing within the last three years. However, national certification is not required to practice as an RN in a psychiatric mental health setting.

Research Report

Table 2.1.
Requirements for Licensure in Behavioral Health Professions in California

Profession	Licensing Board	Degree	Pre-licensure Registration	Supervised Professional Experience	Examination(s)
Psychiatrist	Medical Board of California	Doctoral degree from an approved medical school (MD or DO)	Not required	4 years of residency; eligible for licensure after 12 continuous months of training in a single residency program	US Medical Licensure Examination Steps 1, 2, and 3 or Comprehensive Osteopathic Medical Licensing Examination Steps 1, 2, and 3; American Board of Psychiatry and Neurology Certification Examination (optional – not required for licensure)
Psychologist	California Board of Psychology	Doctoral degree from an approved or accredited program in clinical or counseling psychology	Not required but most register as a psychological assistant or a registered psychologist ⁱⁱⁱ	3000 hours (2 years) of supervised professional experience; at least 1500 hours must be completed post-doctorally	Examination for Professional Practice in Psychology; California Psychology Law and Ethics Examination
Licensed Marriage and Family Therapist	California Board of Behavioral Sciences	Master's or doctoral degree that meets educational requirements for licensure	Register as a Marriage and Family Therapist intern after completing 1300 hours of supervised professional experience	3000 hours (104 weeks) of supervised professional experience ⁱⁱⁱ	Clinical Examination; California Law and Ethics Examination
Licensed Professional Clinical Counselor	California Board of Behavioral Sciences	Master's or doctoral degree that meets educational requirements for licensure	Register as a professional clinical counselor intern before completing supervised professional experience	3000 hours (104 weeks) of supervised professional experience ^{iv}	National Clinical Mental Health Counselor Examination; California Law and Ethics Examination

Profession	Licensing Board	Degree	Pre-licensure Registration	Supervised Professional Experience	Examination(s)
Licensed Clinical Social Worker	California Board of Behavioral Sciences	Master's degree in social work	Register as an associate clinical social worker before completing supervised professional experience	3200 hours (104 weeks) of supervised professional experience ^v	Association of Social Work Boards Examination; California Law and Ethics Examination
Psychiatric Mental Health Registered Nurse (certification)	California Board of Registered Nursing	Master's degree in psychiatric mental health nursing	Not required	Required to complete supervised clinician education to fulfill requirements for master's degree.	Psychiatric Mental Health Nursing Board Certification Examination (optional – not required if complete an educational program that meet's the Board's requirements) ^{vi}
Psychiatric Nurse Practitioner (certification) ^{vii}	California Board of Registered Nursing	Master's or doctoral degree from a psychiatric mental health nurse practitioner education program that meets requirements for licensure	Not required	Required to complete supervised clinician education to fulfill requirements for master's or DNP degree.	Psychiatric Mental Health Nurse Practitioner Board Certification Examination (optional – not required if complete an educational program that meet's the Board's requirements) ^{viii}
Psychiatric Technician	California Board of Vocational Nursing and Psychiatric Technicians	Complete 12 th grade or equivalent	Not required	May complete a psychiatric technician education program but can also complete an equivalent combination of education and supervised professional experience ^{ix} or complete training while serving in the US military. ^x	California Psychiatric Technician Licensure Examination

Research Report

Chapter 3: Current California Behavioral Health Workforce

This chapter presents information on California's current behavioral health workforce and forms a foundation for projections of future supply and demand presented in Chapter 5. This information includes numbers of persons in behavioral health occupations, ratios of behavioral health workers to population, wages, practice settings, and demographic characteristics.

The findings focus on licensed behavioral health occupations: psychiatrists, psychologists, LMFTs, LPCCs, LCSWs, and psychiatric technicians, as well as psychiatric mental health CNSs, NPs, and RNs. Data on substance abuse counselors are included to the extent available. These occupations were selected because they are the only behavioral health occupations for whom reliable quantitative data describing supply are available. State and regional data are presented for psychiatrists, psychologists, LMFTs, LPCCs, LCSWs, and psychiatric technicians. Region-level information is not available for psychiatric mental health CNSs, NPs, and RNs because data were obtained from surveys that do not contain sufficient numbers of observations to generate estimates below the state level.

Sources of Data

Table 3.1. lists the sources of data used to describe California's current behavioral health workforce.

The California Department of Consumer Affairs (DCA) Professional License Master File was used to provide counts of licensed psychologists, LMFTs, LPCCs, LCSWs, and psychiatric technicians. Also included are registered, pre-license professionals who have received an educational degree meeting the standard for licensure and have registered with the appropriate licensing board to complete a specified number of supervised training hours before attaining full licensure. They include registered psychologists, psychological assistants, marriage and family therapy interns, professional clinical counselor interns, and associate clinical social workers (ACSW). Counts of licensed psychiatrists were obtained from the Medical Board of California, which is required by law to administer a survey of physicians every two years in conjunction with license renewal. Estimates of numbers of psychiatric mental health CNSs and NPs were obtained from published reports based on surveys of these professionals conducted by the UCSF Healthforce Center on behalf of the California Board of Registered Nursing (BRN).^{10,11,12}

Analyses of geographic distribution were limited to licensed professionals and registered, pre-licensure professionals who are located in California. The regions utilized in this report are those used for the California Health Interview Survey (CHIS) administered by the UCLA Center for Health Policy Research. The CHIS regions group the state's 58 counties into nine distinct regions. The breakdown of CHIS regions into California counties and methods for assigning professionals to regions are described in Appendix C.

Data about the demographic characteristics of psychiatrists were extracted from responses to the Medical Board's mandatory survey. The data represent individuals who held an active license, practiced in California as of 2015, and were not in training. Information about the demographic characteristics of persons in other behavioral health occupations were obtained from the American Community Survey (ACS) Public Use Microdata Sample (PUMS),

Research Report

Table 3.1. Sources of Data on the California's Current Behavioral Health Workforce

	Psychiatrists	Psychologists	LMFTs	LPCCs	LCSWs	Psych Techs	Psych/MH CNSs	Psych/MH NPs	Psych/MH RNs	Substance Abuse Counselors
Number of Licensed and Pre-licensed Professionals and Per Capita Ratios	Medical Board of California mandatory survey, 2015	California Department of Consumer Affairs Professional License Master File, 2016					2010 Survey of Clinical Nurse Specialists ¹⁰	2010 Survey of Nurse Practitioners and Certified Nurse Midwives ¹¹	2014 Survey of Registered Nurses ¹²	Not available
Demographic Characteristics (i.e., race/ethnicity, gender, age)	Medical Board of California mandatory survey, 2015	American Community Survey Public Use Microdata Sample, 2011-2015					Not available			Not available
Number of Jobs	California Employment Development Department, Labor Market Information Division (part of Occupational Employment Statistics and Wages program), 2016						Not available			California Employment Development Department, 2016
Wages	California Employment Development Department), Labor Market Information Division (part of Occupational Employment Statistics and Wages program), 2016						Not available			California Employment Development Department, 2016

Research Report

Estimates of wages and the number of jobs for behavioral health occupations were obtained from the California Employment Development Department (EDD), Labor Market Information Division, as part of its Occupational Employment Statistics and Wages (OES) program. These are the only metrics presented in this chapter for which data on substance abuse counselors are available.

Limitations of Sources of Data

The sources of data analyzed for this report have some important limitations.

First, licensing boards in California do not routinely collect information on licensees' demographic and employment characteristics. Data on these characteristics were obtained from other sources that do not identify behavioral health occupations in the same manner as the licensing boards. The source of data on demographic characteristics, the ACS, asks respondents to indicate their occupation and no attempt is made to determine whether respondents are licensed. The occupational categories used are broad and align imperfectly with licensed behavioral health occupations in California. The only behavioral health occupations that can be uniquely described by the ACS data are psychologists, counselors, and social workers. To maximize our ability to identify survey respondents who were likely to be licensed psychologists, LMFTs, LPCCs, or LCSWs, we limited our analyses to respondents from California who were classified as employed psychologists with a doctoral degree, employed counselors with a master's or higher degree, and employed social workers with a master's or higher degree. However, findings derived from the ACS data may include individuals who are working in settings unrelated to behavioral health care. For example, many social workers do not provide behavioral health or counseling services, and instead provide community health, client navigation, care coordination, and other services. The most recent estimates available suggest that 40% of licensed social workers nationwide provided behavioral health services.¹³

Similarly, the OES uses the Standard Occupation Classification (SOC) system to classify occupations, which differ from the manner in which California's licensing boards classify behavioral health professions. For example, whereas California has a single licensed occupation in social work (i.e., licensed clinical social worker) OES reports data separately on three different categories of social workers: child, family and school social workers, healthcare social workers, and mental health and substance abuse social workers. Conversely, the OES data do not distinguish mental health and substance abuse counselors who meet the educational requirements for licensure as a LPCC or a LMFT from counselors who are not eligible for licensure.

Second, some data are from sources that contain too few sample observations to describe characteristics of individual behavioral health occupations for geographic regions below the state level, or for a single year. The surveys of CNSs, NPs, and RNs that Healthforce Center at UCSF administers for the California Board of Registered Nurses do not contain sufficient numbers of observations for psychiatric mental health CNSs, NPs, and RNs to generate estimates below the state level. The ACS and OES datasets also cannot be used to generate estimates below the state level. OES reports estimates at the metropolitan statistical area (MSA) level

A third important difference between the OES data and data derived from either a licensing board or the ACS is that OES estimates numbers of jobs instead of numbers of people. The number of jobs in a behavioral health occupation may not be equivalent to the number of people working in the occupation, because some people may have several part-time jobs. In addition, the OES data do not indicate whether jobs are held by persons who are licensed or unlicensed behavioral health professionals. For example, a mental health or substance abuse counselor job may be held by an unlicensed person or by a person who is licensed as a LMFT, LPCC, or LCSW.

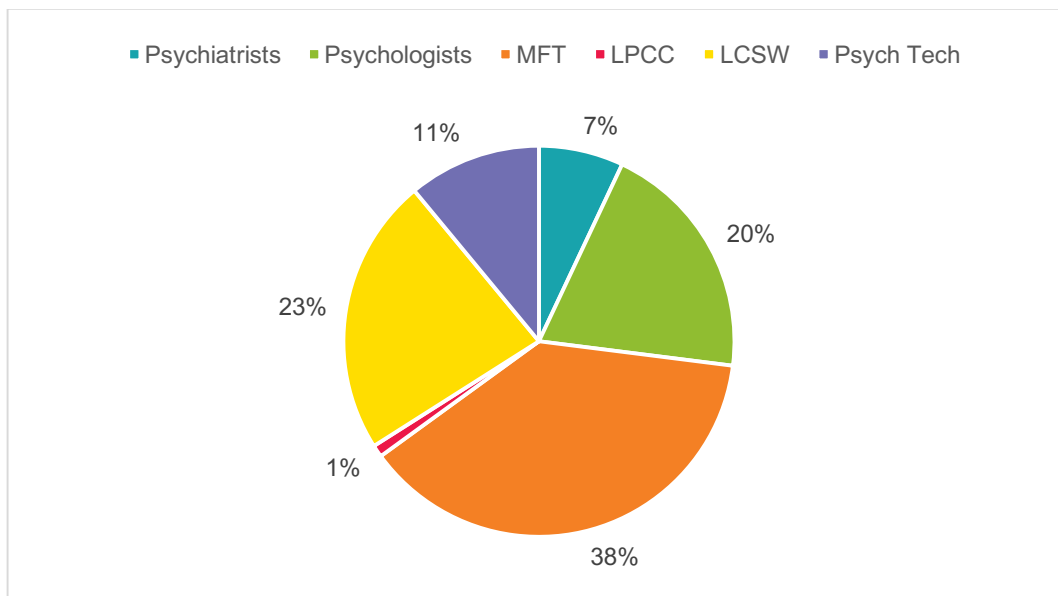
The number of jobs also does not account for people who are trained to work in a behavioral health occupation but who are unemployed, not in the labor force, or working in a different field.

Numbers of Licensed Behavioral Health Professionals and Pre-license Professionals

Psychiatrists, Psychologists, LMFTs, LPCCs, LCSWs, and Psychiatric Technicians

Figure 3.1 below displays the percentage distribution by type of licensed occupation for six behavioral health professions: psychiatrists, psychologists, LMFTs, LPCCs, LCSWs, and psychiatric technicians. In 2016, California had 83,181 licensed providers in these six occupations. LMFTs (38%) and LCSWs (23%) represented the two largest segments of this workforce.

Figure 3.1. Actively Licensed Behavioral Health Professionals, 2016



Sources: Medical Board of California Mandatory Survey, 2015; Department of Consumer Affairs (DCA) Licensee Masterfile, June 2016.

Table 3.2 reveals important differences in the distribution of these licensed behavioral health occupations across different geographic areas of the state. The most notable differences are in the San Joaquin Valley, Inland Empire, and Northern and Sierra regions. Psychologists accounted for 20% of all licensed behavioral health professionals in California, but just 11% in the San Joaquin Valley, 12% in the Inland Empire, and 13% in the Northern & Sierra region. LMFTs represented 38% of California's licensed behavioral health professionals, but just 25% in the San Joaquin Valley and 30% in the Inland Empire. Psychiatric technicians, who represented just 11% of all licensed behavioral health professionals in California, accounted for 40% of licensed professionals in the San Joaquin Valley and 31% in the Inland Empire. In both regions, psychiatric technicians outnumber all other types of licensed behavioral health professionals. The high proportions of psychiatric technician per capita in these regions is likely explained by the presence of psychiatric hospitals, facilities for persons with developmental

disabilities, and state correctional facilities, as employment opportunities for psychiatric technicians are concentrated in these types of settings.

Table 3.2. Distribution of Types of Actively Licensed Behavioral Health Professionals by Region, 2016

Region	Psychiatrist	Psychologist	LMFT	LPCC	LCSW	Psych Tech	Total
Central Coast	5.4%	15.7%	42.3%	1.3%	15.9%	19.4%	6,684
Greater Bay Area	8.2%	23.3%	38.8%	1.5%	21.6%	6.6%	23,372
Inland Empire	5.7%	11.6%	30.4%	1.4%	19.6%	31.3%	6,098
Los Angeles	7.2%	22.1%	38.5%	1.2%	26.7%	4.3%	21,053
Northern & Sierra	4.8%	12.5%	47.6%	1.8%	25.6%	7.6%	2,550
Orange	5.3%	19.8%	41.9%	1.9%	21.3%	9.8%	6,185
Sacramento Area	7.3%	17.8%	38.5%	1.9%	28.8%	5.6%	4,555
San Diego Area	8.2%	26.7%	36.6%	1.9%	24.8%	1.7%	6,819
San Joaquin Valley	5.0%	11.3%	24.6%	1.0%	18.0%	40.0%	5,865
California	5,779 (6.9%)	16,683 (20.1%)	31,349 (37.7%)	1,207 (1.5%)	18,974 (22.8%)	9,189 (11.0%)	83,181

Sources: Medical Board of California Mandatory Survey, 2015; Department of Consumer Affairs (DCA) Licensee Masterfile, June 2016.

In addition to the 83,181 licensed behavioral health professionals, in 2015 California had 31,674 persons who had registered with their respective licensing boards and were completing supervised training required to obtain licensure. These persons are typically referred to as pre-license behavioral health professionals. Psychiatric technicians do not appear in Table 3.3., because they are not required to register with their licensing board until after they have completed all required training and are ready to apply for licensure.

Table 3.3 shows that the two largest groups of pre-license behavioral health professionals were LMFT interns and ACSWs. In combination, they accounted for approximately 89% of all registered, pre-license behavioral health professionals statewide. This is a much larger proportion than the share of all licensed professionals represented by LMFTs and LCSWs (61%). The difference is the result of there being very few registered, pre-license psychologists compared to fully-licensed psychologists. Registered psychologists and psychological assistants, in combination, account for approximately 6% of the total number of registered, pre-license behavioral health professionals statewide. In contrast, licensed psychologists account for approximately 20% of all licensed behavioral health professionals statewide.

Table 3.3. Distribution of Types of Pre-Licensed Behavioral Health Professionals by Region, 2016

Region	Registered Psychologist	Psychological Assistant	LMFT Intern	LPCC Intern	ACSW	Total
Central Coast	0.6%	3.0%	59.4%	4.3%	32.7%	1,866
Greater Bay Area	1.9%	4.7%	49.2%	5.6%	38.6%	6,969
Inland Empire	0.2%	2.0%	56.0%	8.6%	33.2%	2,783
Los Angeles	0.8%	6.3%	46.8%	2.9%	43.2%	10,216
Northern & Sierra	0.2%	1.5%	44.3%	4.5%	49.4%	970
Orange	0.8%	5.7%	54.5%	5.8%	33.1%	2,433
Sacramento Area	0.1%	3.6%	49.8%	7.1%	39.3%	1,645
San Diego Area	0.7%	6.1%	52.5%	7.0%	33.7%	2,539
San Joaquin Valley	0.1%	2.3%	51.4%	4.3%	41.9%	2,253
California	0.9%	4.7%	50.3%	5.0%	39.1%	31,674

Source: Department of Consumer Affairs (DCA) Licensee Masterfile, June 2016.

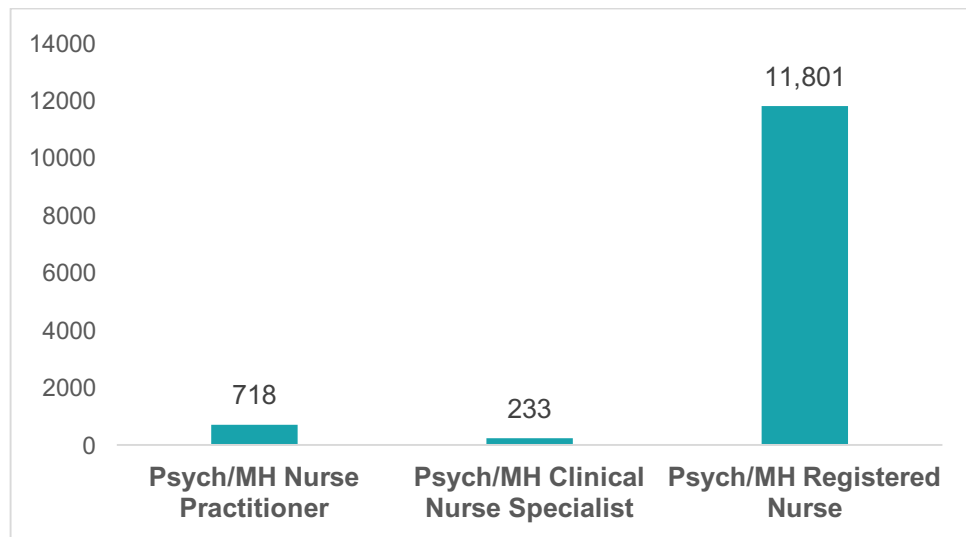
Psychiatric Mental Health Clinical Nurse Specialists, Nurse Practitioners, and Registered Nurses

Estimates of the numbers of psychiatric mental health CNSs, NPs, and RNs were obtained from surveys of samples of RNs in California, as the licensing board (BRN) does not routinely collect information on licensees' specialties at the point of initial licensure or as part of the license renewal process.

Findings from these surveys indicate that the numbers of psychiatric mental health NPs and CNSs are small compared to other types of licensed behavioral health providers. (See Figure 3.2.) A survey of NPs conducted in 2010 indicated that there were 10,411 RNs in California certified as an NP or dually certified as an NP and a certified nurse midwife and employed as an NP.¹¹ An estimated 718 of these NPs (6.9% of the total) practiced in a psychiatric mental health setting in their primary NP position.

A 2010 survey of CNSs in California¹⁰ indicated that there were 1,818 RNs in the state who were certified as a CNS and employed in a nursing position. An estimated 296 CNSs (16.3% of the total) had a clinical area of specialization in psychiatric mental health nursing, while an estimated 233 CNSs (12.8% of the total) worked in a psychiatric mental health setting in their primary nursing position.

The number of RNs who do not possess advanced practice credentials but who serve persons with behavioral health needs is much larger than the numbers of psychiatric mental health CNSs and NPs. Findings from the 2016 BRN Survey of Registered Nurses indicate that there are 295,019 licensed RNs in California who are employed in a nursing position. Of these, an estimated 1,475 (0.5% of all RNs) are certified as a psychiatric mental health RN and an estimated 11,801 (4% of all RNs) care for persons who have psychiatric, mental health, or substance abuse needs.¹¹

Figure 3.2. Estimated Numbers NPs, CNSs, and RNs Working in Psychiatric Mental Health

Sources: Spetz et al., 2011; Spetz et al. 2017.

Ratios of Licensed Behavioral Health Professionals and Pre-license Professionals Per Capita

Tables 3.4. and 3.5. present 2016 ratios of licensed and registered pre-license behavioral health professionals per 100,000 population for each region and for the state as a whole. Per capita measures allow for comparisons of provider supply across geographic areas that have very different population sizes. They can also be used as benchmarks for assessing the adequacy of supplies of behavioral health professionals.

Table 3.4. indicates that the Greater Bay Area had the largest per capita ratios of licensed behavioral health professionals of any region in the state for all provider types except psychiatric technicians. These ratios were much larger than the statewide averages. The Central Coast had a per capita ratio of LMFTs that was 1.5 times the statewide average and a per capita ratio of psychiatric technicians that was 2.4 times the statewide average. The San Joaquin Valley also had a per capita ratio of psychiatric technicians that was 2.4 times the statewide average.

Table 3.4. Actively Licensed Behavioral Health Professionals per 100K Population by Region, 2016

Region	Psychiatrist	Psychologist	LMFT	LPCC	LCSW	Psych Tech
Central Coast	15.2	44.7	120.4	3.6	45.4	55.3
Greater Bay Area	25.0	70.7	117.9	4.6	65.7	20.2
Inland Empire	7.7	15.6	41.0	1.9	26.4	42.1
Los Angeles	14.9	45.9	80.0	2.4	55.5	9.0
Northern & Sierra	8.6	22.7	86.0	3.3	46.4	13.8
Orange	10.3	38.6	81.8	3.7	41.6	19.1
Sacramento Area	14.5	35.3	76.4	3.7	57.2	11.2
San Diego Area	16.0	52.1	71.3	3.8	48.4	3.3
San Joaquin Valley	7.1	15.8	34.6	1.4	25.3	56.3
California	14.7	42.5	79.9	3.1	48.3	23.4

Sources: Medical Board of California Mandatory Survey, 2015; Department of Consumer Affairs (DCA) Licensee Masterfile, June 2016; US Census Bureau, Population Division, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2016.

Note: Per capita counts of psychiatrists include active licensees who have completed training (i.e. residents and fellows are excluded).

In comparison to other regions of the state, the San Joaquin Valley and Inland Empire regions have very low per capita ratios of behavioral health professionals, with the exception of psychiatric technicians. Per capita ratios of psychiatrists, LMFTs, and LCSWs in each region were approximately half the statewide averages for these professions; the per capita ratios of psychologists were less than 40% of the statewide average. Other instances of per capita ratios that were far below average included psychiatrists and psychologists in the Northern & Sierra region.

Region-level data are important but can mask substantial variation in ratios of behavioral health professionals to population within regions, as Figure 3.3 illustrates. The maps in this figure display ratios of licensed behavioral health professionals in California by county. For each profession, counties were ranked by the ratio of professionals per 100,000 population and divided into quartiles to distinguish counties with higher versus lower ratios of professionals per capita. The starkest differences within a region are in the San Diego area. In two professions – psychiatry and psychology – San Diego County has ratios in the highest quartile whereas Imperial County has ratios in the lowest quartile for all professions except psychiatric technicians. On the Central Coast, San Luis Obispo County has higher ratios of professionals to population than the other counties in the region for four professions (psychiatrists, licensed professional clinical counselors, licensed clinical social workers, and psychiatric technicians), although the differences are not as large as the differences between San Diego and Imperial Counties. In the San Joaquin Valley, Fresno County has a higher ratio of licensed clinical social workers to population than the other seven counties in the region and a higher ratio of psychiatrists to population than six of the seven other counties. Seven rural counties – Glenn, Lake, Mariposa, Modoc, Plumas, Sierra, and Trinity – have no psychiatrists.

Region-level supplies of pre-license behavioral health professionals generally correlate with the geographic location of education programs. Table 3.5 indicates that the Greater Bay Area and Los Angeles regions generally have per capita ratios that are at or above the statewide average. For most provider types, the San Joaquin Valley, Inland Empire, and Northern and Sierra regions have below average per capita ratios. The exceptions are LPCC interns in the Inland Empire and ACSWs in the Northern & Sierra region.

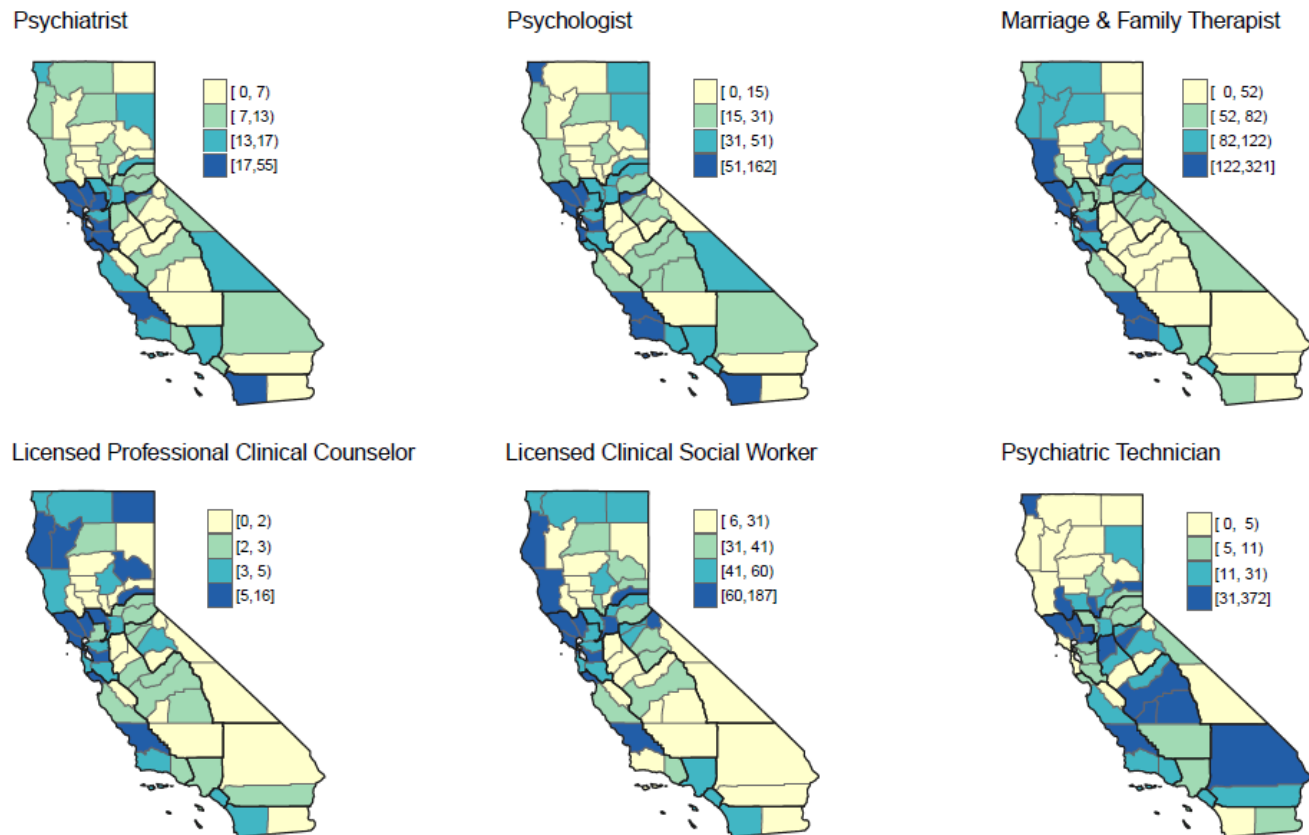
Table 3.5. Actively Registered Pre-license Behavioral Health Providers per 100K Population by Region, 2016

Region	Registered Psychologist	Psychological Assistant	LMFT Intern	LPCC Intern	ACSW
Central Coast	0.5	2.4	47.2	3.4	26.0
Greater Bay Area	1.7	4.2	44.6	5.1	35.0
Inland Empire	0.1	1.2	34.4	5.3	20.4
Los Angeles	0.8	6.4	47.2	2.9	43.6
Northern & Sierra	0.1	1.1	30.5	3.1	33.9
Orange	0.6	4.3	41.8	4.5	25.4
Sacramento Area	0.1	2.6	35.7	5.1	28.2
San Diego Area	0.5	4.4	38.1	5.1	24.4
San Joaquin Valley	<0.1	1.2	27.7	2.3	22.6
California	0.7	3.8	40.6	4.0	31.5

Sources: Department of Consumer Affairs (DCA) Licensee Masterfile, June 2016; US Census Bureau, Population Division, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2016.

Research Report

Figure 3.3. Ratios of Behavioral Health Professionals per 100,000 Population by County, 2016



Sources: Medical Board of California Mandatory Survey, 2015; Department of Consumer Affairs (DCA) Licensee Masterfile, June 2016; US Census Bureau, Population Division, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2016.

Note: Per capita counts of psychiatrists include active licensees who have completed training (i.e. residents and fellows are excluded).

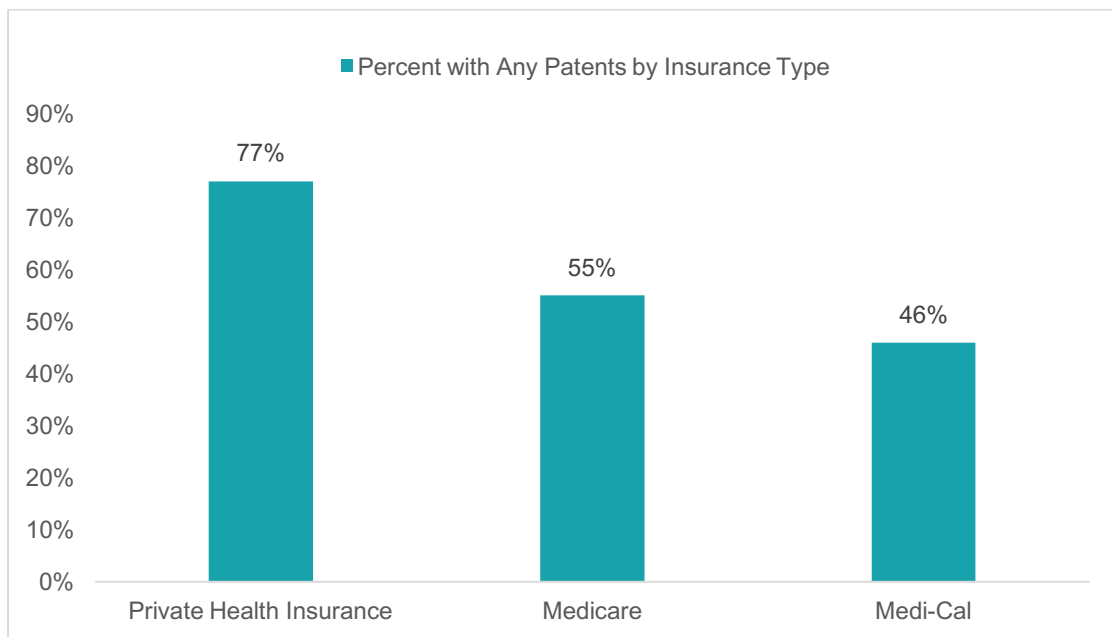
Research Report

Acceptance of Health Insurance

The numbers of licensed professionals in behavioral health occupations are overestimates of the actual supply of behavioral health professionals available to care for Californians. As noted previously, some LCSWs do not provide behavioral health or counseling services. In addition, some behavioral health professionals maintain their licenses after they retire.

For many Californians, access to behavioral health professionals also depends on the extent to which they accept reimbursement from health insurers. Many people who need behavioral health services cannot afford to pay the full cost out-of-pocket. However, aside from psychiatrists, the percentage of licensed behavioral health professionals who accept any form of health insurance is unknown. In 2015, the Medical Board partnered with the University of California, San Francisco to conduct a voluntary survey of physicians (MDs) that included questions about the types of health insurance they accept. The survey found that 77% of psychiatrists had patients with private insurance. Only 55% had any Medicare patients and only 46% had any Medi-Cal patients. (See Figure 3.4). Psychiatrists were also less likely to accept new Medi-Cal patients than physicians in other specialties and less likely to accept Medicare patients than physicians in all other specialties except pediatricians, who do not typically treat Medicare beneficiaries because the program primarily enrolls adults.¹⁴

Figure 3.4. California Psychiatrists' Acceptance of Health Insurance, 2015



Demographic Characteristics

The demographic characteristics of the behavioral health care workforce are important indicators of future workforce needs. In particular, data on the age distribution of the current workforce in behavioral health occupations indicate occupations in which large numbers of workers are at or near retirement age. Close attention should be paid to the numbers of new graduates of training programs in these occupations to determine whether future supply will be sufficient to meet future demand. Demographic data also indicate the extent to which current

providers reflect the diversity of the patient population they treat. Research has shown that concordance of race/ethnicity strengthens the patient-physician relationship through higher levels of patient trust and satisfaction.^{15,16}

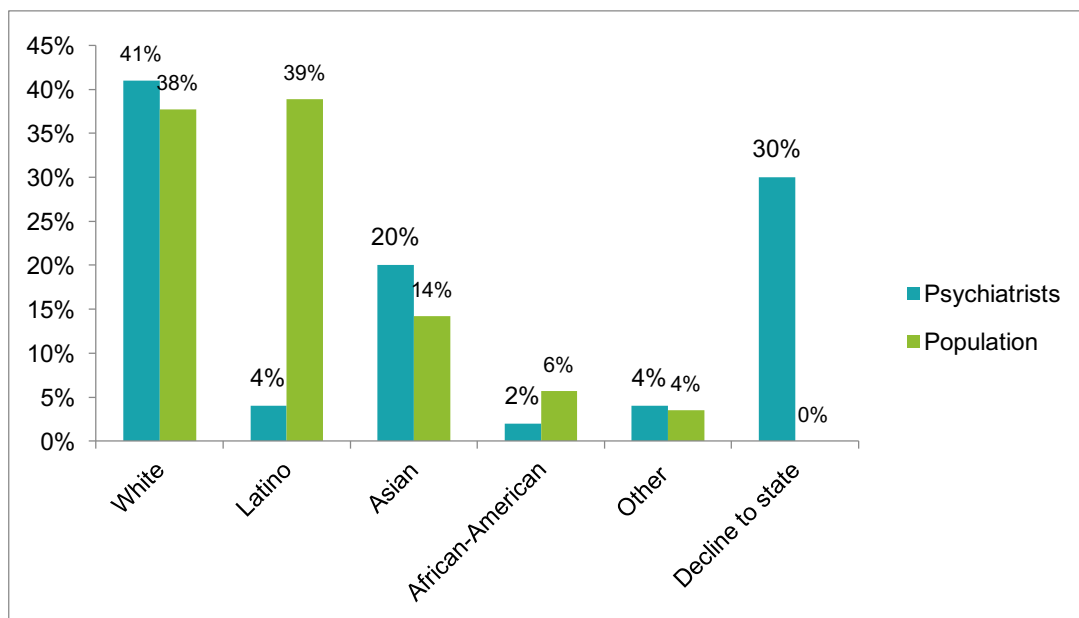
For all occupations except psychiatrists, estimates are derived from the American Community Survey, Public Use Microdata Sample (ACS). Data describing psychiatrists are from the Medical Board of California's mandatory survey.

Race/Ethnicity

Psychiatrists. Latinos and African-Americans were underrepresented among psychiatrists relative to their percentages of California's population. (See Figure 3.4.) Latinos constituted 38% of Californians but only 4% of California's psychiatrists; African-Americans constituted 6% of the state's population but only 2% of its psychiatrists. A major limitation of the Medical Board data is that 30% of psychiatrists did not report their race/ethnicity. If some Latino and African-American psychiatrists did not report their race/ethnicity, the actual percentages may be higher but it is unlikely that the differences would be large enough to change the conclusion that Latinos and African-Americans are underrepresented among psychiatrists.

Data describing the racial and ethnic composition of psychiatrists are presented separately from psychologists, counselors, and social workers because the response categories used in the two different surveys are not consistent. The California Medical Board data include two response options that do not exist in the ACS data: "decline to state" and "did not answer." In addition, the sample size for psychiatrists in the Medical Board data is sufficiently large to produce regional estimates, whereas the sample sizes in the ACS data for other behavioral health professions are too small to permit regional analyses.

Figure 3.4. California Psychiatrists and Population by Race/Ethnicity, 2015



Sources: Medical Board of California, mandatory survey, 2015; Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2016, U.S. Census Bureau, Population Division.

Table 3.6. compares the 2015 racial and ethnic composition of psychiatrists practicing in each region to California overall. The greatest variation was in the percentage of psychiatrists who were Asian, which ranged from a low of 14% in the Central Coast region to a high of 39% in the San Joaquin Valley. Percentages of psychiatrists who were Latino or African-American also varied. The percentage of Latinos ranged from 2% to 7%, and the percentage of African-Americans ranged from 0% to 6%.

Table 3.6. Active Psychiatrists by Race and Ethnicity and Region, 2015

Region	White	Latino	Asian	Black or African American	Other	Declined to State or Did Not Report	Number of professionals
Central Coast	41%	4%	14%	2%	4%	35%	358
Greater Bay Area	45%	2%	17%	2%	3%	31%	1922
Inland Empire	28%	6%	36%	6%	4%	21%	347
Los Angeles	40%	5%	17%	3%	5%	29%	1515
Northern & Sierra	47%	2%	16%	0%	2%	34%	122
Orange	34%	3%	27%	2%	4%	30%	326
Sacramento Area	40%	2%	23%	3%	3%	29%	333
San Diego Area	44%	7%	15%	1%	3%	31%	560
San Joaquin Valley	25%	7%	39%	3%	2%	24%	298
California	41%	4%	20%	2%	4%	30%	5,781

Source: Medical Board of California, mandatory survey, 2015.

Note: The Medical Board data describe psychiatrists who have completed training and practice in California; residents and fellows are excluded. *Other* includes Alaska Native, American Indian, Native American, Fijian, Guamanian, Hawaiian, Samoan, Tongan, Other Pacific Islander, and Other race/ethnicity.

Psychologists, Counselors, and Social Workers. Table 3.7. presents data describing the racial and ethnic composition of psychologists, counselors, and social workers employed in California over the period 2011-2015. (Due to small sample size, psychologists identified as Black or African American are included with *Other* in the table below.) The share of Latino counselors and social workers was three times as large to as the share of Latino psychologists. As noted, the share of Black or African American psychologists was too small to estimate; in contrast, 8% of counselors and 11% of social workers identified as Black or African American. While the findings for counselors and social workers are encouraging, Latinos remain underrepresented in these occupations relative to their proportion of California's population (23% of counselors and 24% of social workers vs. 38% of the population). As noted above, regional estimates are not presented for the demographic characteristics of persons in these professions because the sample sizes for them in the ACS dataset are too small.

Table 3.7. Employed Psychologists, Counselors, and Social Workers by Race and Ethnicity, California, 2011-2015

Profession	White	Latino	Asian	Black or African American	Other	Estimated number of professionals
Psychologists	79%	8%	8%	--	5%	15,359
Counselors	57%	23%	10%	8%	2%	35,690
Social Workers	50%	24%	11%	11%	3%	32,749

Source: American Community Survey, Public Use Microdata Sample 2011-2015, 5-year estimates.

Note: The ACS data were limited to employed psychologists with a doctoral degree, employed counselors with a master's or higher degree, and employed social workers with a master's or higher degree. *Other* includes Native Hawaiian or Pacific Islander, American Indian, Alaska Native, Some other race, and Two or more races (and in the case of psychologists, Black or African American). Small sample counts prevented the generation of estimates for these groups individually.

Gender

Table 3.8. demonstrates there are substantial differences in the gender composition of psychiatrists, psychologists, counselors and social workers employed in California. Psychiatry stands out for the much smaller share of women in the workforce (37%) as compared to the other occupations. Women accounted for at least two-thirds of the workforce in each of the other three occupations.

Table 3.8. Behavioral Health Care Professionals by Gender, California, 2011-2015

Profession	Male	Female	Estimated number of professionals
Psychiatrists (2015)	63%	37%	5,781
Psychologists	33%	67%	15,359
Counselors	25%	75%	35,690
Social Workers	18%	82%	32,749

Sources: American Community Survey, Public Use Microdata Sample 2011-2015, 5-year estimates; Medical Board of California, mandatory survey, 2015.

Note: See note below Table. 3.7.

Age Distribution

Table 3.9. demonstrates notable differences in the age profiles of psychiatrists and psychologists in comparison to counselors and social workers. Large percentages of psychiatrists and psychologists are age 60 years or older; nearly half of all psychiatrists (45%) and more than one-third of psychologists (37%) were over 60 years old. The shares of counselors and social workers over the age of 60 were considerably smaller (17% of counselors, and 13% of social workers). Conversely, the shares of counselors and social workers under the age of 40 (both 41%) were much larger in comparison to psychiatrists (11%) and psychologists (23%).

Table 3.9. Behavioral Health Care Professionals by Age Group, California, 2011-2015

Profession	Under 40 years old	40 to 60 years old	Over 60 years old	Estimated number of professionals
Psychiatrists (2015)	11%	44%	45%	5,781
Psychologists	23%	40%	37%	15,359
Counselors	41%	42%	17%	35,690
Social Workers	41%	46%	13%	32,749

Sources: American Community Survey, Public Use Microdata Sample 2011-2015, 5-year estimates; Medical Board of California, mandatory survey, 2015.

Note: See note below Table. 3.7.

Employment and Wages

Table 3.10. presents estimated employment (number of jobs) and mean annual wage for each behavioral health occupation identified in the OES survey. The OES estimates have several important limitations. First, the OES employment estimates represent jobs, not individual persons. Second, with the exception of psychiatrists and psychiatric technicians, occupational groups may include both positions that require licensure and positions that do not require licensure. Mean annual wages for positions that require licensure may be higher. Third, these data may include positions that do not primarily involve the providing of behavioral health care services. For example, some psychologists may specialize in experimental or organizational psychology and may work as researchers or as consultants. Similarly, some social workers provide case management services in settings outside behavioral health, such as general hospitals and social services agencies. Finally, these data are based on a sample survey, which means the true value of the estimate is somewhere within a given range. The practical significance of this is that differences among marriage and family therapists, child, family, and school social workers, and mental health and substance abuse social workers are not statistically significant. Nonetheless, they provide important contextual information on the cost of employing persons in the respective professions.

The OES estimates suggest that child, family, and school social workers accounted for the largest percentage of jobs among behavioral health occupations (25%) and psychiatrists accounted for the smallest percentage of jobs (3%). When combined, the three categories of social workers accounted for 47% of jobs among behavioral health occupations. Estimates of mean annual wages ranged from a low of \$44,450 for substance abuse and behavioral disorder counselors to a high of \$252,030 for psychiatrists. (Substance abuse and behavioral disorder counselors are not included in the analyses of data from the licensing boards because California does not require licensure for this occupation.) As noted previously, the OES data cannot be used to generate regional estimates.

Table 3.10. Estimated Employment and Mean Annual Wage by Behavioral Health Profession, California, May 2016

Occupation	Estimated Number of Jobs	Estimated Mean Annual Wage
Psychiatrists	3,370	\$252,030
Clinical, Counseling, & School Psychologists	18,990	\$90,210
Marriage & Family Therapists	10,350	\$55,950
Mental Health Counselors	15,300	\$47,070
Child, Family, & School Social Workers	30,310	\$54,290
Healthcare Social Workers	14,530	\$71,080
Mental Health & Substance Abuse Social Workers	12,850	\$64,320
Substance Abuse and Behavioral Disorder Counselors	9,050	\$44,450
Psychiatric Technicians	7,950	\$57,480

Source: Occupational Employment Statistics Survey, Bureau of Labor Statistics, May 2016

Note: the OES data do not indicate whether jobs are held by persons who are licensed behavioral health professionals or by unlicensed persons. For example, a mental health or substance abuse counselor job may be held by an unlicensed person or by a person who is licensed as a LMFT, LPCC, or LCSW.

According to 2014 OES estimates for California, employment by work setting varied substantially across the different behavioral health occupations. For example, nearly half of psychiatrists (48%) were employed in an office-based setting; among the other occupations, office-based settings accounted for no more than 19% of employment. Hospital-based settings accounted for 83% of employment among psychiatric technicians, but no more than 16% of employment for any of the other professions. Employment in a residential care facility was much more common among substance abuse and behavioral disorder counselors (34% of employment) and mental health counselors (27% of employment) in comparison to other occupations. Individual and family services agencies were a comparatively significant source of employment for LMFTs, child, family, and school social workers, as well as both mental health counselors and substance abuse/behavioral disorder counselors. Finally, outpatient care center settings were an important source of employment for LMFTs (29% of employment), but not for other types of providers. (A series of tables describing 2014 employment by setting for each occupation can be found in Appendix B.)

Chapter 4: Pipeline of Behavioral Health Workforce Trainees

Findings from the previous chapter indicate that California's behavioral health workforce is not well-distributed across the state and is also not as racially/ethnically diverse as California's population. In psychiatry and psychology, large percentages of professionals are over age 60 years. These findings prompt questions about the adequacy of the future behavioral health workforce in California. Information about recent graduates of behavioral health professions education programs is important for assessing the extent to which new entrants will ease workforce deficits. This chapter presents information describing graduates of education programs in each region and California overall.

Sources of Data

Table 4.1. lists the sources of data utilized to describe persons completing behavioral health education programs in California. There is no single source of data that describes the supply and demographic characteristics of behavioral health professions trainees. The tables present the best available source of data for each type of training program. Graduates of substance abuse/addiction counseling programs are included because this is the one unlicensed behavioral health profession for which data on trainees are available.

Table 4.1. Sources of Data on the California's Current Behavioral Health Trainees

	Psychiatry Residents and Child and Adolescent Psychiatry Fellows	Clinical or Counseling Psychology	Social Work	Psychiatric Technician	Substance Abuse/Addiction Counselors	Psychiatric Mental Health Nurse Practitioner
Number of Trainees	National Resident Matching Program, 2017	Integrated Postsecondary Education Data System				BRN report on post-licensure education, 2015=2016
Demographic Characteristics (i.e., race, ethnicity, gender)	Medical Board of California, Mandatory Survey, 2015	Integrated Postsecondary Education Data System				Not available
Institutional Sector	National Resident Matching Program, 2017	Integrated Postsecondary Education Data System				BRN list of approved NP programs, 2017

Data describing first-year psychiatry residents and fellows were obtained from the National Resident Matching Program (NRMP) and the Medical Board of California mandatory survey. Data on graduates of medical schools were not analyzed because physicians do not choose a specialty until they enter residency. For psychiatric-mental health nurse practitioners (PMHNP), data on the number of graduates were extracted from the California Board of Registered Nursing's (BRN) 2015-2016 report on post-licensure nursing education programs.¹⁷ The BRN's list of approved NP education programs was used to identify the types of educational institutions that offer PMHNP education. Data on demographic characteristics of graduates of PMHNP programs were not available. No data were available regarding graduates of psychiatric mental health clinical nurse specialist programs.

Data describing graduates of all other education programs were obtained from the Integrated Postsecondary Education Data System (IPEDS), a system of annual surveys administered by the U.S. Department of Education's National Center for Education Statistics (NCES). These surveys collect information on enrollments, completions, and other characteristics from more than 7,500 liberal arts colleges, research universities, community colleges, technical schools, and other programs that participate in federal student aid programs. At the time this report was

prepared, 2015 was the most recent year for which completions data were available. Some schools report statistics at the system level rather than for each individual program. For this reason, additional steps were taken to validate IPEDS data, especially data used in reporting the region-level supply of behavioral health professions graduates.

Limitations of Sources of Data

One of the limitations of using IPEDS data to describe graduates of health professions education programs is the practice of multi-campus institutions reporting data at the corporate system level. For example, an institution such as the University of Phoenix may offer Board-approved programs that prepare graduates for licensure as an LMFT or LPCC at multiple campuses across the state. However, rather than each campus responding to the IPEDS survey to provide campus-specific student data, the University of Phoenix responds to the survey as a single corporate entity. This has the effect of making it appear as though there is just one program at one campus in the state, thus biasing any region-level analysis of the educational pipeline.

A second limitation of the IPEDS data is that many schools that offer Board-approved LMFT or LPCC programs, or a doctoral level program in clinical or counseling psychology, offer other graduate-level programs in psychology that do not prepare individuals to become licensed behavioral health professionals. For example, some of these schools offer MA/MS or PhD programs in psychology that prepare people for careers in non-clinical specialties of psychology, such as experimental psychology and organizational psychology. In some cases, the schools report IPEDS data in a way that makes it impossible to distinguish graduates who have trained to pursue licensure as a behavioral health professional from graduates who have not.

A third limitation is that some schools offer their graduate-level degree programs via distance education. In the IPEDS data there is no way to distinguish graduates who completed a program online versus on campus and there is no way to distinguish whether graduates who completed an online program based in California are residents of California or another state.

Finally, some Board-approved programs do not participate in federal student aid programs and are therefore not required to participate in the IPEDS surveys; there is no way to know how many graduates these programs produce. All of these limitations have an effect on the region-level analysis presented here. In some cases these limitations will lead to an overestimate of the number of graduates; in other cases, they will have the opposite effect.

Supplies of Behavioral Health Trainees

Psychiatry Residents

Table 4.2. presents NRMP data on first-year residents in psychiatry and first-year fellows in child and adolescent psychiatry (the only sub-specialty of psychiatry in which fellowship programs in California participate in the NRMP). Child and adolescent psychiatry fellowships enroll physicians who have completed a residency in psychiatry and wish to obtain additional training in the care of children and adolescents with psychiatric needs. The NRMP data indicate that psychiatric residency and fellowship programs train comparatively few people relative to other behavioral health professions. In 2017, for California overall, there were 148 first-year psychiatry residents and 46 first-year child and adolescent psychiatry fellows. First-year psychiatry residents included 144 residents in psychiatry residency programs and four residents in combined psychiatry-family medicine programs. The Los Angeles region had the largest number of first-year psychiatry residents (42) followed by the Greater Bay Area (36). Los Angeles and the Greater Bay Area also have the largest numbers of first-year child and adolescent

psychiatry fellows. The Central Coast and the Northern & Sierra regions do not have any institutions that sponsor psychiatry residencies or child & adolescent psychiatry fellowships; the Inland Empire region does not have any institutions that sponsor child & adolescent psychiatry fellowships. The two combined psychiatry-family medicine programs are located in the Sacramento area and the San Diego area. (See Appendix C for a list of counties in each region.)

Table 4.2. First-year Psychiatry Residents and Child and Adolescent Psychiatry Fellows by region, 2017

	First-year Psychiatry Residents	First-year Child & Adolescent Psychiatry Fellows
Central Coast	0	0
Greater Bay Area	36	13
Inland Empire	21	0
Los Angeles	42	19
Northern & Sierra	0	0
Orange	9	4
Sacramento Area	13	3
San Diego Area	12	4
San Joaquin Valley	15	3
California	148	46

Sources: National Resident Matching Program, NRMP Program Results 2013-2017 Main Residency Match; National Resident Matching Program, NRMP Program Results 2013-2017 Specialties Matching Service.

Graduates of Psychiatric Mental Health Nurse Practitioner Programs

The California BRN report on post-licensure nursing education in 2015-2016 contains data about the percentage of persons completing a NP education program by specialty.¹⁷ These data can be extrapolated to estimate the number of graduates of PMHNP programs. According to these estimates, 6.5% of persons who completed an NP education program in 2015-2016 completed a PMHNP program, constituting 56 of the 866 persons who completed an NP education program that year. This number is substantially higher than the number of graduates in 2013-2014 and 2014-2015 (47 and 40, respectively).

Graduates of Clinical & Counseling Psychology and Social Work Programs

Table 4.3. describes 2015 graduates of California training programs in clinical or counseling psychology (including training programs that prepare students to practice as licensed marriage and family therapists) and social work programs at the master's and doctoral levels. The social work data describe graduates of programs that have been approved by the California Board of Behavioral Sciences (BBS) as meeting the educational requirements to become a licensed clinical social worker. The clinical or counseling psychology master's degree data represent schools that offer programs approved by the California BBS as meeting the educational requirements for licensure as a marriage & family therapy (LMFT) or licensed professional clinical counselor (LPCC). Because there is no comprehensive list of approved programs published by the California Board of Psychology, the clinical or counseling psychology doctoral degree data represent graduates of all doctoral-level programs, excepting

those that are explicitly unrelated to behavioral health care practice (e.g. industrial and organizational psychology, or programs that prepare individuals for a career in academic research).

Table 4.3. presents the total number of graduates of clinical and counseling psychology and social work programs at the master's and doctoral level in 2015 by type of degree and region. The table reflects the different degree requirements for licensure (a master's degree for LCSWs, LMFTs, or LPCCs; a doctoral degree for psychologists). Master's degrees in clinical and counseling psychology accounted for the largest number of graduates (4,629), more than twice the number of graduates of master's programs in social work (1,937). There were only 18 doctoral degrees in social work awarded in 2015, all of which were granted by programs located in the Greater Bay Area and Los Angeles regions.

Many graduates of master's of social work programs do not provide behavioral health services, and instead provide community health, client navigation, care coordination, and other services. A survey conducted in 2004 found that nationwide 40% of licensed social workers provided behavioral health services.¹³ If employment patterns among 2015 graduates of master's of social work programs in California are consistent with this national estimate, only 775 of the 1,937 of graduates will provide behavioral health services

There were no doctoral-level clinical or counseling psychology programs in the Northern and Sierra, San Joaquin Valley, or Sacramento Area regions that reported graduates in 2015. There are doctoral-level psychology programs at UC Merced (San Joaquin Valley region) and UC Davis (Sacramento Area region), but these programs state explicitly that they do not prepare graduates for employment as a clinical or counseling psychologist. There was a single master's-level program in clinical and counseling psychology in the Sacramento Area region that reported graduates in 2015.

Table 4.3. Graduates of Clinical or Counseling Psychology and Social Work Programs by Degree Type and by Region (Number), 2015

Region	Clinical or Counseling Psychology		Social Work	
	Master's	Doctoral	Master's	Doctoral
Central California	328	138	27	--
Greater Bay Area	1,062	270	390	9
Inland Empire	205	26	121	--
Los Angeles	1,465	234	701	9
Northern & Sierra	63	--	124	--
Orange	692	60	138	--
Sacramento Area	14	--	119	--
San Diego Area	691	301	131	--
San Joaquin Valley	109	--	186	--
California	4,629	1,029	1,937	18

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey.

Note: These data exclude the MSW program at the University of Southern California (USC) because USC offers its program nationally via distance learning and the IPEDS data do not distinguish between graduates who were residing in California at the time they completed the program and graduates who were residents of another state.

In 2015, USC reported 1,434 MSW graduates, which is over 40% of the statewide total and more than seven times the number of graduates reported by the next largest program.

Graduates of Psychiatric Technician and Substance Abuse/Addiction Counseling Programs

Table 4.4. presents the total number of graduates of psychiatric technician and substance abuse/addiction counseling programs in 2015 by type of degree and region. Psychiatric technician is a licensed profession; however, there is no stated degree credential required for licensure. Substance abuse/addiction counselor is an unlicensed profession (although these professionals may be certified) that also does not have a minimum degree requirement. Training programs for both occupations typically occur at the associate degree level, or in 1-2 year programs resulting in a non-degree certificate. For both program types, most graduates (approximately 75%) complete non-degree certificate programs. There were no psychiatric technician education programs in either the Sacramento Area or San Diego Area regions. Programs in the San Joaquin Valley region produced more than 40% of all psychiatric technician program graduates in California in 2015. In contrast, substance abuse/addiction counseling programs were relatively well-distributed across the state.

Table 4.4. Graduates of Psychiatric Technician and Substance Abuse/Addiction Counseling Programs by Degree Type and by Region (Number), 2015

Region	Psychiatric Technician		Substance Abuse/ Addiction Counseling	
	Non-degree below AD	Associate	Non-degree below AD	Associate
Central California	70	5	69	32
Greater Bay Area	88	26	118	31
Inland Empire	34	18	171	17
Los Angeles	101	8	600	173
Northern & Sierra	0	2	27	9
Orange	15	7	102	39
Sacramento Area	--	--	51	23
San Diego Area	--	--	90	44
San Joaquin Valley	184	101	62	13
California	492	167	1,290	381

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey

Geographic Distribution of Behavioral Health Training Programs

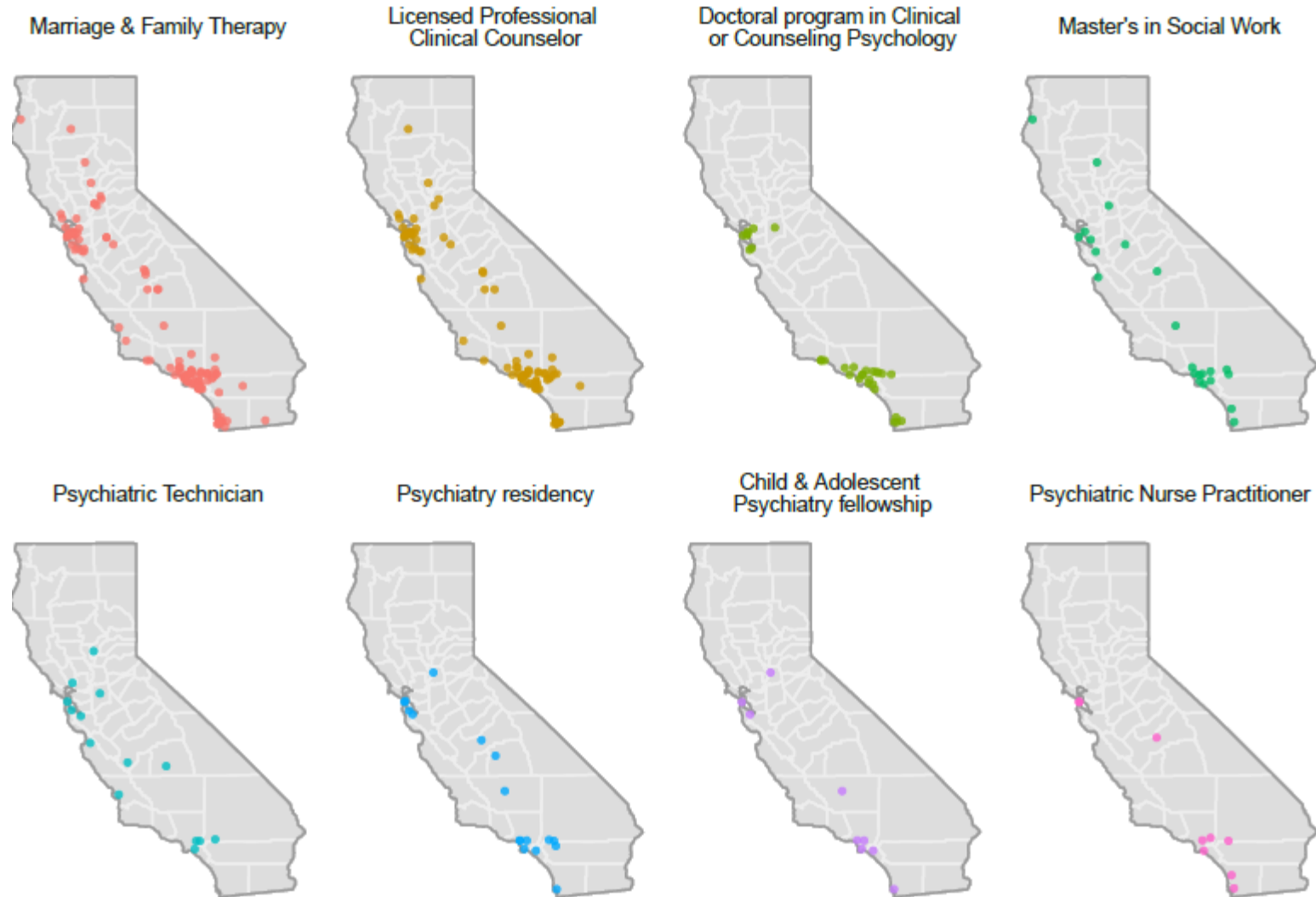
Assessment of the geographic distribution of behavioral health training programs across California is important to assess how well training opportunities are distributed across the state. If training programs are nearby, organizations that provide behavioral health services are likely to have less difficulty recruiting behavioral health professionals.

As Figure 4.1 illustrates, the geographic distribution of behavioral health training programs across California varied across different types of training programs. LMFT, LPCC, and LCSW training programs are located in most parts of California. By contrast, psychiatry residency programs and psychiatric technician training programs are concentrated in large metropolitan areas on the coast and in the San Joaquin Valley. There is only one psychiatry

residency programs north of Sacramento and none on the Central Coast between the Greater Bay Area and Los Angeles. Doctoral programs in clinical or counseling psychology and PMHNP education programs are even more poorly distributed. There are no doctoral programs in clinical or counseling psychology north of Sacramento and none between the Greater Bay Area and Santa Barbara. Aside from one post-master's degree program in Fresno, all PMHNP education programs are located in the Greater Bay Area or large metropolitan areas in Southern California. The post-master's degree PMHNP program in Fresno takes one year to complete and is oriented to NPs who already possess a master's degree in a primary care specialty and who are seeking to expand their scope of practice to include psychiatric mental health services.

Research Report

Figure 4.1. Geographic Distribution of Behavioral Health Training Programs, California, 2017



Research Report

Demographic Characteristics of Behavioral Health Trainees

Race/Ethnicity

Table 4.5. compares the racial and ethnic composition of psychiatry residents in California with the state's general population. The table presents Medical Board data describing psychiatry residents who have renewed their initial license to practice, which typically signifies they are completing their third (or subsequent) year of training. These data indicate that psychiatry residents who identify as Latino were substantially underrepresented relative to the general population. In 2015 Latinos accounted for 38.9% of the state's population compared to just 5.5% of psychiatry residents. The percentage of Latinos among psychiatry residents is greater than the percentage among practicing psychiatrists (5.5% vs. 4%) but is still much lower than the percentage of Latinos in California's general population. Table 4.4 also shows that Asians represented a larger share of psychiatry residents relative to the general population (23.8% of residents versus approximately 14.2% of the state's population). It is important to acknowledge that the racial and ethnic background for more than one-quarter (27.6%) of the psychiatry residents represented by the survey data is unknown because residents declined to answer the question on the Medical Board's mandatory survey about race/ethnicity. Regional estimates are not presented because the numbers of residents in some regions is so small that the number of residents in some racial and ethnic groups is very small (e.g., less than 5 residents).

Table 4.5. Psychiatry Residents by Race and Ethnicity, California, 2015

Description	White	Latino	Asian	Black or African-American	Other	Decline to State/Unknown	Total Residents/Population
Psychiatry Residents	35.0%	5.5%	23.8%	3.4%	4.5%	27.6%	290
General Population	37.7%	38.9%	14.2%	5.7%	3.5%	--	39,144,818

Sources: Medical Board of California, mandatory survey, 2015; Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2016, U.S. Census Bureau, Population Division

Note: Other includes Alaska Native, American Indian, Native American, Fijian, Guamanian, Hawaiian, Samoan, Tongan, Other Pacific Islander, and Other race/ethnicity. Estimates of the number of psychiatry residents sourced from the Medical Board dataset differ from those derived from the National Resident Matching Program (NRMP) because the NRMP data include only first year residents. The Medical Board data include all residents who have renewed their licensure to practice medicine (physicians must complete one year of residency to obtain their license). Data describing the racial and ethnic composition of child and adolescent psychiatry fellows are not available.

Table 4.6. presents data describing the racial and ethnic composition of graduates of clinical or counseling psychology (by type of degree), master's in social work (MSW), psychiatric technician, and substance abuse/addiction counseling programs in California. It reveals important differences in the racial and ethnic composition of graduates of the different types of behavioral health professions education programs. Graduates identified as White were substantially overrepresented among graduates of clinical or counseling psychology programs at both the master's and doctoral level relative to the general population. In contrast, Latinos were

substantially underrepresented among graduates of clinical or counseling psychology programs. Table 4.5 indicates that Latinos were best represented among graduates of MSW and psychiatric technician programs, achieving population parity. Black or African American graduates were generally overrepresented among all program types relative to the population; Asian graduates were generally underrepresented, except in psychiatric technician programs.

A series of tables describing the racial and ethnic composition of graduates for each program type by region can be found in Appendix C. The data indicate that graduates of programs in the Inland Empire region were generally more racially and ethnically diverse than graduates of programs in other regions. The Inland Empire had the largest share of non-White graduates among all regions, for all programs except substance abuse/addiction counseling where it had the second-largest share behind the Los Angeles region. Other key regional findings include the fact that the share of graduates identified as White was larger among doctoral-level clinical or counseling psychology programs in comparison to master's degree programs across every region of state except the Central Coast (where the shares were approximately equal). In contrast, the share of Latino clinical or counseling psychology master's program graduates was 2 – 3 times larger in comparison to doctoral programs for all regions except the Bay Area. Black or African American students were substantially overrepresented among graduates of all program types in the Inland Empire region, and among substance abuse/addiction counseling program graduates in all regions. With some exceptions, the data indicate that Asian students are generally underrepresented among graduates of behavioral health professions education programs across all regions.

Table 4.6. Graduates of Behavioral Health Professions Education Programs by Race and Ethnicity, California, 2015

Description	Clinical or Counseling Psychology		MSW	Psychiatric Technician	Substance Abuse/Addiction Counseling	General Population
	Master's	Doctoral				
White	47.4%	58.1%	30.5%	21.4%	37.0%	37.7%
Latino	20.1%	11.3%	38.6%	37.2%	27.8%	38.9%
Asian	6.5%	9.4%	8.5%	20.2%	2.2%	14.2%
Black or African American	8.6%	6.0%	9.3%	14.1%	22.4%	5.7%
Two or more races	3.2%	3.7%	3.3%	3.2%	3.4%	2.7%
Other	0.9%	0.7%	0.7%	1.5%	1.6%	0.8%
Unknown	13.4%	10.9%	8.1%	2.4%	5.4%	--
Total Graduates/Population	4,629	1,029	1,937	659	1,671	39,144,818

Sources: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey; Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2016, U.S. Census Bureau, Population Division

Note: Other race/ethnicity includes American Indian or Alaska Native and Native Hawaiian or Pacific Islander. There is no category for "unknown" race/ethnicity in the Census population data.

Note: The master's in social work (MSW) data exclude the program at the University of Southern California (USC). See the note to Table 4.2. for an explanation.

Note: Estimates for graduates of psychiatric technician and substance abuse/addiction counseling programs include graduates of associate degree programs and non-degree programs below the associate degree level.

Gender

Table 4.7 presents 2015 data describing the gender of psychiatry residents in California. Statewide, 55.5% of psychiatry residents were female and 45.5% were male. The share of female psychiatry residents is larger than the share of practicing psychiatrists (37%), reflecting the increase in the number of women pursuing careers in medicine over the past 50 years. Regional estimates are not presented because in some regions the number of residents by gender is very small (e.g., less than five residents).

Table 4.7. Psychiatry Residents by Gender California, 2015

Description	Male	Female	Total Reported Graduates
Psychiatry Residents	45.5%	55.5%	290

Source: Medical Board of California, 2015.

Note: Data describing the gender composition of child and adolescent psychiatry fellows are not available.

Table 4.8 presents data describing the gender of graduates of behavioral health education programs in California. Female graduates outnumber male graduates in all five types of education programs. The gender composition imbalance was much greater among graduates of clinical or counseling psychology programs (at both the master's and doctoral degree-levels) and master's degree programs in social work, relative to psychiatric technician or substance abuse/addiction counseling programs.

Table 4.8. Graduates of Behavioral Health Education Programs by Gender, California, 2015

Description	Clinical or Counseling Psychology		MSW	Psychiatric Technician	Substance Abuse/Addiction Counseling
	Master's	Doctoral			
Male	19.7%	21.6%	15.7%	34.3%	39.7%
Female	80.3%	78.4%	84.3%	65.7%	60.3%
Total graduates	4,629	1,029	1,937	659	1,671

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey

Note: The master's in social work (MSW) data exclude the program at the University of Southern California (USC). See the note to Table 4.3. for an explanation.

A series of tables describing the gender composition of graduates of each program type by region can be found in Appendix C. The data in these tables indicate that the gender composition of graduates of clinical or counseling psychology programs at both the master's and doctoral-level, MSW programs, and psychiatric technician programs was relatively consistent across the state. Exceptions included the Sacramento region, where male graduates represented larger shares of graduates of clinical or counseling psychology programs at both degree levels, the Northern & Sierra region where male graduates represented a considerably smaller share of graduates of MSW programs, and the Central California region where male graduates represented a considerably larger share of graduates of psychiatric technician programs. By comparison, there is more regional variation in gender composition among graduates of substance abuse/addiction counseling programs.

Types of Educational Institutions/Institutional Sectors

Historically, degree-granting higher education institutions in the United States were either public or private nonprofit. The rapid growth of degree-granting, for-profit educational institutions since 2000 has been documented extensively.¹⁸ For-profit institutions have played a significant role in providing entry-level training in the health professions at the two-year degree and less-than-two-year non-degree level.^{19,20} There are also many for-profit educational institutions that offer health professions education at both the bachelor's and graduate degree levels. The tuition and fees charged by private for-profit and private nonprofit institutions are considerably higher than those charged by public institutions, which leads many students to take out large loans to finance their education.²¹ The tables in this section present data describing the composition of 2015 graduates of the selected behavioral health professions education programs, and 2017 first-year psychiatry residents and first-year child and adolescent psychiatry fellows by institutional sector (public, private nonprofit, and private for-profit).

Table 4.9. presents residency and fellowship data that demonstrate that in California all psychiatry residency programs are sponsored by public and private nonprofit institutions. (Tables describing the institutional sector composition of residents and fellows for each region can be found in Appendix B.) The issue of cost is not relevant in the context of graduate medical education because residents and fellows do not pay tuition and are paid a stipend while they complete training.

Table 4.9. First-Year Psychiatry Residency Positions and First-Year Child and Adolescent Psychiatry Fellowship Positions by Institutional Sector, California, 2017

Description	Public	Private Nonprofit	Private For-profit	Total Number
Psychiatry Residents	67%	33%	0%	148
Child and Adolescent Psychiatry Fellows	63%	37%	0%	46

Sources: National Resident Matching Program, 2017

Table 4.10. presents 2017 data describing how California's PMHNP programs are distributed by institutional sector. Program data are presented because student data (i.e. graduates per program) are not available. These data refer to PMHNP programs at institutions approved by the California BRN.²² In 2017, a total of nine institutions in California offered PMHNP training programs. Five of these programs (56%) are operated by public universities and four programs (44%) are operated by private nonprofit universities.

Table 4.10. Psychiatric Mental Health Nurse Practitioner Education Programs by Institutional Sector, California, 2017

Description	Public	Private Nonprofit	Private For-profit	Total Number
Psychiatric Mental Health NP Programs	56%	44%	0%	9

Source: California Board of Registered Nursing. 2015-2016 Annual School Report, 2017.

Table 4.11. presents data describing how the supply of graduates of California's clinical or counseling psychology, social work, psychiatric technician, and substance abuse/addiction counselor training programs are distributed across public, private nonprofit, and private for-profit educational institutions. These data demonstrate that the distribution of graduates across institutional sectors varied considerably across different program and degree types. Master's in social work and psychiatric technician programs are concentrated in the public sector; more than 90% of graduates of these programs attended a public institution in 2015. In contrast, nearly 90% of graduates of master's degree programs in clinical or counseling psychology program and over 98% of graduates of doctoral degree programs in this field attended a private-sector institution. In 2015, private for-profit programs awarded approximately 41% of all doctoral degrees in clinical or counseling psychology. Graduates of substance abuse/addiction counseling programs, which occur at the two-year degree and less-than-two-year non-degree level, were split between the public (62%) and private for-profit sectors (37%) with less than 1% graduating from a private nonprofit training program.

Table 4.11. Graduates of Behavioral Health Education Programs by Institutional Sector, California, 2015

	Public	Private nonprofit	Private for-profit	Total graduates
Clinical or Counseling Psychology Master's	10.3%	69.3%	20.3%	4,629
Clinical or Counseling Psychology Doctorate	1.5%	52.4%	46.2%	1,029
Master'	91.6%	4.7%	3.7%	1,937
Psychiatric Technician	97.1%	0.2%	2.7%	659
Substance Abuse/Addiction Counseling	62.2%	0.8%	36.9%	1,671

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey

Note: The master's in social work (MSW) data exclude the program at the University of Southern California (USC). See the note to Table 4.3. for an explanation.

A series of tables describing the institutional sector composition of graduates for each program type by region can be found in Appendix C. A relatively large share of substance abuse/addiction counseling graduates in the Los Angeles region completed a program sponsored by a private for-profit institution (58% versus 37% statewide). The small number of MSW graduates that attended a private for-profit program were concentrated in the Orange County and Inland Empire regions (62% of the statewide total for private for-profit programs). In addition, approximately 88% of doctoral-level clinical or counseling psychology graduates in the San Diego region attended a for-profit institution, nearly double the statewide average (46%).

Chapter 5: Forecasted Supply of and Demand for Behavioral Health Professionals

The behavioral health workforce constantly changes with the entrance of newly trained professionals, migration of professionals from other states and countries, retirements, temporary departures from employment, and fluctuations in the number of hours that professionals choose to work. To understand how the supply of behavioral health professionals is likely to change over time and the adequacy of supply relative to estimates of future demand and need for behavioral health professionals, we projected supply of psychiatrists, psychologists, licensed marriage and family therapists (LMFTs), licensed clinical social workers (LCSWs), licensed professional clinical counselors (LPCCs), and psychiatric technicians. A combined forecast was generated for psychologists, LMFTs, LCSWs, and LPCCs because many behavioral health needs can be met by more than one of these types of professionals. We developed forecasts for the entire state of California; data were not of sufficient quality to permit us to project supply and demand at the regional level. We did not project supply for psychiatric mental health clinical nurse specialists and nurse practitioners, psychiatric-certified registered nurses, or any unlicensed professionals because data describing the current supply, number of new entrants, and employment rates were inadequate. Finally, our forecasts are for numbers of licensed providers and do not account for rates at which licensed professionals are employed in behavioral health occupations or variation in the number of hours worked.

Method of Forecasting Supply

The supply forecasting method used for this report is commonly called a “stock-and-flow” model. The number of behavioral health professionals licensed and living in California is the “stock” of professionals. These are professionals who can potentially provide behavioral health care services. Inflows of professionals are added to the stock of professionals, and the outflows are subtracted from the stock. Figure 5.1 illustrates this model.

The inflow of professionals includes graduates from education programs in California and professionals who relocate from other states or countries and obtain a license in California. The outflow is determined by migration out of California (to another state or country) and professionals who allow their licenses to lapse so they permanently leave the profession. Lapsed licenses can occur due to retirement, desire to pursue another occupation, death, or other reasons.

Figure 5.1. A Model of the Supply of Health Professionals

As inflows, outflows, and employment decisions change over time, so does the behavioral health workforce. At first glance, it seems clear that the workforce will grow over time as long as the inflow of professionals is greater than the outflow. However, such a comparison between total inflow and outflow does not take into account changes in employment as professionals age. The age distributions of the stock of professionals and each inflow and outflow component affect supply. Thus, the model “ages” each age cohort to capture the impact of age on the supply forecast.

In the supply model, the number of professionals with active licenses who reside in California is divided into age categories. A portion of each age group moves to the next (older) age group annually. We added the inflow estimates to and subtracted the outflow estimates from each age group to obtain a forecast of the new stock of professionals for the next year. This calculation was iterated through 2028 to obtain yearly forecasts of California’s supply of behavioral health professionals.

Forecasts of supply were developed using five age categories: under 35 years, 35-44 years, 45-54 years, 55-64 years, and 65 years and older. We assume that 10% of psychologists, LMFTs, LCSWs, LPCC, and psychiatric technicians in the youngest age group move to the next age group each year, because the majority of those entering these professions are under 25 years old except for psychologists for whom the majority are 26-30 years old. We assume that 20% of psychiatrists in the youngest age group move to the next age group each year, because nearly all newly-licensed psychiatrists are 31-40 years old. In the model, 10% of professionals in the middle three age groups move to the next age group each year, based on the assumption that providers are evenly distributed over the 10-year age groups and then 1 of 10 will move to the next older age group per year.

Ideally, we would estimate full-time equivalent (FTE) employment, a unit that expresses the workload of an employee as a ratio adjusted to the number of hours in a typical work week (usually 40 hours). For example, the workload of an employee who typically works 40 hours per week can be expressed as 1.0 FTE and the workload of an employee who works 60 hours per week can be expressed as 1.5 FTE. Estimates of FTEs require data on the employment rates of licensed professionals and the average number of hours per week they choose work. For most professions, the only data source that provides employment rates is the American Community Survey. However, these data ask respondents to report their occupation if they are employed and, if they are currently not in the labor force or unemployed, they report their most recent occupation. There is no way to identify persons who may be trained (or licensed) to provide behavioral health services but are employed in an occupation unrelated to behavioral health using these data. As a result, the employment rates calculated from these data over-estimate the employment rates of licensed professionals within each occupation, possibly to a large extent.

Due to this limitation, we did not calculate FTE supply forecasts and instead focus on the number of licensed professionals.

Data Sources for Supply Forecast

Table 1 summarizes sources of data for the variables used to generate the forecasts.

Table 5.1. Sources of Data for Behavioral Health Forecasts

	Psychiatrists	Psychologists	LMFTs	LPCCs	LCSWs	Psychiatric Technicians
Number of providers	Medical Board of California licensing files, 2016	Department of Consumer Affairs licensing files, 2016; Center for Health Workforce Studies, University at Albany, Licensed Social Workers in Behavioral Health, 2004 ¹³				
Age of providers	Medical Board of California mandatory survey, 2014-15	American Community Survey Public Use Microdata Sample 5-year estimates, 2011-2015*				
Gender of providers	Medical Board of California mandatory survey, 2014-15	American Community Survey Public Use Microdata Sample 5-year estimates, 2011-2015				Hernandez, 2016 ²³
Number of new entrants	Medical Board of California mandatory survey, 2014-15	California Board of Psychology Sunset Report, 2015 ²⁴	California Board of Behavioral Sciences Sunset Report 2015; ²⁵ Council on Social Work Education, Annual Statistics on Social Work Education in the United States, 2015 ²⁶			California Board of Vocational Nursing & Psychiatric Technicians, Sunset Report, 2014 ²⁷
Gender of new entrants	Medical Board of California mandatory survey, 2014-15	Integrated Post-Secondary Education Data System, 2015				
Age of new entrants	Medical Board of California mandatory survey, 2014-15	Technical Documentation for Health Resources Service Administration's Health Workforce Simulation Model, 2017 ²⁸				
Exits from workforce	Medical Board of California mandatory survey, 2014-15	California Board of Psychology Sunset Report, 2015 ²⁴	California Board of Behavioral Sciences Sunset Report 2015 ²⁴			California Board of Vocational Nursing & Psychiatric Technicians, Sunset Report, 2014 ²⁷

* Licensed Vocational Nurse age distribution was used for psychiatric technicians

Stock of providers

The stock of psychiatrists in the starting year, 2016, is the number of licensed psychiatrists with California addresses. These data were obtained from the Medical Board of California (MBC) which collects information about the age and gender of each psychiatrist which enabled us to count the number of psychiatrists per age-gender group.

The stocks of psychologists, LMFTs, LPCCs, LCSWs, and psychiatric technicians are the numbers of professionals licensed and living in California. These data were obtained from the California Department of Consumer Affairs (DCA) licensing records. The DCA data did not include information about the age or gender of professionals. We used the U.S. Census Bureau American Community Survey (ACS) Public Use Microdata Sample (PUMS) data to estimate the age and gender distribution of psychologists, LMFTs, LPCCs, and LCSWs. The ACS has specific occupational data for psychologists. LPCC and LMFT data were based on the broad occupational group of “counselors” in the ACS, while LCSW data were based on the occupational group “social workers”; sample cases were filtered to include only those where a master’s degree (or a higher degree) was reported for educational attainment to maximize the likelihood of retrieving data on persons eligible for licensure in these professions. The age distributions for LCSWs and LPCCs were similar to each other; we assumed the age distribution of LMFTs was the average of LCSWs and LPCCs. Because there are relatively few sample observations for each type of professional in a single year of ACS data, we used the 2011-2015 5-year PUMS file to produce estimates of the average share of professionals in each age-gender group over the period 2011-2015. We then multiplied these percentages by the numbers of licensed professionals to estimate the number in each age-gender group.

Many LCSWs do not provide behavioral health or counseling services, and instead provide community health, client navigation, care coordination, and other services. A survey conducted in 2004 found that nationwide 40% of LCSWs provided behavioral health services.¹³ More recent data could not be found; thus, we assumed that 40% of California’s LCSWs are engaged in providing behavioral health care.

The ACS does not include data specific to psychiatric technicians. We calculated the age distribution of licensed vocational nurses (LVNs) in California using the ACS 2011-2015 data, and assumed that the age distribution of psychiatric technicians is similar. We chose to use the age distribution of LVNs as a proxy for the age distribution of psychiatric technicians because LVNs and psychiatric technicians have similar levels of education, and both are licensed by the California Board of Vocational Nurses and Psychiatric Technicians. The gender distribution of psychiatric technicians was estimated based on a survey of psychiatric technicians conducted by Hernandez.²³ We multiplied the gender distribution by the age distribution estimates to obtain estimates of the share of psychiatric technician in each age-gender group. We then multiplied these percentages by the number of licensed psychiatric technicians to estimate the number in each age-gender group.

New Entrants

The number of new entrants to psychiatry was obtained from the Medical Board mandatory survey. We calculated the number of newly-licensed psychiatrists with California addresses as well as the number of previously-licensed psychiatrists whose address changed from out-of-state to California. Newly-licensed psychiatrists were defined as psychiatrists who had an active license and a California address in 2015 but not in 2013. We divided the numbers by two to obtain annual numbers. These data were available by age group for men and women.

The number of new psychologists, LMFTs, LPCC, LCSW, and psychiatric technicians were obtained from Sunset Reports published by the boards that oversee these professions.^{24,25,27} Sunset reports are documents that licensing boards in California release periodically when their authority for issuing licenses is up for renewal. The data on new licensees available in these reports are not limited to those with California addresses and thus overestimate the number of new entrants available to work in California. The Sunset Reports do not provide information about the age or gender of new entrants for these professions. The gender of new entrants to each profession was obtained from the Integrated Post-Secondary Education Data System (IPEDS), based on individuals completing education programs in each field. We assume the age and gender distributions of new licensees are the same as those of new graduates. The age distribution of new graduates was taken from the Health Resources and Services Administration (HRSA) technical documentation on national forecasts of the behavioral health workforce.²⁸ This report provides the age distribution of psychologists separately, and of counselors, LMFTs, substance use disorder counselors, and social workers as a group. We assumed the age distribution of psychiatric technician entrants is the same as LVNs. HRSA reported the data in the age groups 25 years and younger, 26-30 years, 31-40 years, and over 40 years. We allocated these to our 10-year age groups assuming that half of the 31-40 year group entered into the under-35 forecasting group, and half entered into the 35-44 forecasting group. We assumed that all of those over 40 years entered into the 35-44 forecasting group. One limitation of the data is inability to account for the probability that some of these professionals move to California at older ages.

As noted above, many LCSWs do not provide behavioral health services; LCSWs can have an educational focus related to clinical practice or community-oriented services. The Council on Social Work Education's annual survey of social work programs found that 49.1% of graduates were in a "direct or clinical practice track".²⁶ Thus, we assume that this share of California's LCSW graduates will provide behavioral health services upon graduation.

Exits from the Workforce

The Medical Board of California data were used to calculate the number of psychiatrists leaving the California workforce between 2013 and 2015. The numbers of psychiatrists allowing their licenses by lapse and numbers changing from California to out-of-state addresses were calculated for each age-gender group, and divided by two to obtain annual numbers. These numbers were then divided by the total number of licensed psychiatrists in each age-gender group to obtain an annual rate of exit from the workforce.

Sunset Reports from licensing boards were used to estimate the numbers of psychologists, LMFTs, LPCCs, LCSWs, and psychiatric technicians leaving the workforce each year.^{24,25,27} The Sunset Reports provide the number of professionals for whom a new or renewal license was issued for three years. The number of professionals renewing their license in the most recent year should equal the number of professionals two years prior, plus those with newly-issued licenses, if no professionals allow their licenses to lapse. The number of lapsed licenses thus is equal to the difference between the sum of professionals two years prior and the number of new licenses this year, and the actual number of licenses issued. The estimated number of lapsed licenses was divided by two to obtain an annual number, and then divided by the total number of professionals to obtain the annual rate of exit.

The psychologist, LMFT, LPCC, LCSW, and psychiatric technician Sunset Reports provide no information about the age distribution of professionals. We allocated the rates of licenses lapsing across age groups to follow the pattern of psychiatrists' lapsed licenses and to achieve the overall rate calculated from the Sunset Reports. Rates of lapsing are highest for those 65 years and older. The next-highest lapsing rates are for those 55-64 years and under 35 years.

Method of Forecasting Demand

The demand for behavioral health professionals can be measured and forecasted in many ways, reflecting disparate ideas about what demand is or should be. For this report, we developed estimates based on two scenarios. One scenario bases estimates of future demand on current utilization patterns; this is called the “current utilization” scenario. The other scenario bases the forecasts on data regarding both current utilization and unmet need for services; this is called the “need-based” scenario. The basic approach to all demand forecasts is to identify benchmarks for the number of behavioral health professionals required or the growth rate required in the future. The two benchmarks were drawn from forecasts of future behavioral health workforce demand published in 2015 by the U.S. Health Resources and Services Administration (HRSA).²⁸ They are:

- **Current utilization scenario:** The 2013 demand for each behavioral health profession, with the exception of psychiatrists, was assumed to be equal to 2013 supply. For psychiatrists, however, baseline demand was assumed to exceed 2013 supply by 5.8%, based on estimates of the number of psychiatrists needed nationwide to de-designate the Mental Health Care Health Professional Shortage Area (HPSAs).²⁸ Mental Health Care HPSAs are designated based on the supply of psychiatrists, and thus can be used to estimate the current shortfall of psychiatrists. Counties, clusters of Census tracts, populations (e.g., uninsured persons), and facilities may be designated as Mental Health Care HPSAs if they have less than 1 psychiatrist per 30,000 people (1 per 20,000 people in areas with high need for mental health services).²⁹
- **Unmet need scenario:** For this scenario, HRSA analyzed the 2013 National Survey on Drug Use and Health, finding that approximately 20 percent of the U.S. population may have needed but did not receive treatment for mental illness, substance use, and/or substance dependence. HRSA inflated the demand estimates based on current utilization to estimate the number of behavioral health providers needed to provide services for those with unmet need as well as maintain current rates of utilization.³⁰

The HRSA model projects future utilization of behavioral health services using a complex microsimulation model that incorporates projections of future population numbers, the age distribution of the population, health risk factors, and staffing patterns within health care organizations. Details of the model are published by HRSA.³⁰ The model includes psychiatrists, psychologists, substance use disorder and mental health counselors, mental health and substance abuse social workers, and LMFTs. HRSA's demand projects do not account for changes in practice patterns such as greater use of team-based care and integration of behavioral health and primary care services.

We applied the national gaps between supply and demand estimated by HRSA in 2013 to our 2015 California supply data to estimate California demand in 2015, for each of the two scenarios. We then applied the national growth rates for behavioral health professionals between 2013 and 2025, as estimated by HRSA, to project growth rates for California from 2016 to 2028. Note that HRSA projects different growth rates for each profession based on past utilization patterns, as developed using federal Medical Expenditures Panel Survey data; thus, the projected growth rates differ for each profession. Because estimated rates of unmet need for services vary across demographic groups, and demographic groups have different patterns of visits to each type of behavioral health provider, there are small differences in the estimates of the gap between demand and supply for each profession and the projected growth in the unmet need scenario. Table 2 presents HRSA's estimated gap between current supply and demand, and forecasted future growth for the two scenarios.

Table 5.2. Assumptions Regarding Demand Gaps and Growth in the Two HRSA Forecasting Scenarios

	Current utilization scenario		Unmet need scenario	
	2013 gap between demand and supply	Growth rate 2013-2025	2013 gap between demand and supply	Growth rate 2013-2025
Psychiatrists	5.8%	6.0%	23.6%	6.4%
Psychologists	0.0%	5.6%	25.0%	5.6%
LMFTs	0.0%	5.4%	25.2%	5.2%
LPCCs	0.0%	15.1%	25.0%	15.1%
LCSWs	0.0%	13.8%	25.0%	13.8%

Source: HRSA 2015

The HRSA models do not include forecasts of the supply or demand for psychiatric technicians. For this occupation, we compared projected supply growth to the number of psychiatric technicians that would be needed to maintain a stable worker-to-population ratio between 2016 and 2028. We also estimated the number of psychiatric technicians that would be needed if there is an unmet need gap of 25%, which is similar to the gap estimated by HRSA for other behavioral health professions.

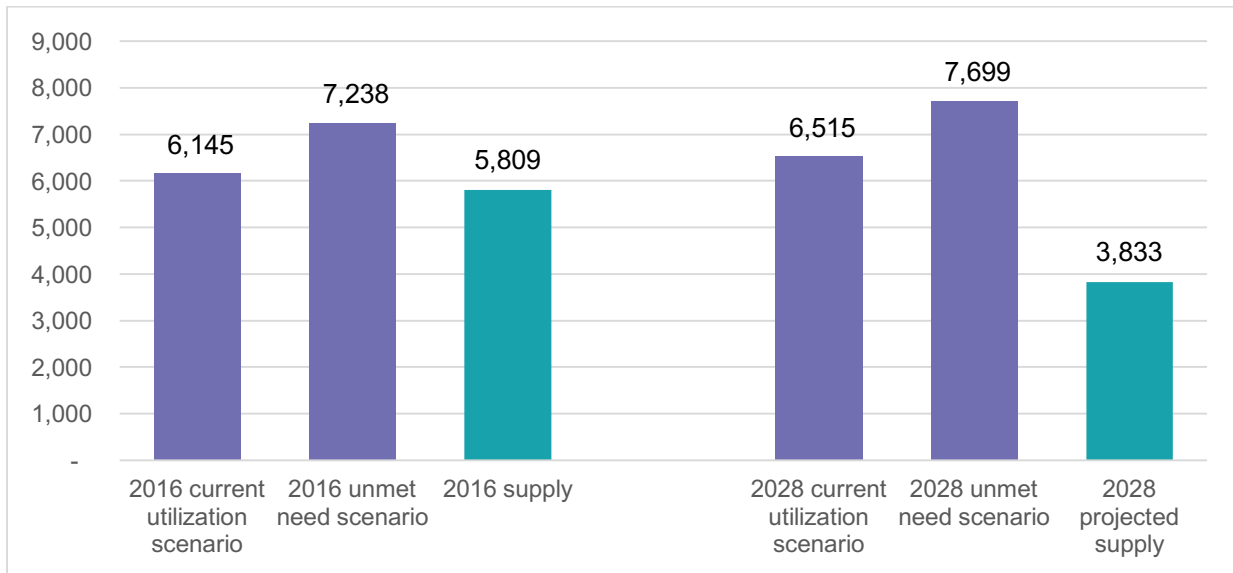
Supply and Demand Forecast Comparisons

The projected supply of behavioral health professionals can be compared with the two demand scenarios – both the scenario based on current utilization and the scenario based on unmet needs. We completed comparisons for three groups: (1) psychiatrists, who are authorized to prescribe medications in addition to providing diagnostic and non-medication therapeutic services, (2) psychologists, LMFTs, LPCCs, and LCSWs, who are authorized to provide diagnostic and therapeutic services but cannot prescribe medications, and (3) psychiatric technicians, who primarily work in facilities and organizations that provide behavioral health services and have a more limited scope of practice than other behavioral health professionals. As stated previously, psychiatric mental health CNSs, NPs, and RNs are not included due data limitations.

Figure 5.2 presents the projected supply and demand for psychiatrists from 2016 through 2028. The estimates suggest that California will have a severe shortage of psychiatrists by 2028. The HRSA demand forecasts estimate that there was a shortfall of 5.8% for psychiatrists, which indicates that in 2016 the demand was 6,145 compared with the supply of 5,809. However, in order to provide services to all individuals who needed care in 2016, 7,238 psychiatrists were needed, which indicates a gap of 23.6% between the number of psychiatrists in California in 2016 and the number required to care for all persons who need behavioral health services. In 2028, the supply of psychiatrists is projected to decline to 3,833. The gap between demand and supply in 2028 under the current utilization scenario is 2,683 (70%), and in 2028 the supply is projected to be less than half of the demand in the unmet need scenario.

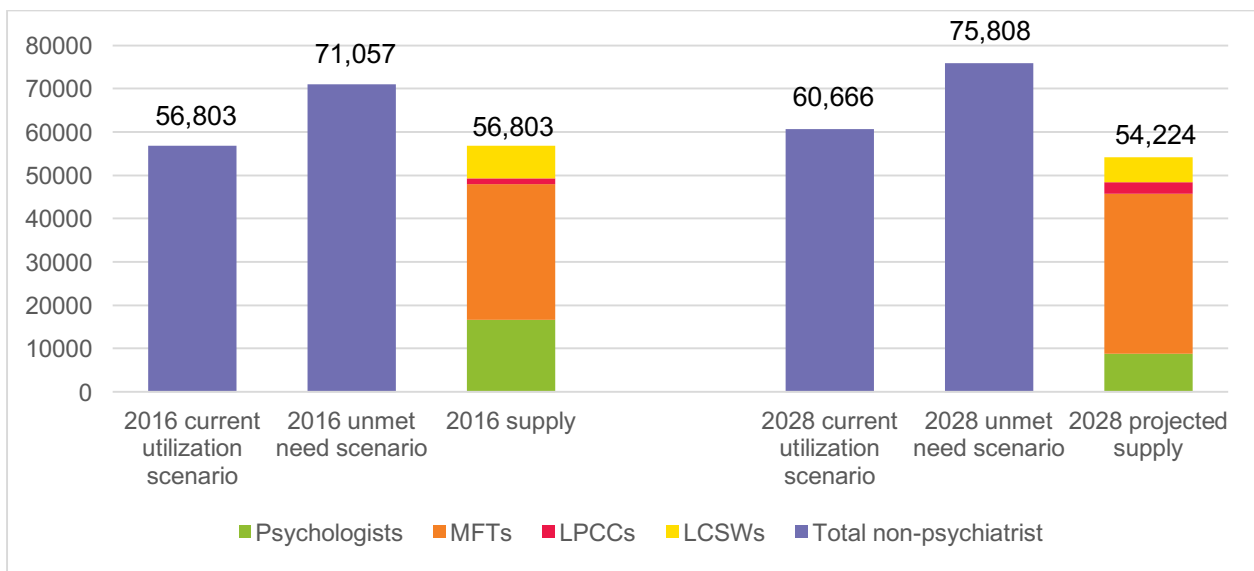
These graphs present comparisons between supply and demand in 2016 and 2028. Graphs that provide additional detail on trends in supplies of behavioral health professionals can be found in Appendix D.

Figure 5.2. Projected Supply and Demand for Psychiatrists, 2016-2028



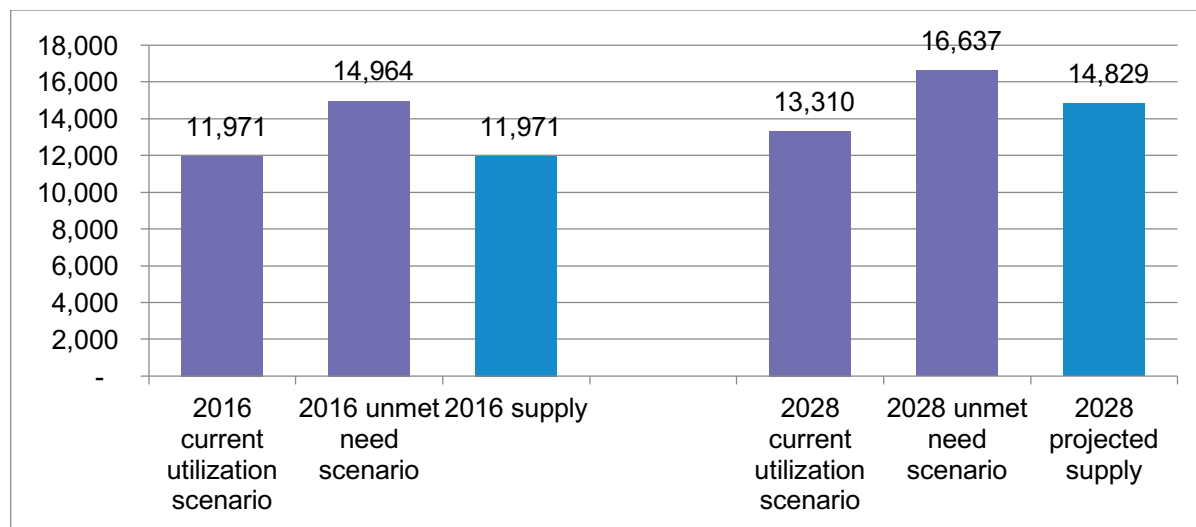
The projected supply and demand for psychologists, LMFTs, LPCCs, and LCSWs are presented in Figure 5.3. We compared the total demand for these four professions with total supply because the needs of many people can be met by more than one of these types of professionals. In the scenario based on current utilization, demand and supply were assumed to be equal in 2016 based on HRSA's forecasting model. By 2028, however, demand would exceed supply by 6,442 (11.9%). In the scenario based on unmet need, demand exceeded supply by 14,254 (20.1%) in 2016, and will exceed supply by 21,585 (39.8%) by 2028.

Figure 5.3. Projected Supply and Demand for Psychologists, Licensed Marriage and Family Therapists, Licensed Professional Clinical Counselors, and Licensed Clinical Social Workers, 2016-2028



Projected supply and demand for psychiatric technicians are presented in Figure 5.4. In the current utilization scenario, projected supply will exceed demand by 1,519 (11.4%) in 2028. However, in the unmet need scenario, in which we assumed that the gap between demand and supply was the same as for the other non-prescribing professions, a gap of 1,809 (10.9%) is projected by 2028.

Figure 5.10. Projected Supply and Demand for Psychiatric Technicians, 2016-2028



Limitations

The forecasts presented in this report have several important limitations. First, the forecasts may not fully project increases in demand for behavioral health services associated with the Affordable Care Act (ACA) and implementation of the Mental Health Parity and Addiction Equity Act (MHPAEA). These expansions in access to public and private insurance coverage for behavioral health services were implemented recently and their full impact may not be captured by our estimates of demand. Conversely, the forecasts do not account for potential decreases in access to insurance coverage that could result from repeal or significant retraction of the ACA that may reduce demand for all health care services, including behavioral health services. The forecasts also do not capture the effects of continued integration of behavioral health care, inclusion of behavioral health in value-based health insurance payment models, and rising rates of behavioral health problems such as opioid use disorder, which may affect demand for behavioral health services in ways not easily predicted.

Second, the forecasts are based on current patterns of supply of behavioral health professionals. Changes in the numbers of behavioral health professionals could help fill projected gaps between supply and demand. With respect to demand, we considered two scenarios developed by HRSA, one based on current utilization patterns and one that reflects that many people have behavioral health care needs that are not met. We provide forecasts of how many behavioral health professionals would be needed to fill this gap, but it is difficult to determine the best mix of providers to fill gaps in access to care. In particular, the best match of each of psychologists, LMFTs, LPCCs, and LCSWs to patients is not clearly delineated and thus these professions are combined in comparisons of demand and supply.

Third, data on employment rates of behavioral health professionals is limited. California's licensing boards do not collect data on what share of currently-licensed professionals are actually employed in their field of licensure. In addition, no data source provides information about the types of services behavioral health professionals provide. For instance, it is not known to what extent professionals such as LCSWs, who may provide services in other health care and social service fields such as patient navigation and case management, are engaged in the delivery of behavioral health services.

Conclusion

The projections of supply and demand/need for behavioral health professionals presented in this chapter suggest that California faces shortfalls of all behavioral health professions except perhaps psychiatric technicians. California is projected to have a particularly severe shortage of psychiatrists, with supply meeting less than half of total need by 2028. This finding is largely due to low numbers of entrants into this profession relative to the numbers of persons exiting psychiatry due to retirement and relocation. The projected shortfall of non-prescribing professionals is smaller, but still significant and will require an increase in new entrants or decrease in exits to ensure an adequate workforce to maintain current utilization patterns. Even greater numbers of professionals will be required if currently-unmet needs are to be addressed. For psychiatric technicians, the picture is mixed. California is projected to have sufficient numbers of psychiatric technicians to align with current utilization patterns in 2028 but insufficient numbers to fill unmet need for their services.

Conclusion

California's behavioral health workforce is composed of persons in multiple occupations with differing scopes of practice, licensure requirements, and characteristics. Neither the workforce nor the training programs that prepare individuals to enter the workforce are distributed evenly across the state. In addition, for most occupations the workforce reflects neither the racial/ethnic diversity nor the gender composition of the state's population. In some occupations, a large proportion of workers will reach retirement age within the next decade. The limited data available suggest concern about the extent to which behavioral health professionals participate in both public and private health insurance plans. Our estimates of future supply and demand for behavioral health workers indicate that the state will face substantial shortages of workers in all occupations relative to projected need for behavioral health services. A summary of major findings and recommendations follow.

Major Findings

Current Behavioral Health Professions Workforce

- California had over 80,000 licensed behavioral health professionals in 2016.
- Ratios of behavioral health professionals to population vary substantially across California's regions.
 - The Greater Bay Area has the highest per capita ratios for all occupations except psychiatric technicians.
 - The Inland Empire and the San Joaquin Valley have low per capita ratios relative to other regions of the state for all occupations except psychiatric technicians.
- Aside from psychiatrists, the percentage of licensed behavioral health professionals who accept any form of insurance is unknown. Findings from a previous study suggest that in 2015, only 77% of psychiatrists who provided patient care in California had any patients with private health insurance. Only 55% of psychiatrists had any Medicare patients and only 46% had any Medi-Cal patients.
- African-Americans and Latinos are underrepresented among psychiatrists and psychologists (the most highly educated providers); Latinos are also underrepresented among counselors and social workers.
- Men constituted the majority of psychiatrists, whereas the majority of psychologists, counselors, and social workers were women.
- Forty-five percent of psychiatrists and 37% of psychologists are over age 60 years.
- Wages vary widely across behavioral health occupations as do the settings in which persons are employed.

Pipeline of Behavioral Health Workforce Trainees

- Trainees in behavioral health occupations are not distributed evenly across California.
 - There are no training programs for psychiatrists, psychiatric mental health nurse practitioners (PMHNPs), or psychologists north of Sacramento.
 - There are no doctoral programs in psychology in the Central Coast and San Joaquin Valley regions.
- The percentage of Latinos among 2015 graduates of master's of social work and psychiatric technician education programs is at parity with the percentage in the general population but Latinos remain underrepresented among graduates of psychiatry residency programs and clinical or counseling psychology programs at both the master's and doctoral level.
- The institutional sector in which behavioral health professionals are trained varies substantially across occupations.
 - The vast majority of graduates of master's of social work and psychiatric technician programs are from public higher education institutions.
 - Large percentages of graduates of doctoral programs in clinical or counseling psychology and graduates of training programs in substance abuse/addiction counseling are from private, for-profit institutions.

Forecasts of Supply and Demand for Behavioral Health Professionals

- If current trends continue, between 2016 and 2028
 - Supplies of psychiatrists, psychologists, and LCSWs are projected to decrease.
 - Supplies of LMFTs, LPCCs, and psychiatric technicians are expected to increase.
- Demand is projected to increase between 2016 and 2028 for all of the occupations for which demand was forecast.
- If current trends continue, the supply of psychiatrists and the combined supply of psychologists, LMFTs, LPCCs, and LCSWs in California will be inadequate to meet future demand.
 - Forecasts for demand based on *current service utilization patterns* indicate that by 2028
 - California will have 41% fewer psychiatrists than would be needed if current patterns of demand for behavioral health services continue.
 - California will have 11% fewer psychologists, LMFTs, LPCCs, and LCSWs combined to than would be needed if current patterns of demand for behavioral health services continue.

- Forecasts for demand based on *current service utilization plus unmet need for services* indicate that by 2028
 - California will have 50% fewer psychiatrists than will be needed to meet both current patterns of demand and unmet demand for behavioral health services.
 - California will have 28% fewer psychologists, LMFTs, LPCCs, and LCSWs combined to meet both current patterns of demand and unmet demand for behavioral health services.

Recommendations

Findings from this report suggest that California should make investments in the behavioral health workforce in four areas.

- Increase supply
- Reduce geographic maldistribution
- Increase racial/ethnic diversity
- Increase collection, analysis, and dissemination of workforce data

Increase Supply

Our findings suggest that California will need to make substantial investments to meet future demand for behavioral health occupations. Increasing the supply of professionals who can prescribe psychiatric medications is especially critical because the number of psychiatrists is projected to decrease by 34% between 2016 and 2028. Access to psychiatrists and other health professionals who can prescribe medications is especially important to persons with severe mental illness because they need medication to control their conditions. Some persons with mild to moderate mental illness also find medication helpful. To cope with this projected shortage, California's policy-makers need to simultaneously consider ways to increase the number of psychiatrists and expand models of care that rely less heavily on psychiatrists.

Examples of strategies for improving access to behavioral health professionals who can prescribe medications include increasing the number of psychiatry residents trained, utilizing PMHNPs more extensively to prescribe medications, and team-based models of care in which primary care physicians, physician assistants (PAs), and nurse practitioners (NPs) prescribe medications under the guidance of psychiatrists. Team-based models can involve "virtual" consultation with psychiatrists at other sites via telehealth technologies such as electronic messaging, telephone, and live video. Additional training could also be provided to primary care physicians, PAs, and NPs to enhance their ability to care for patients with mental illness or substance use disorders. Models for providing additional training include the University of California, Davis and the University of California, Irvine Training Primary Care Providers in Psychiatric Care Fellowship, a year-long, distance learning, clinical education certificate program that provides primary care physicians, physician assistants, and nurse practitioners with advanced training in primary care psychiatry.³¹

To implement these strategies, policy-makers could leverage the Mental Health Services Act's (MHSA) Workforce Education and Training (WET) program, which provides grants to psychiatry residency programs and PMHNP education programs. Funds could be earmarked to support expansion of existing psychiatry residency programs and PMHNP education programs and/or establishment of new programs, including combined psychiatry-family medicine residency programs. However, funding for the MHSA WET program is scheduled to end in 2018 and at this writing it is unknown whether funding will be renewed. In addition, funds could be allocated to the Song-Brown program to provide special program grants to primary care residency programs to better prepare primary care physicians to collaborate with psychiatrists to manage patients with behavioral health needs. Medi-Cal, California's Medicaid program, is another potential source of funds for expanding training. Many states use Medicaid funds to support hospitals and other institutions that sponsor residency programs and some target funding toward specialties in which they experience shortages.^{32,33}

California policy-makers should also explore the feasibility of creating academic ladders through which persons who have completed certificate or associate degree level education in behavioral health services can obtain additional training needed to become licensed behavioral health professionals. If such academic ladders are developed, employers should provide financial support and flexible scheduling to enable to employees to complete additional education.

California should also ensure that persons who complete education in behavioral health professions are encouraged to provide behavioral health services. This is especially important for LCSWs because there is substantial demand for these professionals in other settings, such as child welfare agencies and general acute care hospitals. At present, stipends are available to MSW students interested in careers in either child welfare or behavioral health but funding for the behavioral health stipends, which are funded under the MHSA Workforce Education and Training program, is scheduled to end and at this writing it is unknown whether the State Legislature will extend funding for the stipends and other MHSA Workforce Education and Training programs.

Reduce Geographic Maldistribution

California's policy-makers also should address the geographic maldistribution of training programs in behavioral health occupations. Most programs are clustered in the Greater Bay Area and urban areas of Southern California. Research has found that primary care physicians tend to practice near the place in which they complete residency. This may be true of behavioral health professionals as well. Opportunities for training should be expanded in the Far North of the state (i.e., north of Sacramento) and in the Central Coast and San Joaquin Valley regions.

Possible models for expanding access to behavioral health training in underserved regions of California include providing clinical training in these regions and expanding access to didactic education via distance learning. Training programs in underserved areas could focus on recruiting students from these areas and could provide financial aid to those who agree to practice in these areas upon graduation. Regardless of where behavioral health professionals are trained, their training should include use of telehealth services so that they can provide care "virtually" to persons in underserved areas.

To increase supplies of behavioral health professionals in underserved areas, policy-makers could sustain and increase funding for the MHSA's Workforce and Education Training Program's educational stipend program, which provides stipends to graduate students in PMHNP, clinical psychology, marriage and family therapy, and social work programs who agree to complete requirements for supervised professional experience and work in the public mental health system for 12 months following graduation. Similar stipends could be created for behavioral

health professionals who agree to work in organizations that provide substance use disorder services to low-income persons.

Increasing funding for programs that repay behavioral health professionals' student loans in exchange for practicing in a public or non-profit organization that provides behavioral health services to underserved populations may also help employers recruit and retain behavioral health professionals. California currently has two loan repayment programs for behavioral health professionals. The Mental Health Loan Assumption Program repays up to \$10,000 in student loans in exchange for practicing for one year in a public mental health agency. The Licensed Mental Health Services Provider Education Program repays up to \$15,000 in student loans in exchange for two years of service in a public mental health agency, a non-profit agency that contracts with a county mental health agency, or another type of practice in a Mental Health Care Health Professional Shortage Area. Psychiatrists, clinical psychologists, LCSWs, LMFTs, LPCCs, PMHNPs, and psychiatric CNSs are also eligible for the National Health Service Corps and the State Loan Repayment Program, which provide \$50,000 in exchange for practicing in a Mental Health Care Health Professional Shortage Area for two years. Similar loan repayment programs should be established to support behavioral health professionals who provide substance use disorder services to low-income persons.

Increase Racial/Ethnic Diversity

In addition, California needs to increase racial/ethnic diversity in the behavioral health professions, particularly in psychiatry and psychology, to improve access to racially/ethnically concordant professionals. Strategies for addressing this challenge include providing comprehensive academic, social, emotional, and financial support to underrepresented minority students at the undergraduate level in preparation for admission to professional school. Young people from underrepresented racial/ethnic groups may also benefit from exposure to behavioral health careers because they may be less aware of career opportunities in these fields than opportunities in medicine or nursing. Other strategies include establishing academic ladders through which persons with certificate-level education in treatment of mental illness or substance use disorder can have an opportunity to obtain additional education needed to obtain a degree and/or licensure, ideally with financial and other support from employers.

Improve and Expand Collection and Dissemination of Workforce Data

Finally, this report points to the need to improve and expand the collection, analysis, and dissemination of data that can be used to describe California's behavioral health workforce. Aside from the Medical Board, the licensing boards for behavioral health professionals historically have not collected data that can be used to analyze labor force participation, practice patterns, or demographic characteristics of the workforce. Data on ability to speak languages other than English are especially important because estimates from the American Community Survey suggest that 19% of Californians age five years or older do not speak English well.³⁴ Although legislation was enacted in 2014 (Stats. 2014, Ch. 420) that directs the Board of Registered Nursing and the Board of Licensed Vocational Nursing and Psychiatric Technicians to collect demographic information, these licensing boards have been slow to compile and report these data. In addition, this statute does not apply to the Board of Psychology or the Board of Behavioral Sciences. Consistent collection of data at the point of licensure is especially important for the PMHNP workforce, as there are few other sources of data available for this profession. Collection, analysis, and dissemination of data on paraprofessionals, such as peer providers, is also important because they are an important part of the behavioral health workforce.

Expanding the volume and breadth of data collected by licensing boards and other state agencies would also be helpful for ensuring the availability of a minimum dataset across all behavioral health occupations, including

paraprofessionals such as peer providers, and a standard nomenclature that can be used to classify them. The lack of a standard nomenclature makes it difficult to compare behavioral health occupations across datasets.

Finally, licensing boards should collect data on graduates of behavioral health professions training programs and develop requirements that ensure data are reported for all campuses of a corporate entity and that students completing distance education are reported for the county in which the student resides while completing his or her education. Similar data should be collected on graduates of training programs for paraprofessionals, such as peer providers, addiction counselors, and persons with associate or bachelor's degrees in social work. The Board of Registered Nursing's annual survey of nursing schools¹⁷ could serve as a model for surveys of training programs.

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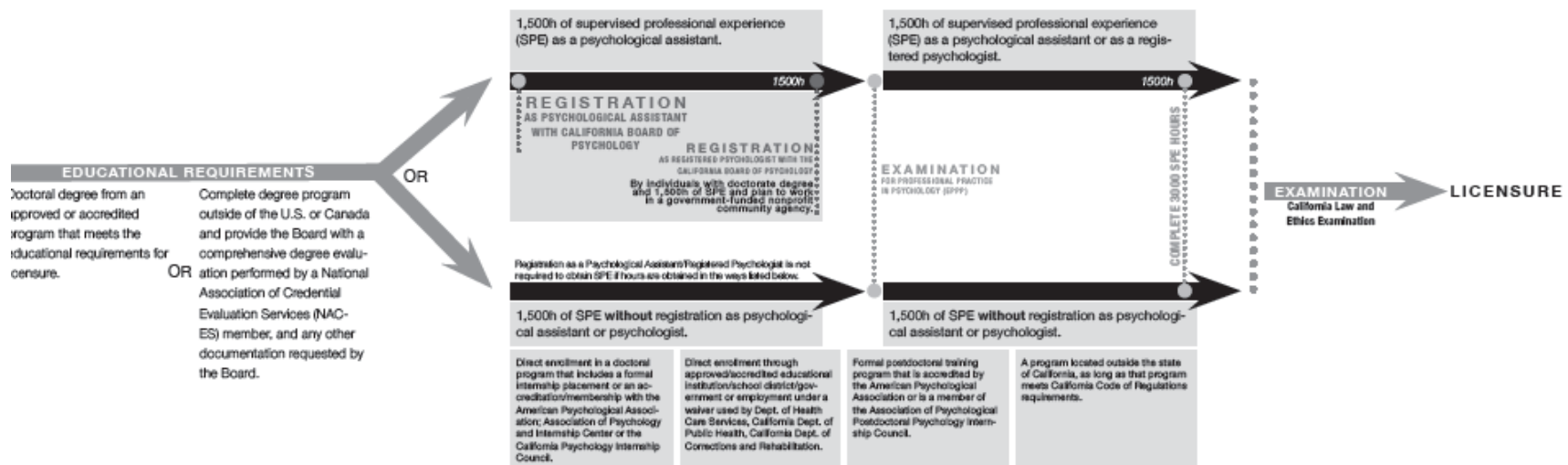
Research Report

Appendix A:

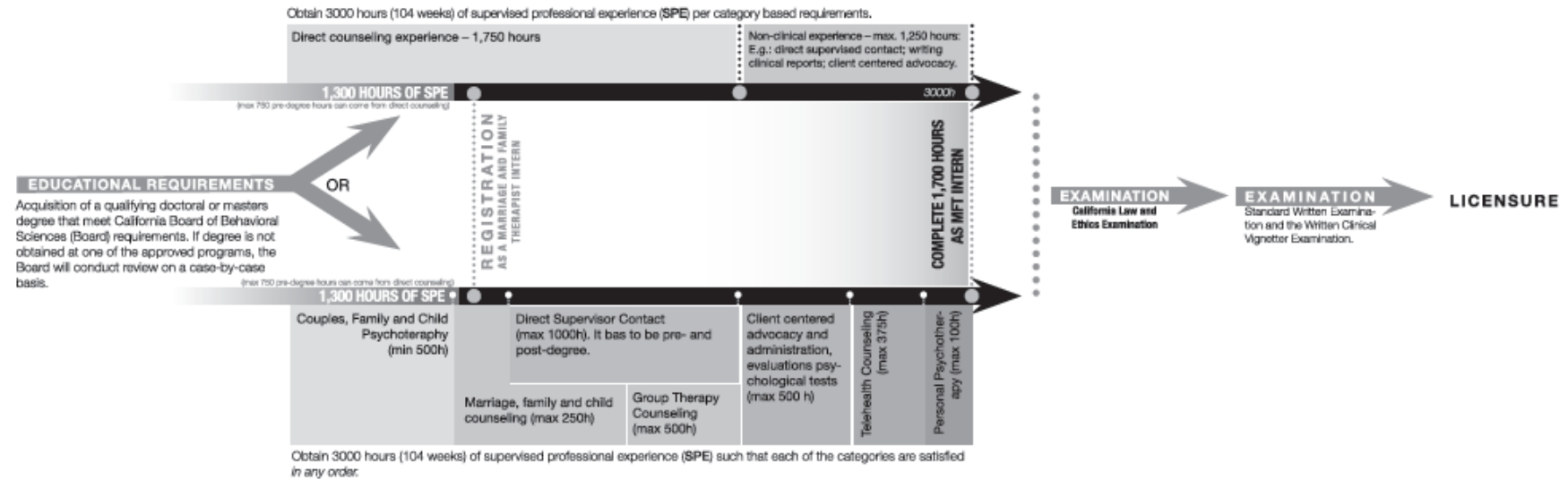
Licensure Pathway Diagrams

This appendix supplements Chapter 1 by providing additional detail about the licensure requirements for psychologists, marriage and family therapists, licensed professional clinical counselors, licensed clinical social workers, and psychiatric technicians. The appendix focuses on these professions because the requirements are more complicated than the requirements for other behavioral health professions, such as psychiatrists and psychiatric mental health nurse practitioners. The requirements for psychologists are particularly complicated because there are three options for obtaining supervised professional experience. Similarly, there are three options for psychiatric technicians to meet requirements for clinical and didactic education.

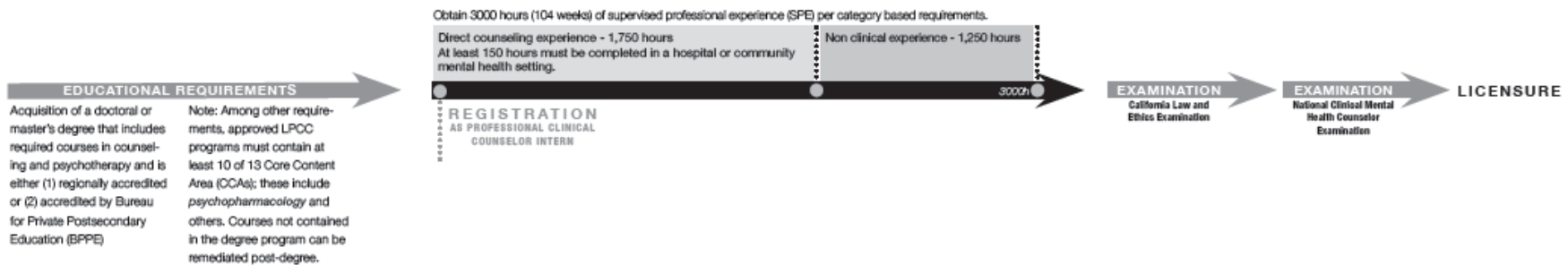
Psychologists



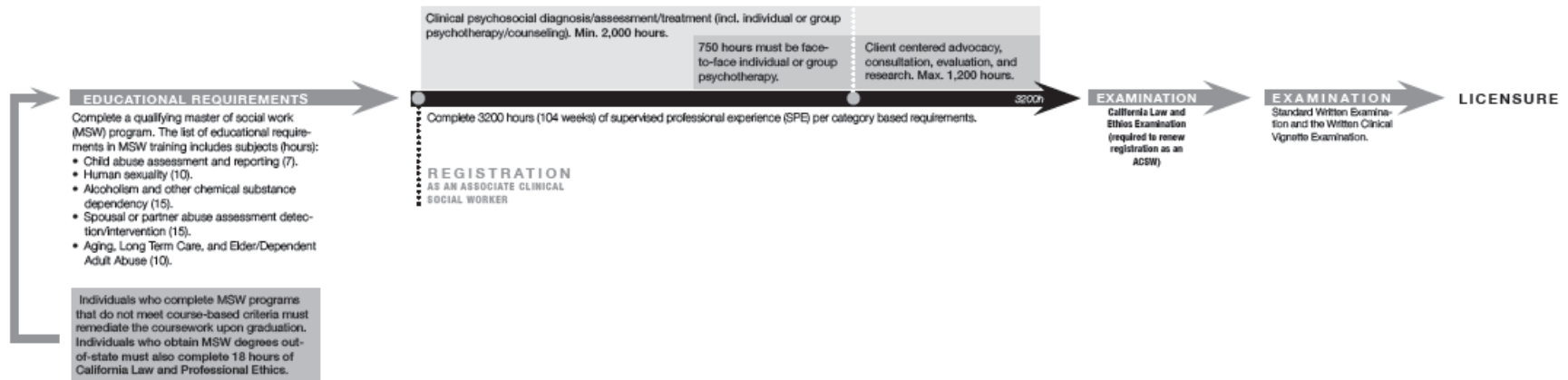
Marriage and Family Therapists



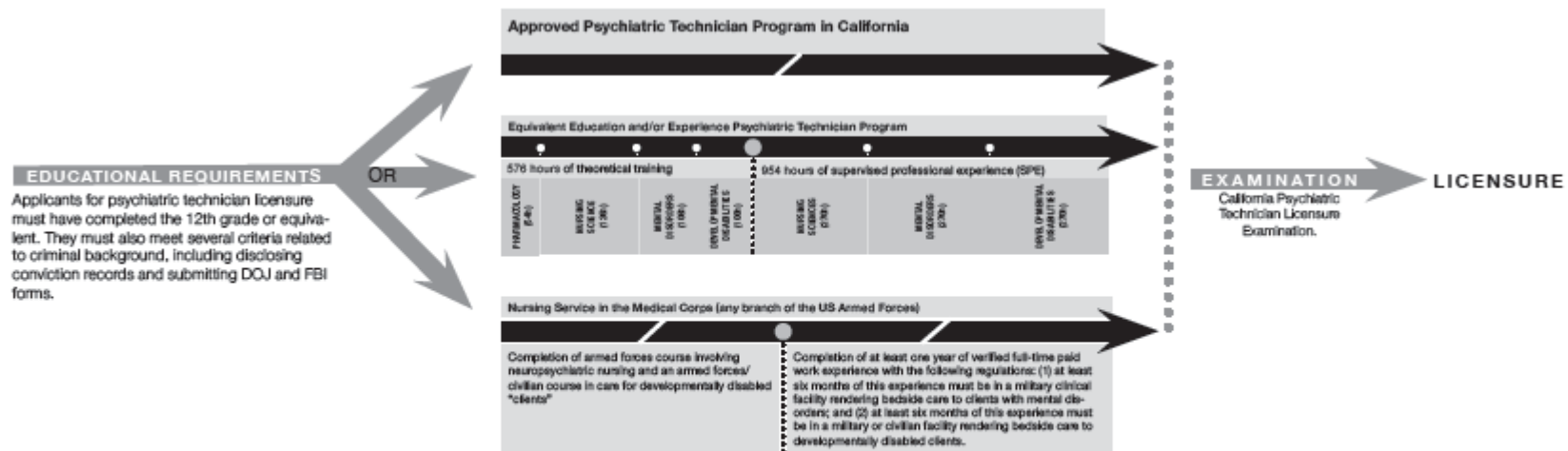
Licensed Professional Clinical Counselors



Licensed Clinical Social Workers



Psychiatric Technicians



Research Report

Appendix B:

Estimates of Employment of Behavioral Health Professionals by Setting, California, 2014

This appendix contains a series of tables that present estimates of employment by setting for behavioral health professionals in 2014 that were produced by the California Employment Development Department (EDD), Labor Market Information Division, as part of its Occupational Employment Statistics and Wages (OES) program. OES uses the Standard Occupation Classification (SOC) system to classify occupations. The tables display estimates of numbers of jobs in each occupation and setting. The numbers of persons employed in each occupation and setting may differ. Some people may hold more than one job. Others may be licensed to practice an occupation but work in another field or are not in the labor force.

Table B.1. Estimated Employment by Setting, Psychiatrists, California, 2014

Employment Setting	Estimated Number of Jobs	Share of Employment
Offices of Physicians	1,100	44%
Local Government	400	16%
State Government	300	12%
Psychiatric & Substance Abuse Hospitals	300	12%
Outpatient Care Centers	200	8%
General Medical and Surgical Hospitals	100	4%
Offices of Other Health Practitioners	100	4%
Total	2,500	100%

Source: Industry-Occupation Staffing Patterns, Labor Market Information Division, California Employment Development Department, 2014

Table B.2. Estimated Employment by Setting, Clinical, Counseling, and School Psychologists, California, 2014

Employment Setting	Estimated Number of Jobs	Share of Employment
Elementary and Secondary Schools	5,400	31%
Offices of Other Health Practitioners	2,300	13%
Local Government	1,800	10%
Individual and Family Services	1,700	10%
General Medical and Surgical Hospitals	1,600	9%
Outpatient Care Centers	1,300	7%
State Government	1,000	6%
Colleges and Universities	600	3%
Offices of Physicians	500	3%
Psychiatric & Substance Abuse Hospitals	500	3%
Residential Mental Health Facilities	500	3%
Other Hospitals	100	1%
Other Residential Care Facilities	100	1%
Total	17,400	100%

Source: Industry-Occupation Staffing Patterns, Labor Market Information Division, California Employment Development Department, 2014

Table B.3. Estimated Employment by Setting, Marriage and Family Therapists, California, 2014

Employment Setting	Estimated Number of Jobs	Share of Employment
Individual and Family Services	2,500	32%
Outpatient Care Centers	2,300	29%
Offices of Other Health Practitioners	1,500	19%
Local Government	600	8%
Residential Mental Health Facilities	400	5%
General Medical and Surgical Hospitals	200	3%
Other Residential Care Facilities	200	3%
Emergency and Other Relief Services	100	1%
Religious Organizations	100	1%
Total	7,900	100%

Source: Industry-Occupation Staffing Patterns, Labor Market Information Division, California Employment Development Department, 2014

Table B.4. Estimated Employment by Setting, Mental Health and Substance Abuse Social Workers, California, 2014

Employment Setting	Estimated Number of Jobs	Share of Employment
Individual and Family Services	2,200	18%
Residential Mental Health Facilities	2,000	17%
Outpatient Care Centers	1,800	15%
Local Government	1,700	14%
Offices of Other Health Practitioners	1,100	9%
General Medical and Surgical Hospitals	900	7%
Offices of Physicians	700	6%
Social Advocacy Organizations	600	5%
State Government	500	4%
Emergency and Other Relief Services	300	2%
Other Residential Care Facilities	200	2%
Grantmaking and Giving Services	100	1%
Total	12,100	100%

Source: Industry-Occupation Staffing Patterns, Labor Market Information Division, California Employment Development Department, 2014

Table B.5. Estimated Employment by Setting, Child, Family, and School Social Workers, California, 2014

Employment Setting	Estimated Number of Jobs	Share of Employment
Individual and Family Services	10,600	36%
Local Government	9,600	33%
Elementary and Secondary Schools	2,300	8%
Other Residential Care Facilities	1,400	5%
Residential Mental Health Facilities	900	3%
Emergency and Other Relief Services	800	3%
Outpatient Care Centers	600	2%
Child Day Care Services	500	2%
Offices of Other Health Practitioners	400	1%
Social Advocacy Organizations	400	1%
Colleges and Universities	300	1%
Civic and Social Organizations	300	1%
Grantmaking and Giving Services	300	1%
Junior Colleges	200	1%
General Medical and Surgical Hospitals	200	1%
Management of Companies and Enterprises	200	1%
Offices of Physicians	100	0.3%
State Government	100	0.3%
Total	29,200	100%

Source: Industry-Occupation Staffing Patterns, Labor Market Information Division, California Employment Development Department, 2014

Table B.6. Estimated Employment by Setting, Psychiatric Technicians, California, 2014

Employment Setting	Estimated Number of Jobs	Share of Employment
Psychiatric & Substance Abuse Hospitals	4,400	55%
Other Hospitals	1,600	20%
State Government	800	10%
General Medical and Surgical Hospitals	600	8%
Local Government	300	4%
Residential Mental Health Facilities	200	3%
Outpatient Care Centers	100	1%
Total	8,000	100%

Source: Industry-Occupation Staffing Patterns, Labor Market Information Division, California Employment Development Department, 2014

Table B.7. Estimated Employment by Setting, Mental Health Counselors, California, 2014

Employment Setting	Estimated Number of Jobs	Share of Employment
Individual and Family Services	3,600	30%
Residential Mental Health Facilities	2,700	22%
Local Government	2,000	16%
Outpatient Care Centers	1,700	14%
Other Residential Care Facilities	600	5%
Offices of Other Health Practitioners	400	3%
General Medical and Surgical Hospitals	300	2%
Psychiatric & Substance Abuse Hospitals	300	2%
Emergency and Other Relief Services	200	2%
Offices of Physicians	100	1%
Elementary and Secondary Schools	100	1%
Vocational Rehabilitation Services	100	1%
Community Care Facility for the Elderly	100	1%
Total	12,200	100%

Source: Industry-Occupation Staffing Patterns, Labor Market Information Division, California Employment Development Department, 2014

Table B.8. Estimated Employment by Setting, Substance Abuse and Behavioral Disorder Counselors, California, 2014

Employment Setting	Estimated Number of Jobs	Share of Employment
Residential Mental Health Facilities	2,700	32%
Individual and Family Services	2,000	24%
Outpatient Care Centers	1,000	12%
Local Government	900	11%
Offices of Other Health Practitioners	500	6%
Elementary and Secondary Schools	400	5%
Psychiatric & Substance Abuse Hospitals	400	5%
General Medical and Surgical Hospitals	200	2%
Other Residential Care Facilities	200	2%
Offices of Physicians	100	1%
Emergency and Other Relief Services	100	1%
Total	8,500	100%

Source: Industry-Occupation Staffing Patterns, Labor Market Information Division, California Employment Development Department, 2014

Appendix C:

Regional Tables on the Pipeline of Behavioral Health Workforce Trainees – Demographic Characteristics and Institutional Sector

This appendix contains detailed tables on the race/ethnicity and gender of graduates of education programs in behavioral health professions by program type and region as well as tables on numbers of graduates by program type, region, and institutional sector. The regions that the California Health Interview Survey (CHIS) uses to present findings at the regional level were used. A map of the regions and a list of counties in each region can be found in Appendix D. Data on percentages of graduates were obtained from the Integrated Postsecondary Education Data System (IPEDS) and the National Resident Matching Program (NRMP). Information about these data sources can be found in Appendix E.

Race/Ethnicity

Tables C.1.1. through C.1.6. present data on the percentage of 2015 graduates of behavioral health education programs in the following racial/ethnic groups by program type: White, Latino, Asian, Black/African American, Other, Unreported. Data on the race/ethnicity of psychiatry residents are not presented due to the small numbers of residents in individual racial/ethnic groups in most regions.

Table C.1.1. White Graduates of Behavioral Health Professions Education Programs by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/Addiction Counseling	General Population
	Master's	Doctoral				
Central California	60.1%	65.2%	48.1%	44.0%	46.5%	46.7%
Greater Bay Area	55.1%	59.6%	32.6%	16.7%	40.3%	40.0%
Inland Empire	35.6%	34.6%	21.5%	3.8%	39.4%	32.9%
Los Angeles	44.4%	56.4%	22.3%	13.8%	25.7%	26.5%
Northern & Sierra	60.3%	--	54.0%	50.0%	50.0%	71.1%
Orange	38.9%	61.7%	30.4%	13.6%	59.6%	41.1%
Sacramento Area	28.6%	--	44.5%	--	54.1%	53.0%
San Diego Area	48.2%	56.1%	45.8%	--	47.0%	44.2%
San Joaquin Valley	39.4%	--	25.3%	23.9%	45.3%	33.2%
California	47.4%	58.1%	30.5%	21.4%	37.0%	37.7%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey; Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2016, U.S. Census Bureau, Population Division

Table C.1.2. Latino Graduates of Behavioral Health Professions Education Programs by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/ Addiction Counseling	General Population
	Master's	Doctoral				
Central California	18.9%	10.1%	22.2%	32.0%	44.6%	42.9%
Greater Bay Area	11.9%	8.1%	29.2%	21.9%	25.5%	23.7%
Inland Empire	29.3%	23.1%	44.6%	40.4%	28.2%	50.5%
Los Angeles	20.8%	11.5%	45.8%	43.1%	30.4%	48.5%
Northern & Sierra	7.9%	--	19.4%	50.0%	0.0%	17.8%
Orange	24.0%	11.7%	48.6%	40.9%	16.3%	34.3%
Sacramento Area	14.3%	--	24.4%	--	13.5%	21.4%
San Diego Area	24.6%	13.3%	29.8%	--	26.1%	36.1%
San Joaquin Valley	33.9%	--	50.5%	41.4%	33.3%	51.7%
California	20.1%	11.3%	38.6%	37.2%	27.8%	38.9%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey; Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2016, U.S. Census Bureau, Population Division

Table C.1.3. Asian Graduates of Behavioral Health Professions Education Programs by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/ Addiction Counseling	General Population
	Master's	Doctoral				
Central California	2.7%	0.7%	0.0%	4.0%	0.0%	5.7%
Greater Bay Area	7.3%	8.9%	13.1%	37.7%	5.4%	25.9%
Inland Empire	3.4%	19.2%	0.8%	7.7%	4.3%	6.5%
Los Angeles	7.2%	12.4%	8.4%	6.4%	1.0%	14.5%
Northern & Sierra	1.6%	--	3.2%	0.0%	2.8%	3.6%
Orange	5.8%	13.3%	6.5%	27.3%	2.8%	19.9%
Sacramento Area	28.6%	--	11.8%	--	5.4%	13.0%
San Diego Area	6.5%	10.0%	8.4%	--	2.2%	11.1%
San Joaquin Valley	8.3%	--	8.6%	24.6%	0.0%	7.6%
California	6.5%	9.4%	8.5%	20.2%	2.2%	14.2%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey; Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2016, U.S. Census Bureau, Population Division

Table C.1.4. Black or African American Graduates of Behavioral Health Professions Education Programs by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/Addiction Counseling	General Population
	Master's	Doctoral				
Central California	4.3%	5.1%	7.4%	9.3%	4.0%	1.8%
Greater Bay Area	4.7%	8.5%	14.1%	13.2%	20.8%	6.0%
Inland Empire	22.4%	23.1%	22.3%	38.5%	25.0%	7.1%
Los Angeles	9.9%	4.3%	8.4%	27.5%	30.5%	8.1%
Northern & Sierra	1.6%	--	2.4%	0.0%	11.1%	1.5%
Orange	12.0%	5.0%	4.3%	9.1%	7.8%	1.6%
Sacramento Area	0.0%	--	8.4%	--	17.6%	7.0%
San Diego Area	8.4%	4.3%	3.8%	--	12.7%	4.6%
San Joaquin Valley	0.9%	--	7.5%	6.7%	16.0%	4.4%
California	8.6%	6.0%	9.3%	14.1%	22.4%	5.7%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey; Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2016, U.S. Census Bureau, Population Division

Table C.1.5. Other Race/Ethnicity Graduates of Behavioral Health Professions Education Programs by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/Addiction Counseling	General Population
	Master's	Doctoral				
Central California	3.0%	2.9%	11.1%	9.3%	1.0%	3.0%
Greater Bay Area	4.4%	4.1%	5.1%	7.9%	7.4%	4.4%
Inland Empire	2.0%	0.0%	1.7%	9.6%	2.7%	2.9%
Los Angeles	4.0%	4.7%	3.0%	8.3%	4.4%	2.5%
Northern & Sierra	7.9%	--	8.1%	0.0%	36.1%	6.1%
Orange	3.5%	1.7%	3.6%	0.0%	2.8%	3.1%
Sacramento Area	0.0%	--	2.5%	--	5.4%	5.6%
San Diego Area	5.1%	6.0%	6.9%	--	6.0%	4.0%
San Joaquin Valley	5.5%	--	1.6%	0.4%	4.0%	3.0%
California	8.6%	4.4%	9.3%	14.1%	22.4%	5.7%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey; Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2016, U.S. Census Bureau, Population Division

Table C.1.6. Graduates of Behavioral Health Professions Education Program whose Race or Ethnicity was not Reported by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/ Addiction Counseling
	Master's	Doctoral			
Central California	11.0%	16.7%	11.1%	1.3%	4.0%
Greater Bay Area	16.6%	10.7%	5.9%	2.6%	0.7%
Inland Empire	7.3%	0.0%	9.1%	0.0%	0.5%
Los Angeles	13.8%	10.7%	12.1%	0.9%	7.9%
Northern & Sierra	20.6%	--	12.9%	0.0%	0.0%
Orange	15.9%	6.7%	6.5%	9.1%	10.6%
Sacramento Area	28.6%	--	8.4%	--	4.1%
San Diego Area	7.2%	10.3%	5.3%	--	6.0%
San Joaquin Valley	11.9%	--	6.5%	3.2%	1.3%
California	13.4%	10.9%	9.1%	2.4%	5.6%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey

Gender

Tables C.2.1. and C.2.2. present data on the percentages of males and females among graduates of behavioral health education programs by region and program type. Data on the gender of psychiatry residents are not presented due to the small numbers of residents in each gender in most regions.

Table C.2.1. Male Graduates of Behavioral Health Professions Education Programs by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/ Addiction Counseling
	Master's	Doctoral			
Central California	21.6%	22.5%	11.1%	49.3%	32.7%
Greater Bay Area	20.2%	23.3%	18.2%	28.9%	49.0%
Inland Empire	15.6%	15.4%	18.2%	36.5%	61.7%
Los Angeles	20.5%	23.9%	17.5%	38.5%	33.9%
Northern & Sierra	22.2%	--	8.1%	0.0%	44.4%
Orange	18.1%	15.0%	13.8%	31.8%	44.0%
Sacramento Area	28.6%	--	11.8%	--	35.1%
San Diego Area	19.1%	19.6%	11.5%	--	38.1%
San Joaquin Valley	16.5%	--	14.5%	30.9%	32.0%
California	19.7%	21.6%	15.7%	34.3%	39.7%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey

Table C.2.2. Female Graduates of Behavioral Health Professions Education Programs by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/Addiction Counseling
	Master's	Doctoral			
Central California	78.4%	77.5%	88.9%	50.7%	67.3%
Greater Bay Area	79.8%	76.7%	81.8%	71.1%	51.0%
Inland Empire	84.4%	84.6%	81.8%	63.5%	38.3%
Los Angeles	79.5%	76.1%	82.5%	61.5%	66.1%
Northern & Sierra	77.8%	--	91.9%	100.0%	55.6%
Orange	81.9%	85.0%	86.2%	68.2%	56.0%
Sacramento Area	71.4%	--	88.2%	--	64.9%
San Diego Area	80.9%	80.4%	88.5%	--	61.9%
San Joaquin Valley	83.5%	--	85.5%	69.1%	68.0%
California	80.3%	78.4%	84.3%	65.7%	60.3%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey

Institutional Sector

Tables C.3.1. through C.3.5. present information on numbers of graduates per region and program type for three types of institutional ownership: public, private nonprofit, private for-profit.

Table C.3.1. First-Year Psychiatry Residents by Institutional Sector and Region, 2017

Region	Public	Private Nonprofit	Private For-Profit	Total Residents
Central Coast	--	--	--	0
Greater Bay Area	56%	44%	0%	36
Inland Empire	29%	71%	0%	21
Los Angeles	71%	29%	0%	42
Northern & Sierra	--	--	--	0
Orange	100%	0%	0%	9
Sacramento Area	100%	0%	0%	13
San Diego Area	100%	0%	0%	12
San Joaquin Valley	60%	40%	0%	15
California	67%	33%	0%	148

Source: National Resident Matching Program, 2017

Table C.3.2. First-Year Child and Adolescent Psychiatry Fellows by Institutional Sectors and Region, 2017

Region	Public	Private Nonprofit	Private For-Profit	Total Fellows
Central Coast	--	--	--	--
Greater Bay Area	69%	31%	0%	13
Inland Empire	--	--	--	--
Los Angeles	58%	42%	0%	19
Northern & Sierra	--	--	--	--
Orange	100%	0%	0%	4
Sacramento Area	100%	0%	0%	3
San Diego Area	100%	0%	0%	4
San Joaquin Valley	100%	0%	0%	3
California	82%	18%	0%	46

Source: National Resident Matching Program, 2016.

Table C.3.3. Public Institution Graduates of Behavioral Health Professions Education Programs by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/ Addiction Counseling
	Master's	Doctoral			
Central California	3.4%	0.0%	100.0%	100.0%	100.0%
Greater Bay Area	6.8%	0.0%	97.7%	83.3%	89.9%
Inland Empire	5.9%	0.0%	52.1%	100.0%	75.5%
Los Angeles	13.7%	0.0%	90.0%	100.0%	41.8%
Northern & Sierra	82.5%	--	100.0%	100.0%	100.0%
Orange	2.7%	0.0%	84.8%	100.0%	46.1%
Sacramento Area	100.0%	--	100.0%	--	55.4%
San Diego Area	7.2%	5.0%	96.2%	--	91.8%
San Joaquin Valley	44.0%	--	100.0%	100.0%	100.0%
California	10.3%	1.5%	91.6%	97.1%	62.2%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey

Table C.3.4. Private Nonprofit Institution Graduates of Behavioral Health Professions Education Programs by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/ Addiction Counseling
	Master's	Doctoral			
Central California	46.3%	47.1%	0.0%	0.0%	0.0%
Greater Bay Area	84.7%	73.3%	0.0%	0.9%	0.0%
Inland Empire	73.2%	73.1%	28.9%	0.0%	0.0%
Los Angeles	84.8%	97.9%	8.1%	0.0%	0.0%
Northern & Sierra	17.5%	--	0.0%	0.0%	0.0%
Orange	53.2%	46.7%	0.0%	0.0%	0.0%
Sacramento Area	0.0%	--	0.0%	--	16.2%
San Diego Area	47.0%	0.0%	0.0%	--	1.5%
San Joaquin Valley	56.0%	--	0.0%	0.0%	0.0%
California	69.3%	52.4%	4.7%	0.2%	0.8%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey

Table C.3.5. Private For-profit Institution Graduates of Behavioral Health Professions Education Programs by Program Type and Region, 2015

Region	Clinical or Counseling Psychology		Master's in Social Work	Psychiatric Technician	Substance Abuse/ Addiction Counseling
	Master's	Doctoral			
Central California	50.3%	52.9%	0.0%	0.0%	0.0%
Greater Bay Area	8.6%	26.7%	2.3%	15.8%	10.1%
Inland Empire	21.0%	26.9%	19.0%	0.0%	24.5%
Los Angeles	1.4%	2.1%	1.9%	0.0%	58.2%
Northern & Sierra	0.0%	--	0.0%	0.0%	0.0%
Orange	44.1%	53.3%	15.2%	0.0%	53.9%
Sacramento Area	0.0%	--	0.0%	--	28.4%
San Diego Area	45.7%	95.0%	3.8%	--	6.7%
San Joaquin Valley	0.0%	--	0.0%	0.0%	0.0%
California	20.3%	46.2%	3.7%	2.7%	36.9%

Source: Integrated Postsecondary Education Data System (IPEDS), 2015 Completions Survey

Appendix D: Projections of Trends in the Supplies of Behavioral Health Professionals in California

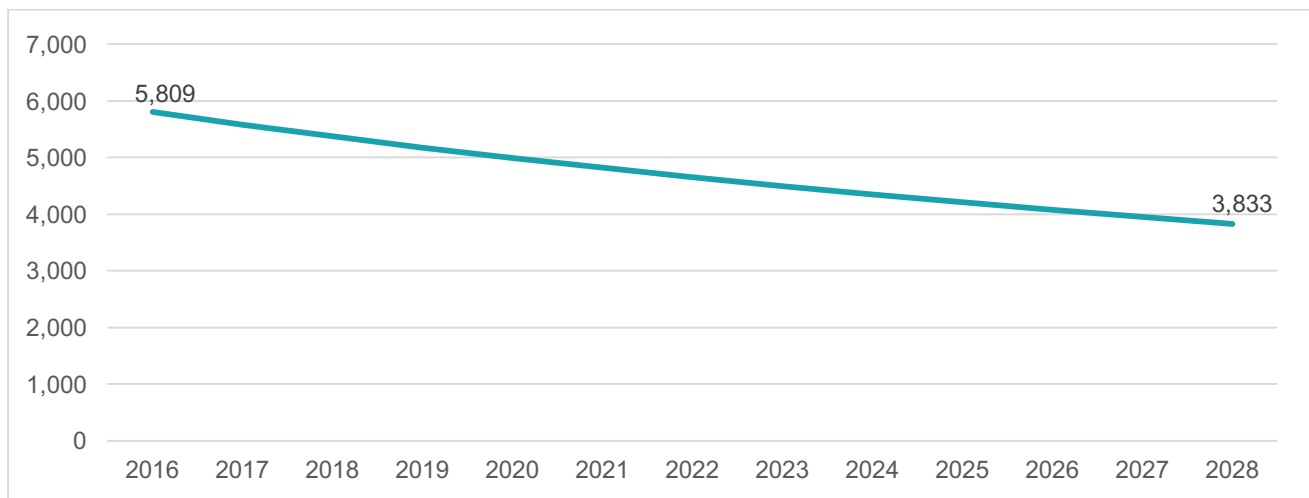
Appendix D presents a series of graphs that plot estimates of trends in the supplies of behavioral professionals in California between 2016 and 2018. For each profession, the graphs indicate whether supply is expected to increase or decrease and the rate of change in supply.

The supply forecasting method used to generate these projections is commonly called a “stock-and-flow” model. The number of behavioral health professionals licensed and living in California is the “stock” of professionals. Inflows of professionals are added to the stock of professionals, and the outflows are subtracted from the stock. The inflow of professionals includes graduates from education programs in California and professionals who relocate from other states or countries and obtain a license in California. The outflow is determined by migration out of California (to another state or country) and professionals who allow their licenses to lapse so they permanently leave the profession. Lapsed licenses can occur due to retirement, desire to pursue another occupation, death, or any other reason. Further information about the model can be found in Chapter 5.

Psychiatrists

Figure D.1 presents the projected supply of psychiatrists over the period 2016-2028. If the number of new entrants to psychiatry remains the same, the number of psychiatrists in California would decrease substantially. The supply of psychiatrists in California would decline from 5,809 in 2016 to 3,833 in 2028, a reduction of 34%.

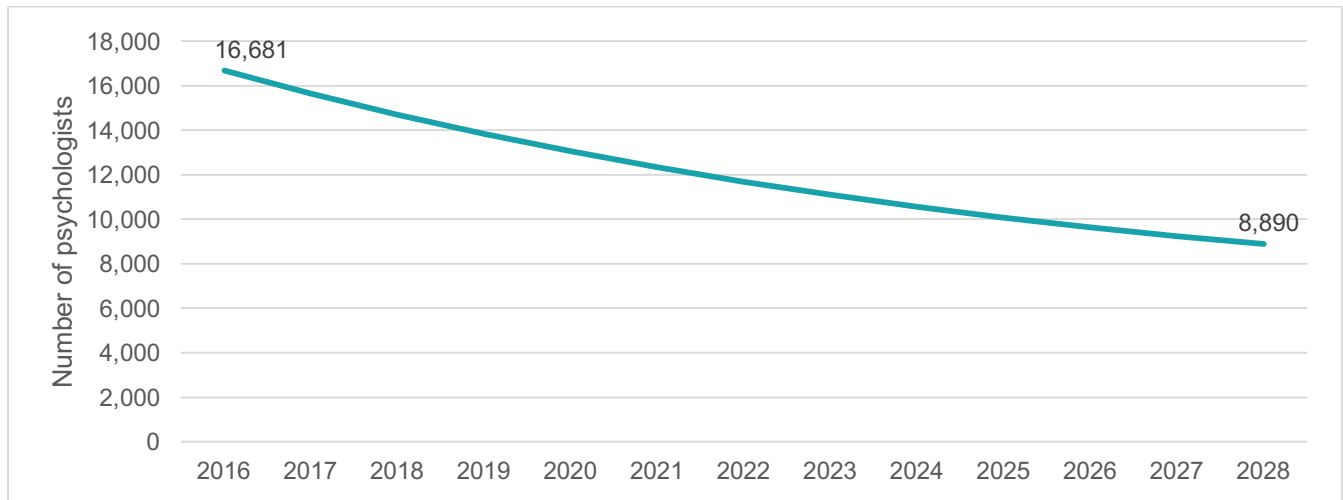
Figure D.1. Projected Supply of Psychiatrists, 2016-2028



Psychologists

Figure D.2 presents the projected supply of psychologists. If the number of new entrants to psychology remains the same, the number of psychologists in California would decrease substantially. The supply of psychologists would decline from 16,681 in 2016 to 8,890 in 2028, a reduction of 47%.

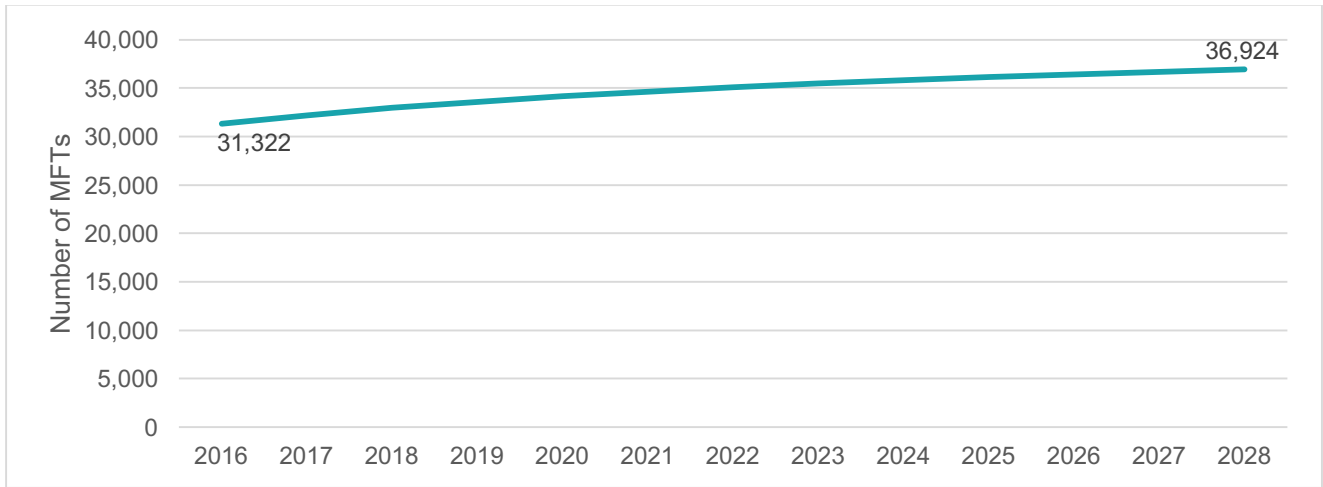
Figure D.2. Projected Supply of Psychologists, 2016-2028



Marriage and Family Therapists

Figure D.3 presents the projected supply of LMFTs. If the number of new entrants to the field remains the same, the supply of LMFTs in California is projected to increase from 31,322 in 2016 to 36,924 in 2030, growth of 18%. This high growth rate is the result of the relatively high number of new licenses issued per year. In the 2014-15 fiscal year, there were 4,192 new licenses issued, which is more than 10% of the total number of LMFTs in California.

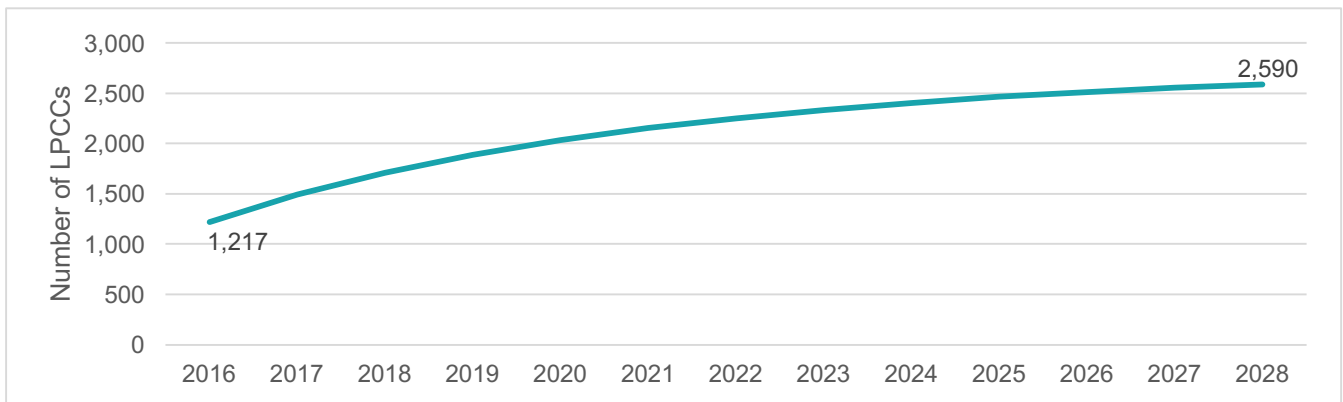
Figure D.3. Projected Supply of Marriage and Family Therapists, 2016-2028



Licensed Professional Clinical Counselors

Figure D.4 presents the projected supply of LPCCs. If the number of new entrants to the field remains the same, with 561 new licenses issued per year, the supply of LPCCs in California is projected to grow from 1,217 in 2016 to 2,590 in 2028, more than doubling the size of the current workforce. This estimate is based on the data on the rate of growth in LPCCs in recent years. This rate of growth may not persist in the future because LPCCs are a new profession in California for which the first licenses issued in 2012. The rate of growth may slow as the supply of licensed clinicians grows relative to the number of new entrants into the profession.

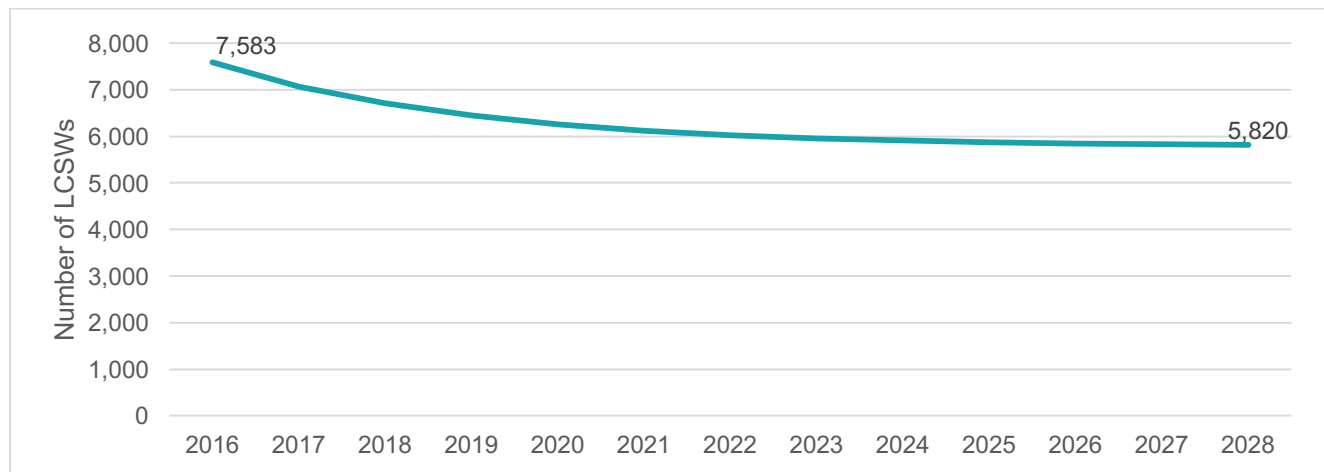
Figure D.4. Projected Supply of Licensed Professional Clinical Counselors, 2016-2028



Licensed Clinical Social Workers

Figure D.5 presents the projected supply of and demand for the number of LCSWs over the period 2016-2028. If the number of new entrants to the profession remains the same, the supply of LCSWs providing behavioral health services in California is projected to decline from 7,583 in 2016 to 5,820 in 2030, a decrease of 23%.

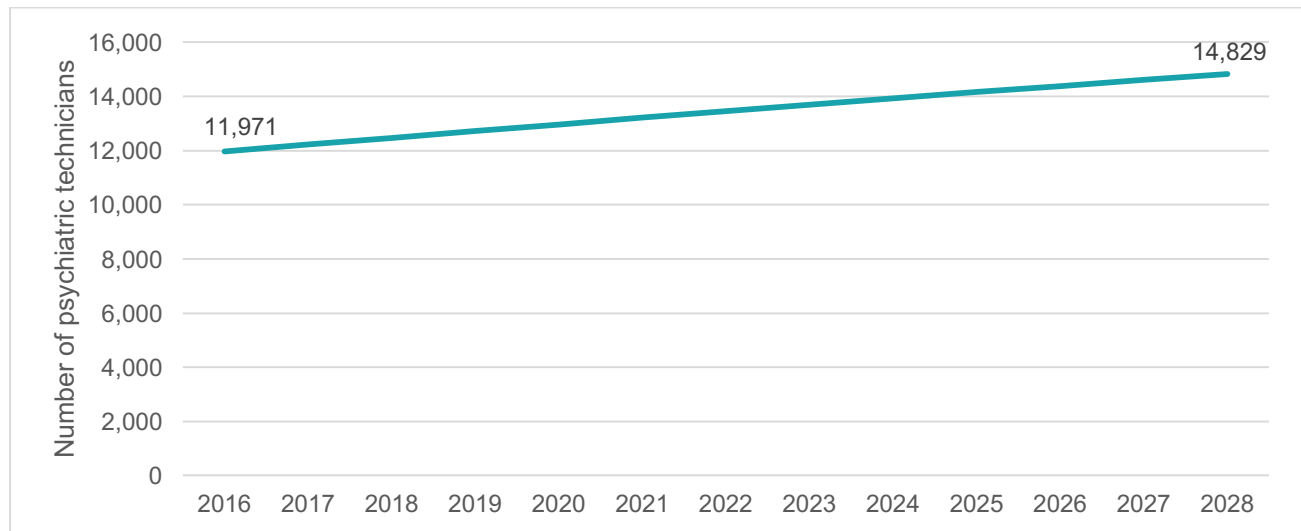
Figure B.5. Projected Supply of Licensed Clinical Social Workers, 2016-2028



Psychiatric Technicians

Figure D.6 presents the projected supply of and demand for the number of psychiatric technicians over the period 2016-2028. If the number of new entrants to the field remains the same, the supply of psychiatric technicians in California will rise from 11,971 in 2016 to 14,829 in 2028, an increase of 24%.

Figure B.6. Projected Supply of Psychiatric Technicians, 2016-2028



Appendix E: Definitions

Behavioral Health Professionals

In this report, the term behavioral health professionals is used to refer to behavioral health occupations for which licensure is required in California. They include psychiatrists, psychologists, marriage and family therapists, licensed professional clinical counselors, licensed clinical social workers, psychiatric technicians, psychiatric nurse practitioners, psychiatric clinical nurse specialists, and psychiatric registered nurses.

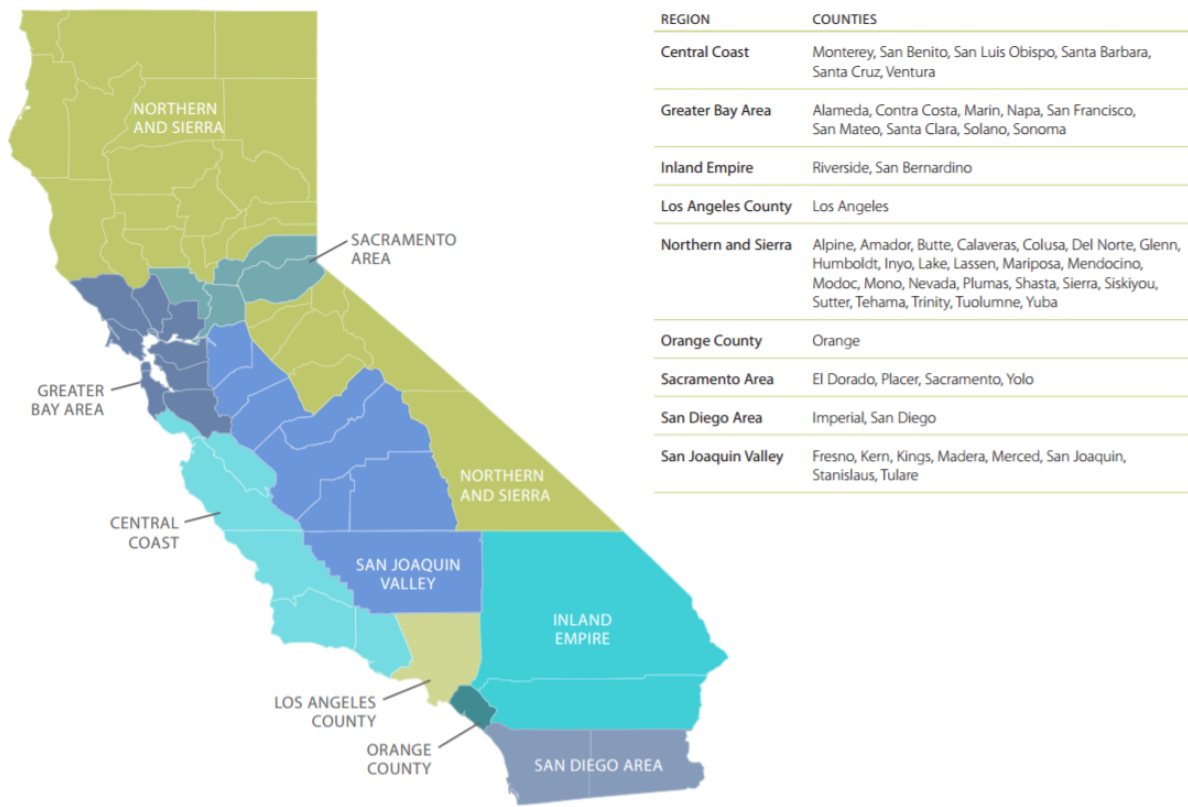
Full Time Equivalent (FTE)

"FTE" is a unit that expresses the workload of an employee as a ratio adjusted to the number of hours in a typical work week (usually 40 hours). For example, the workload of an employee who typically works 40 hours per week can be expressed as 1.0 FTE and the workload of an employee who works 60 hours per week can be expressed as 1.5 FTE.

Regions

The regions utilized in this report are the regions in the California Health Interview Survey (CHIS) administered by the UCLA Center for Health Policy Research. The CHIS regions group the state's 58 counties into nine distinct regions that are utilized for regional analysis by a number of organizations and publications. The precise breakdown of CHIS regions into California counties can be found below.

For all behavioral health professions, analyses were limited to licensed professionals and registered, pre-licensure professionals who are located in California. For psychiatrists, we used the practice address a psychiatrist reported in response to the Medical Board's mandatory survey to determine whether he or she practiced in California and to assign him/her to a region. If a psychiatrist did not report a practice address, we used his or her preferred mailing address, which may be either a practice or home address. For all other professions, we used a professional's address of record in the DCA master file to determine whether he or she is located in California and to assign him or her to a region. This may affect estimates of numbers of behavioral health professionals by region because some persons may reside in a county in one region and commute to work in a county in another region. For example, some behavioral health professionals who practice in the Los Angeles region may be misclassified as practicing in the Orange County region or the Central Coast region if they live in Orange County or Ventura County and only report a residential address.



Source: California Physicians: Surplus or Scarcity. Oakland, CA: California Health Care Foundation, 2014.

Appendix F: Data Sources

National Data Sources

U.S. Census Bureau

Additional information describing the Census data products utilized for this report is provided below.

Annual Estimates of the Resident Population

California population estimates at the state and regional levels were obtained from the Census Bureau of the Economic and Statistics Administration Population Estimates Program (PEP). The estimates generated by PEP are benchmarked to the most recent decennial census (2010) and are reflective of currently available data on births, deaths, and migration. County-level population estimates sourced from the Annual Estimates of the Resident Population (PEPANNRES) were aggregated into the nine CHIS regions described above. These data were used to calculate ratios of clinicians per 100,000 population. In each context, the most current data available were utilized. The population estimates found in this report can be accessed using the PEPANNRES table, available via American Fact Finder [here](#).

American Community Survey

Several components of analysis presented in this report were conducted using data from the 2011-2015 5-year American Community Survey (ACS) Public Use Microdata Sample (PUMS) file. PUMS data allow researchers to describe a range of population characteristics that are not in the summary tables available through American Fact Finder. In this report, PUMS data were used primarily for the description of physician assistants' geographic distribution, employment rate, and average weekly hours worked. Additional technical information about PUMS can be found on the "About PUMS" page [here](#) as well as in the Design and Methodology Report [here](#).

The ACS is not designed specifically for analysis of the health professions workforce. However, because PUMS data describe population characteristics at the individual person-level (i.e. each observation in the dataset represents one person's responses to the survey questions), the UCSF research team was able to limit the analysis to only those individuals most likely to be working as one of the health care providers that are the focus of this report. For example, persons who were not employed or out of the labor force for some other reason at the time of the survey were excluded. Persons whose reported level of educational attainment was not sufficient to meet the requirements for professional licensure in California also were excluded. Finally, it should be acknowledged that regional analysis of individual health professions was possible only by using the 5-year ACS PUMS file, which aggregates responses from survey participants over a five-year period. This file was used to ensure a sufficient number of sample cases from which to generate statistically valid estimates. The findings presented in this report sourced from the 5-year ACS PUMS file should be interpreted as a five-year average over the period 2011-2015.

National Center for Education Statistics (NCES)

Integrated Postsecondary Education System (IPEDS)

The U.S. Department of Education's National Center for Education Statistics (NCES) utilizes a system of annual surveys to collect data on enrollments, completions, and other characteristics from every institution that participates in federal student aid programs. More than 7,500 liberal arts colleges, research universities, community colleges, technical schools, and other programs participate in IPEDS data collection each year. At the time of the report's preparation, 2015 was the most recent year for which completions data were available. Further information about IPEDS can be found [here](#).

Some schools report statistics at the campus level rather than for each individual program. For this reason, the authors took additional steps to validate IPEDS data, especially those used in reporting the region-level supply of behavioral health and other health professions graduates.

National Residency Match Program (NRMP)

The National Residency Match Program (NRMP) is a nonprofit organization that matches graduates of U.S. and international medical schools with residency positions in the United States. The Match also performs this function for fellowship programs available to physicians wishing to subspecialize. Data on both primary care and specialty residencies in California were obtained from the "2016 NRMP Main Match Results", "NRMP Program Results 2012-2016 Main Residency Match", and "2017 Specialty Match Results" reports that are available on the NRMP website. Only first-year residents and fellows were included in the counts to serve as a proxy for numbers of graduates, which were not available. Additional information about NRMP data and reports can be found [here](#).

State Data Sources

California Board of Registered Nursing

The California Board of Registered Nursing (BRN) periodically contracts with the UCSF Healthforce Center to administer surveys of its licensees regarding their education, labor force participation, employment settings, income, and demographic characteristics. The most recent survey of registered nurses (RNs) was conducted in 2016. The most recent surveys of clinical nurse specialists (CNSs) and nurse practitioners (NPs) were conducted in 2010.

The BRN also conducts annual surveys of pre-licensure and post-licensure nursing education programs regarding admissions, enrollment, and completions. For nurse practitioner education programs, the percentages of completions by specialty are reported. The most recent report was published in July 2017 and presented findings from the 2006-2007 academic year through the 2015-2016 academic year.

Reports that UCSF has prepared for the BRN that are cited in this report can be found [here](#).

California Department of Consumer Affairs Licensee Masterfile, obtained June 15, 2016.

The Department of Consumer Affairs (DCA) maintains a database of over 150 professional license types for the various licensing boards it oversees, including the licensing boards that regulate MDs, NPs, and PAs. The research team obtained these data using a standard public information request form. All counts of licensed professionals presented in this report (based on DCA data) reflect individuals whose record indicated an “active” license as of June 15, 2016 (records marked “inactive”, “expired” or “delinquent” were excluded). In addition, individuals whose address of record was in a state outside of California were omitted from these counts under the assumption they are not currently practicing in California.

It is important to note that DCA data do not indicate whether licensed individuals practice in the profession for which they are licensed or whether they are employed at the time of data collection (e.g. someone with an active Licensed Clinical Social Worker license may be employed in an unrelated profession/industry or unemployed/out of the labor force altogether). As a result, the DCA data do not provide any information describing practice/employment activities; there is no way to know the extent to which a licensed individual is engaged in direct patient care versus other activities such as teaching, administration, or research. Thus, counts of licensed professionals presented in this report may overstate the actual supply of health care providers.

California Department of Finance, Demographic Research Unit.

The Demographic Research Unit at the California Department of Finance (DoF) produces population projections. The UCSF team used county-level projections through 2030 as part of its model for forecasting demand for behavioral health professionals. These and other DoF population projections can be found [here](#).

California Employment Development Department, Labor Market Information Division

Occupational Employment Statistics (OES)

The California Employment Development Department (EDD), Labor Market Information Division provides employment and wage estimates as part of its Occupational Employment Statistics and Wages (OES) program. OES produces these estimates for over 800 occupations at the California state and Metropolitan Statistical Area (MSA) levels. The authors used the most current data available at the time of the report's preparation (May 2015). Additional information about the OES program can be found here <https://www.bls.gov/oes/>.

Medical Board of California Mandatory and Supplemental Surveys.

The Medical Board of California (MBC) is the regulatory body that oversees the licensing of allopathic physicians (MDs) in California. California law² requires the MBC to administer a survey to MDs every two years as part of the licensure renewal process. The survey asks about licensees' professional activities in medicine, the number of hours they work, their medical specialty, the zip code of their practice, training status (i.e. whether a licensee is a resident or fellow), race/ethnicity, and languages spoken other than English.

For counts of actively licensed psychiatrists, MDs were excluded based on the following criteria:

² Business & Professions Code sections 803.1, 2425.1 and 2425.3

- **“Not in 2-Year Cohort”**: This criterion removes respondents who did not renew an existing license or establish a new license (in the case of recent medical school graduates) within two years of the survey’s distribution.
- **“Practicing Out-of-State”**: This criterion removes respondents who report that their primary practice location is outside the state of California regardless of their residence address. For example, physicians living on the California side of Lake Tahoe who primarily practice in the state of Nevada would be omitted from this analysis.

Additionally, MDs' training status was used to identify the number of licensed psychiatrists in the educational pipeline per the following criterion:

- **“Residents/Fellows”**: This criterion flags respondents who identify as either residents or fellows to ensure they are counted as trainees rather than active primary care physicians. These psychiatrists are considered trainees for purposes of this report because they have not completed all training required to practice in their chosen specialties.

The MBC mandatory survey asks respondents to identify their primary and secondary specialties from among 55 “Areas of Practice” (e.g., Allergy and Immunology, Internal Medicine). The UCSF team developed an algorithm to collapse the 55 “Areas of Practice” into eleven distinct categories: Emergency Medicine, Facility-Based Medicine, Family Medicine, General Surgery, General Internal Medicine, Medical Specialty, Obstetrics/Gynecology, Pediatrics, Psychiatry, Surgical Specialty, and Other Specialty. Physicians who the algorithm classified as psychiatrists were included in this report.

UCLA Center for Health Policy Research, California Health Interview Survey.

The California Health Interview Survey (CHIS) is a large statewide health survey that asks questions on a wide range of health topics. It is especially useful because it provides representative data on all 58 counties in California. Separate questionnaires are used to survey the three age-based respondent groups: Adults, Teens/Adolescents, and Children, so there is some variation in how questions are phrased and variables coded. Information about CHIS’ methodology, questionnaires, and sample design is available [here](#).

The analysis for this report is based on the 2015 Public Use One-year Data Files (Files) formatted for STATA statistical software. There is a separate file for each of the three age-based groups surveyed by CHIS (Adults, Teens/Adolescents, and Children), which reflects the differences in question phrasing and visit-based usage buckets for categorical variables.

ⁱ Supervised professional experience can be completed without registration as a psychological assistant and/or registered psychologist under the following conditions: as a doctoral student in a program with a formal internship placement; as an employee of an approved or accredited educational institution, a school district, a California state agency; as part of a formal postdoctoral training program. Experience earned outside of California may also be completed without registration provided it complies with all other California requirements.

ⁱⁱ A person can register as a registered psychologist if s/he is already in possession of a doctoral degree and has completed 1,500 hours of supervised experience, and plans to work for a non-profit community agency that receives 25% or more of its funding from governmental sources (not counting Medi-Cal or Medicare).

ⁱⁱⁱ Two possible pathways: (1) 1,750 hours of direct counseling experience plus 1,250 of non-clinical experience, or (2) a specific number of hours in each of seven content areas: individual psychotherapy, couples/family/children

counseling, group therapy, telehealth counseling, personal psychotherapy, direct supervised contact, client centered advocacy/report writing/psychological testing.

^{iv} Two possible pathways: (1) 1,750 hours of direct counseling experience and 1,250 hours of non-clinical experience, or (2) a specific number of hours in each of seven content areas: individual/group/couples/family counseling, group therapy, telehealth counseling, professional clinical counseling workshops/seminars, administration of psychological tests, client centered advocacy, direct supervised contact.

^v Includes 2,000 hours of clinical psychological diagnosis/assessment/treatment experience and 1,200 hours of non-clinical experience (e.g., report writing, psychological testing, client advocacy).

^{vi} All clinical nurse specialists, regardless of specialty, would have been required to complete the National Council Licensure Exam (NCLEX) for Registered Nurses prior to obtaining their RN license.

^{vii} In order to prescribe medications to patients, a nurse practitioner must also apply to the California Board of Registered Nursing for a Nurse Practitioner Furnishing Number.

^{viii} All nurse practitioners, regardless of specialty, would have been required to complete the National Council Licensure Exam (NCLEX) for Registered Nurses prior to obtaining their RN license.

^{ix} 576 hours of theoretical training plus 954 hours of supervised professional experience.

^x Completion of armed forces courses on neuropsychiatric nursing and care for persons with developmental disabilities plus one year of paid work experience.