

### Multipurpose Senior Services Program (MSSP) and Community Based Adult Services (CBAS) Needs Assessment Final Report: Deliverable #5

Prepared for:

**California Department of Aging (CDA)**

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**August 22, 2022**

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## EXECUTIVE SUMMARY

In order to plan for the Multipurpose Senior Services Program (MSSP) and Community Based Adult Services (CBAS) at the state and local levels, the California Department of Aging (CDA) contracted with the UCLA Center for Health Policy Research to identify the number of potential eligible individuals likely to use these programs.

The UCLA team first identified the program data sources needed to describe the number and demographic characteristics of MSSP and CBAS actual users in California in 2019 – 2020. Using data from the California Health Interview Survey (CHIS) and Medi-Cal data provided by the Department of Health Care Services (DHCS), the team then developed statistical models that were used internally, to estimate the number and demographic characteristics of Californians who were potentially eligible for MSSP and/or CBAS services, and compare these estimates with the numbers and characteristics of those who actually used these services in 2019-2020. Finally, the UCLA team used the California Department of Finance (DOF) population projections to generate estimates of 5-, 10-, and 30-year levels of MSSP and CBAS need in California. These 5-, 10-, and 30-year estimates (i.e., for 2025, 2030, 2050) include projections for the state, seven regions (i.e., Central Coast, Greater Bay Area, Los Angeles, Other Southern California, Northern/Sierra, Sacramento, San Joaquin Valley), and two counties (i.e., Orange and San Diego), which as the two most populated counties in California following Los Angeles, were selected to generate population projections of MSSP and CBAS need at the county level.

Results indicate that overall (i.e., statewide), and for both programs, there are many more individuals who are potentially eligible for CBAS and MSSP than are currently receiving these services. In addition, upon examination of available geographic data, there are some regional and local area differences between actual and potential users that are important to note. For example, while the Central Coast region is keeping pace with the same percentage of actual and estimated eligible CBAS users, the Los Angeles region is serving more than double the number who are estimated eligible. The remaining five regions (i.e., Greater Bay Area, Northern/Sierra, Other Southern California, Sacramento, and San Joaquin Valley) all have an estimated eligible CBAS user pool that is greater than the pool of actual CBAS users (with differences ranging from 3% to 17%).

The results also point to some notable differences in the demographic characteristics of actual program users when compared with those who are potentially eligible. For instance, a comparison of actual and estimated eligible users of CBAS suggests untapped opportunities to serve a younger population (i.e., 18–64 years of age), more English speakers, more Blacks, and more individuals who identify as biracial or multiracial. MSSP data, comparing actual and estimated eligible users, indicate a current deficit in service to the “younger-old” population (i.e., 65-74 years of age), individuals who identify English as their primary language, and Asians.

The California Department of Aging can use these findings to identify the number of actual and estimated eligible users of MSSP and CBAS, as well as the projected future number of potential MSSP and CBAS eligible individuals, throughout the state. This information, in combination with other data sources (e.g., information about provider supply) can be used to plan, promote, and target these services to the individuals who need them the most, and help prevent or delay more costly institutionalization.

## INTRODUCTION

The Multipurpose Senior Services Program (MSSP) operates under the Home and Community-Based Waiver authority of Title XIX of the Social Security Act. MSSP provides health/social care management to prevent unnecessary long-term care institutionalization of frail elderly persons. Site care management includes conducting client assessments, and developing care plans and follow-up to ensure appropriateness of the services provided.

The Community Based Adult Services (CBAS) is a community-based day health program that provides professional services at licensed Adult Day Health Centers (ADHC) to those at risk of needing institutional care. The ADHC/CBAS centers provide professional nursing services, physical, occupational, and speech therapies, mental health services, social services, personal care, hot meals and transportation to and from the participant's residence.

UCLA used select program and population-level data and an analysis framework (see Contract Deliverables 1 and 2) to create a demographic profile and a predictive model that was used internally to generate estimates of actual and potential CBAS and MSSP users in California. Specifically, UCLA identified demographic and geographic trends in users of CBAS and MSSP, and developed an eligibility indicator based on variables from the California Health Interview Survey (CHIS) to identify those who are potentially eligible for these programs.

## METHODS

UCLA reviewed all available CBAS and MSSP program data including the CBAS Participant Characteristics Report, Statistical Fact Sheet, and Monthly Statistical Summary Report, and the MSSP Statistical Fact Sheet and Quarterly Report Synopsis. These data sources included information on program enrollment (CBAS and MSSP), site location and capacity (CBAS), diagnosis and health status of participants by site (CBAS), and participant needs and services delivered by site (CBAS). UCLA also obtained aggregated demographic information on 2019 and 2020 MSSP and CBAS users from the California Department of Health Care Services (DHCS).

For each program, UCLA examined age category, gender, language, and race/ethnicity data. UCLA also initially examined the proportion of CBAS and MSSP users with blind, disabled, or Supplemental Security Income (SSI) aid codes, but determined that aid codes were not comparable to CHIS self-reported disability and income variables. All current and potential CBAS and MSSP users were considered to be nursing home eligible due to the presence of nursing home eligibility as a program requirement. UCLA examined all demographic variables statewide, among the seven California regions designated by CHIS (i.e., Central Coast, Greater Bay Area, Los Angeles, Other Southern California, Northern/Sierra, Sacramento, San Joaquin Valley), and for Orange County and San Diego County (the two most populated counties in California following Los Angeles). UCLA initially analyzed results for Los Angeles' eight Service Planning Areas (SPAs) (i.e., Antelope Valley, San Fernando Valley, San Gabriel Valley, Metro, West Los Angeles, South Los Angeles, East Los Angeles, South Bay); however, because these estimates were unreliable due to small sample sizes, only results for two SPAs (San Fernando Valley and South Los Angeles) are included here.

UCLA reviewed the criteria for MSSP and CBAS program participation and constructed an eligibility indicator that most closely mirrored program eligibility based on information available in CHIS. CHIS variables gave insight to certain participant needs that indicated MSSP and CBAS eligibility and were not available in Medi-Cal data, such as difficulty with activities of daily living (ADLs) and instrumental activities of daily living (IADLs).

The CHIS eligibility variables (specified below) aimed to represent the MSSP criteria of “certifiable for placement in a nursing facility” and the following CBAS criteria: “Meets Nursing Facility-A level of care or above”, “Has organic, acquired, or traumatic brain injury and/or chronic mental disorder”, “Has Alzheimer’s disease or other dementias”, “Has mild cognitive impairment”, “Has developmental disabilities”. With these eligibility variables, UCLA used predictive modeling to estimate who was eligible for CBAS and MSSP within the California Medi-Cal population.

#### MSSP CHIS Eligibility Variables

- 65+ *-and-*
- Medi-Cal enrolled *-and-*
- Under 100% FPL *-and-*
  - Answered “yes” to “Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?” *-and-*
  - Answered “yes” to “Do you have difficulty dressing or bathing?” *-or-*
  - Answered “yes” to “Because of a physical, mental, or emotional condition, do you have serious difficulty doing errands alone such as visiting a doctor's office or shopping?”

#### CBAS CHIS Eligibility Variables

- 18+ *-and-*
- Medi-Cal enrolled *-and either-*
  - 50+ *-and-*
    - Answered “yes” to “Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?” *-and either-*
    - Answered “yes” to “Do you have difficulty dressing or bathing?” *-or-*
    - Answered “yes” to “Because of a physical, mental, or emotional condition, do you have serious difficulty doing errands alone such as visiting a doctor's office or shopping?”
  - 18-49 *-and-*
    - Answered “yes” to “Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?” *-and-*
    - Answered “yes” to “Do you have difficulty dressing or bathing?” *-and-*
    - Answered “yes” to “Because of a physical, mental, or emotional condition, do you have serious difficulty doing errands alone such as visiting a doctor's office or shopping?”

UCLA obtained demographic information on 2019 and 2020 MSSP and CBAS users from DHCS. For each population for a given year, DHCS pulled categorical data for age, gender, language, and race/ethnicity, provided data reporting the number of users who were assigned blind/disabled or Supplemental Security Income (SSI) aid codes, and data about the number of users covered by both Medi-Cal and Medicare (dual coverage).

UCLA used a three-step approach to identify potential users of CBAS and MSSP using 2019 and 2020 CHIS public access file (PUF) and confidential data through the data access center (DAC): (1) Develop Prediction Model, (2) Raking (weight adjustment), and (3) Projections.

### Prediction Model

UCLA used CHIS individual-level data and a machine learning method known as random forest to identify potential CBAS/MSSP participants. The random forest algorithm works by learning the data pattern on a subset of the data, i.e., a training set, and then classifying individuals into eligible or not on the rest of the data, i.e., a testing set to predict eligibility. Based on the UCLA Definition of Program Eligibility, 1,237 individuals were identified in CHIS as potentially eligible for the programs, representative of 1,015,969 people in California. From this pool, potential CBAS and MSSP participants were predicted.

UCLA developed the Random Forest prediction model using demographic variables, health indicators, and utilization variables from CHIS as predictors of eligibility.

- i. **Demographic variables**– age, gender, race/ethnicity, citizenship status, length of stay in the US, education, family size, family type, language spoken at home, federal poverty level (FPL), veteran status, urban/rural location of residence.
- ii. **Health indicator variables**– diabetes, heart disease, asthma, high blood pressure, smoking, Kessler Psychological distress (K-6) score, Body Mass Index (BMI), self-reported health status, blind/deaf status.
- iii. **Utilization variables** – usual source of care, doctor visit, dentist visit, emergency department visit, dual insurance status.

### Raking (weight adjustment)

Raking is the process of adjusting weight distribution so that the area estimates resemble the true population distribution. A raking algorithm was applied to CHIS data to adjust the distribution of county, region, and Los Angeles Service Planning Area (SPA) estimates. The weights generated through the data raking process were used in the prediction model to identify potential users among the various geographic areas.

### Projections

UCLA used CHIS data and [population projections from the Department of Finance](#) to estimate the number of eligible CBAS and MSSP users for the years 2025, 2030, and 2050, statewide, by region, and for San Diego and Orange counties. UCLA used the distribution for those estimated as eligible for 2020 as a baseline estimate and calculated the trend of growth for projected eligibility over time.

UCLA applied program eligibility criteria to CHIS data, used statistical method of raking this data using Department of Finance (DOF) projections as target and finally applied predictive modelling to provide estimates on the trajectory of growth of potential users for CBAS and MSSP services.

## FINDINGS: CBAS and MSSP Actual Users and Estimated Eligible

### Demographic Characteristics of Program Users

UCLA compared the demographics of actual CBAS and MSSP users to those who were estimated as eligible for these programs in 2019 and in 2020. In this report, UCLA focuses on the more recent 2020 findings due to the similarity between 2019 and 2020 trends.

UCLA estimated that 243,400 (range: 152,600-334,200) Medi-Cal recipients were eligible for CBAS (Exhibit 1) and 106,700 (range: 71,100-142,300) were eligible for MSSP in 2020 (Exhibit 2).

CBAS actual users in 2020 were primarily over 65 years of age (86%), female (64%), Asian (37%) or white (36%), and spoke a language other than English or Spanish (66%). UCLA estimated that 74% of those eligible for CBAS were under 65, 56% were female, 13% were Asian, and 6% spoke a language other than English or Spanish (Exhibit 1).

Exhibit 1: Demographics of Actual Users and those Estimated as Eligible for CBAS in California, 2020

		CBAS	
		Actual CBAS Users	Estimated Eligible for CBAS
<b>Total</b>		<b>38,373</b>	<b>243,400 (-/+ 90,800)</b>
<b>Age Category</b>	18-34	2%	30%
	35-49	3%	27%
	50-64	10%	17%
	65+	86%	26%
<b>Gender</b>	Female	64%	56%
<b>Primary Language</b>	English	21%	82%
	Spanish	12%	12%
	Other*	66%	6%
<b>Race/Ethnicity</b>	White	36%	32%
	Hispanic	15%	12%
	Black	3%	14%
	Asian	37%	13%
	Other	9%	29%

Source: Aggregate Medi-Cal eligibility and claims data from 2020 obtained from DHCS, and estimates generated using 2020 California Health Interview Survey (CHIS) data.

Notes: CBAS is Community-Based Adult Services. \*For a breakdown of "other" languages, please see Appendix B.

MSSP actual users in 2020 were primarily over 85 (42%), female (74%) and white (37%) or Hispanic (32%), while UCLA estimated that 42% of those eligible for MSSP were 65-74 years of age, 78% were female, 26% were white, and 14% were Hispanic (Exhibit 2).

Note: The higher representation of females as actual users and estimated eligible users in both the CBAS and MSSP programs may be partially explained by a combination of program eligibility criteria, longer life expectancy, and the following population-level estimates generated by the California Health Interview Survey:

- There are more women than men in California (51% female, 48% male)
- Women are more likely to be low income (FPL<138%) compared to men (female 58%, male 41%)
- Women are more likely to be unemployed compared to men (female 59%, male 40%)
- Women are more likely to answer yes to questions about difficulties with activities of daily living (female 57%, male 42%)

In summary, women are more likely than men to be unemployed, to have low incomes, and to have physical and mental limitations in activities of daily living. Taken together, these factors indicate that women are more likely than men to meet MSSP and CBAS program eligibility criteria and to represent a larger proportion of both actual and estimated eligible users.

Exhibit 2: Demographics of Actual Users and those Estimated as Eligible for MSSP in California, 2020

		MSSP	
		Actual MSSP Users	Estimated Eligible for MSSP
<b>Total</b>		<b>10,324</b>	<b>106,700 (-/+ 35,600)</b>
<b>Age Category</b>	65-74	19%	42%
	75-84	38%	27%
	85+	42%	31%
<b>Gender</b>	Female	74%	78%
<b>Primary Language</b>	English	53%	65%
	Spanish	26%	12%
	Other*	20%	23%
<b>Race/Ethnicity</b>	White	37%	26%
	Hispanic	32%	14%
	Black	10%	11%
	Asian	14%	47%
	Other	7%	1%

Source: Aggregate Medi-Cal eligibility and claims data from 2020 obtained from DHCS, and estimates generated using 2020 California Health Interview Survey (CHIS) data.

Notes: MSSP is Multi-Purpose Senior Services Program. \*For a breakdown of “other” languages, please see Appendix B.

### Program Estimates by Geographic Areas

UCLA examined CBAS and MSSP users and those who were estimated to be eligible for these programs statewide, by seven CHIS Regions (i.e., Central Coast, Greater Bay Area, Los Angeles, Other Southern California, Northern/Sierra, Sacramento, San Joaquin Valley), within two California counties (Orange County and San Diego County), and by the eight Service Planning Areas (SPAs) designated within Los Angeles County by the Department of Public Health (i.e., Antelope Valley, San Fernando Valley, San Gabriel Valley, Metro, West Los Angeles, South Los Angeles, East Los Angeles, South Bay).

**CBAS actual users and estimated eligible.** Regionally, Los Angeles had the largest concentration of CBAS actual users in 2020 (25,577, or 67% of the CBAS population) and UCLA estimated that 66,600 people in Los Angeles (27% of the estimated eligible CBAS population) were eligible for CBAS (Exhibit 3). UCLA also estimated that 48,000 residents (20%) of San Joaquin Valley were eligible for CBAS while 1,221 (3%) were actually receiving services (Exhibit 3).



UCLA estimated that Orange County accounted for 9% (21,700) of those estimated eligible for CBAS in California, while actual Orange County users made up 7% (2,755) of California CBAS users statewide. In San Diego County, there were 2,501 (7%) actual CBAS users, while UCLA estimated that 19,100 Medi-Cal recipients were eligible (8%) (Exhibit 3).

A comparison between actual users and those estimated to be eligible in the two Service Planning Areas (SPAs) of Los Angeles suggests that San Fernando Valley (SPA 2) was well served in 2020, with 39% actually served compared with 12% of those estimated as likely to be eligible. Conversely, in South Los Angeles (SPA 6), available data indicate that the local population may be greatly underserved, as only 6% of actual users in South Los Angeles are currently served as compared with the 24% estimated to be eligible for CBAS services (Exhibit 3).

Exhibit 3: Actual Users and those Estimated as Eligible for CBAS by State, Region, Orange and San Diego Counties, and Two Los Angeles Service Planning Areas (SPAs), 2020

	CBAS			
	Actual CBAS Users		Estimated Eligible for CBAS	
<b>California Total</b>	<b>38,373</b>		<b>243,400</b> (-/+ 90,800)	
<b>CHIS Regions<sup>^</sup>: Count and Percentage of Total</b>				
Central Coast	1,234	3%	7,700 (-/+ 4,100)	3%
Greater Bay Area	2,477	6%	26,900 (-/+ 11,900)	11%
Los Angeles	25,557	67%	66,600 (-/+19,400)	27%
Northern/ Sierra	184	0%	11,900 (-/+ 3,800)	5%
Other Southern California	6,998	18%	70,900 (-/+ 18,300)	29%
Sacramento Area	716	2%	12,000 (-/+ 3,100)	5%
San Joaquin Valley	1,221	3%	48,000 (-/+ 10,600)	20%
Orange County	2,755	7%	21,700 (-/+ 12,800)	9%
San Diego County	2,501	7%	19,100 (-/+ 7,100)	8%
<b>Service Planning Areas (SPAs) of Los Angeles: Count and Percentage of Total</b>				
	Actual CBAS Users		Estimated Eligible for CBAS	
<b>Los Angeles Total</b>	<b>25,557</b>		<b>66,600</b> (-/+19,400)	
SPA 2: San Fernando	9,925	39%	7,800 (-/+3,000)	12%
SPA 6: South Los Angeles	1,489	6%	15,900 (-/+6,200)	24%

Source: Aggregate Medi-Cal eligibility and claims data from 2020 obtained from DHCS, and estimates generated using 2020 California Health Interview Survey (CHIS) data.

Notes: CBAS is Community-Based Adult Services. Only SPA2 and SPA 6 are included in the report due to unstable estimates for the other SPAs. ^For a breakdown of regions by counties, please see Appendix A.

**MSSP actual users and estimated eligible.** Los Angeles had the largest concentration of actual MSSP users in 2020 (3,135; 30%) followed by the Greater Bay Area (2,082; 20%) and Other Southern California (1,966; 19%) (Exhibit 4). UCLA estimated the MSSP eligible population of Los Angeles to be 35,700 (33%), the Greater Bay Area to be 19,700 (18%), and Other Southern California to be 34,200 (32%). UCLA also estimated that 13,600 Medi-Cal recipients (13%) in San Joaquin Valley were eligible for MSSP while 1,192 (12%) were actually receiving services (Exhibit 4).

UCLA estimated that MSSP users in Orange County accounted for 14% (15,100) of those estimated eligible for MSSP in California, while actual Orange County users made up 5% (532) of California MSSP actual users. In San Diego County, there were 639 (6%) CBAS users, while UCLA estimated that 9,200 Medi-Cal recipients were eligible (9%) (Exhibit 4).

A review of data from the two Service Planning Areas (SPAs) of Los Angeles indicate that the pool of potentially eligible for MSSP in SPA 2 (17%) is five percentage points greater than the proportion actually served (12%), while actual users and potential eligible in SPA 6 are at par, with 12% represented in each category (Exhibit 4).

Exhibit 4: Actual Users and those Estimated as Eligible for MSSP by State, Region, Orange and San Diego Counties, and Two Los Angeles Service Planning Areas (SPAs), 2020

	MSSP			
	Actual MSSP Users		Estimated Eligible for MSSP	
<b>California Total</b>	<b>10,324</b>		<b>106,700</b> <b>(-/+ 35,600)</b>	
<b>CHIS Regions<sup>^</sup>: Count and Percentage of Total</b>				
Central Coast	724	7%	1,900 (-/+ 1,500)	2%
Greater Bay Area	2,082	20%	19,700 (-/+ 11,400)	18%
Los Angeles	3,135	30%	35,700 (-/+ 13,400)	33%
Northern/ Sierra	851	8%	1,300 (-/+ 600)	1%
Other Southern California	1,966	19%	30,000 (-/+ 14,800)	28%
Sacramento Area	374	4%	5,000 (-/+ 2,100)	5%
San Joaquin Valley	1,192	12%	13,600 (-/+ 5,400)	13%
<b>Counties: Count and Percentage of Total</b>				
Orange County	532	5%	15,100 (-/+ 13,600)	14%
San Diego	639	6%	9,200	8%

MSSP				
Actual MSSP Users			Estimated Eligible for MSSP	
			(-/+ 4,200)	
<b>Service Planning Areas (SPAs) of Los Angeles: Count and Percentage of Total</b>				
<b>Los Angeles Total</b>	<b>3,135</b>		<b>35,700</b> <b>(-/+13,400)</b>	
SPA 2: San Fernando	366	12%	6,200 (-/+4,000)	17%
SPA 6: South Los Angeles	364	12%	4,200 (-/+ 1,900)	12%

Source: Aggregate Medi-Cal eligibility and claims data from 2020 obtained from DHCS, and estimates generated using 2020 California Health Interview Survey (CHIS) data.

Notes: MSSP is Multi-Purpose Senior Services Program. Only SPA2 and SPA 6 are included in the report due to unstable estimates for the other SPAs. ^For a breakdown of regions by counties, please see Appendix A.

### Demographic Characteristics by CHIS Regions

**CBAS demographics by region.** In 2020, the Greater Bay Area Region and Los Angeles had the highest proportion of 65 and older actual CBAS users (90%) while San Joaquin Valley had the lowest (49%). Users were primarily 65 and older across all regions. The Greater Bay Area Region had the highest proportion of Asian users (48%) and the Northern/ Sierra Region had the lowest (2%; Exhibit 5).

### Exhibit 5: Demographics of Actual CBAS Users in 2020, by Region ^

		Central Coast	Greater Bay Area	Los Angeles	Northern/ Sierra	Other Southern California	Sacramento Area	San Joaquin Valley
<b>TOTAL</b>		<b>1,234</b>	<b>2,477</b>	<b>25,557</b>	<b>184</b>	<b>6,998</b>	<b>716</b>	<b>1,221</b>
<b>Age</b>	18-34	3%	0%	1%	3%	3%	1%	7%
	35-49	5%	1%	2%	8%	5%	3%	13%
	50-64	17%	8%	7%	21%	15%	13%	31%
	65+	76%	90%	90%	68%	77%	82%	49%
<b>Sex</b>	Female	61%	65%	65%	58%	63%	66%	53%
<b>Language</b>	English	42%	22%	16%	94%	30%	26%	59%
	Spanish	32%	5%	12%	0%	12%	3%	18%
	Other*	26%	73%	72%	6%	59%	71%	24%
<b>Race/ Ethnicity</b>	White	19%	30%	40%	76%	25%	65%	25%
	Hispanic	39%	7%	14%	4%	16%	6%	32%
	Black	1%	7%	3%	2%	3%	7%	9%
	Asian	25%	48%	38%	2%	38%	13%	18%
	Other	15%	8%	6%	16%	17%	9%	17%

Source: Aggregate Medi-Cal eligibility and claims data from 2020 obtained from DHCS.

Notes: CBAS is Community-Based Adult Services. ^For a breakdown of regions by counties, please see Appendix A. \*For a breakdown of "other" languages, please see Appendix B.

UCLA estimated that the Greater Bay Area Region had the highest proportion of potential CBAS users who were 65 and older (50%) while the Northern/ Sierra region had the lowest (10%). The Greater Bay

Area Region was estimated to have the highest proportion of potential users who were Asian (44%) and the Central Coast region the lowest (16%; Exhibit 6).

Exhibit 6: Demographics of those Estimated as Eligible for CBAS in 2020, by Region<sup>^</sup>

		Central Coast	Greater Bay Area	Los Angeles	Northern/ Sierra	Other Southern California	Sacramento Area	San Joaquin Valley
<b>TOTAL</b>		7,700 (-/+ 4,100)	26,900 (-/+ 11,900)	66,600 (-/+19,400)	11,900 (-/+3,800)	70,900 (-/+18,300)	12,000 (-/+3,100)	48,000 (-/+ 10,600)
<b>Age</b>	18-34	57%	26%	29%	32%	31%	23%	19%
	35-49	17%	6%	12%	24%	16%	23%	29%
	50-64	12%	18%	24%	34%	20%	26%	33%
	65+	14%	50%	35%	10%	34%	29%	20%
<b>Sex</b>	Female	61%	62%	76%	63%	57%	53%	59%
<b>Language</b>	English	91%	58%	73%	97%	78%	87%	95%
	Spanish	2%	14%	21%	2%	14%	7%	3%
	Other*	7%	27%	7%	2%	8%	6%	2%
<b>Race/ Ethnicity</b>	White	48%	30%	22%	56%	32%	51%	40%
	Hispanic	23%	12%	19%	6%	15%	10%	10%
	Black	7%	11%	20%	6%	12%	12%	16%
	Asian	16%	44%	36%	26%	37%	21%	26%
	Other	6%	3%	3%	5%	4%	6%	9%

Source: Estimates generated using 2020 California Health Interview Survey (CHIS) data.

Notes: CBAS is Community-Based Adult Services. <sup>^</sup>For a breakdown of regions by counties, please see Appendix A. \*For a breakdown of "other" languages, please see Appendix B.

**MSSP demographics by region.** Actual MSSP users were primarily 75 to 84 years old in the Northern/ Sierra (44%) and Sacramento (40%) regions, while users in all other regions were primarily 85 and older. The Greater Bay Area, Northern/ Sierra, and Sacramento regions had primarily white users (33%, 84%, and 47%), and the Central Coast, Los Angeles, Other Southern California, and San Joaquin Valley had primarily Hispanic users (46%, 40%, 35%, and 43%; Exhibit 7).

Exhibit 7: Demographics of Actual MSSP Users in 2020, by Region<sup>^</sup>

		Central Coast	Greater Bay Area	Los Angeles	Northern/ Sierra	Other Southern California	Sacramento Area	San Joaquin Valley
<b>TOTAL</b>		<b>724</b>	<b>2,082</b>	<b>3,135</b>	<b>851</b>	<b>1,966</b>	<b>374</b>	<b>1,192</b>
<b>Age</b>	65-74	23%	20%	15%	30%	18%	25%	20%
	75-84	37%	34%	40%	44%	38%	40%	40%
	85+	40%	46%	45%	26%	44%	35%	40%

		Central Coast	Greater Bay Area	Los Angeles	Northern/ Sierra	Other Southern California	Sacramento Area	San Joaquin Valley
<b>Sex</b>	Female	74%	72%	75%	77%	75%	79%	73%
<b>Language</b>	English	59%	49%	35%	96%	56%	74%	64%
	Spanish	39%	17%	36%	3%	28%	8%	29%
	Other*	2%	34%	29%	1%	16%	18%	6%
<b>Race/ Ethnicity</b>	White	41%	33%	28%	84%	33%	47%	35%
	Hispanic	46%	20%	40%	6%	35%	13%	43%
	Black	3%	12%	13%	2%	8%	16%	10%
	Asian	4%	26%	14%	1%	16%	16%	5%
	Other	6%	9%	5%	6%	8%	9%	7%

Source: Aggregate Medi-Cal eligibility and claims data from 2020 obtained from DHCS.

Notes: MSSP is Multi-Purpose Senior Services Program. ^For a breakdown of regions by counties, please see Appendix A. \*For a breakdown of "other" languages, please see Appendix B.

UCLA estimated that potential MSSP users were primarily 85 and older in Other Southern California (43%), 75-84 years of age in the Sacramento (52%) regions, while potential users in all other regions were primarily 65 to 74 years old. The Northern/ Sierra, Sacramento, and San Joaquin Valley regions were estimated to have primarily white potential users (75%, 38%, and 36%), the Central Coast was estimated to have primarily Hispanic potential users (46%), while the Greater Bay Area, Los Angeles, and Other Southern California regions were estimated to have primarily Asian potential users (52%, 50%, and 53%; Exhibit 8).

Exhibit 8: Demographics of those Estimated as Eligible for MSSP in 2020, by Region<sup>^</sup>

		Central Coast	Greater Bay Area	Los Angeles	Northern/ Sierra	Other Southern California	Sacramento Area	San Joaquin Valley
<b>TOTAL</b>		1,900 (-/+1,500)	19,700 (-/+11,400)	35,700 (-/+13,400)	1,300 (-/+600)	30,000 (-/+14,800)	5,000 (-/+2,100)	13,600 (-/+5,400)
<b>Age</b>	65-74	69%	37%	43%	46%	41%	40%	56%
	75-84	22%	36%	22%	29%	16%	52%	19%
	85+	9%	27%	35%	25%	43%	8%	25%
<b>Sex</b>	Female	85%	84%	83%	73%	79%	62%	76%
<b>Language</b>	English	38%	55%	61%	94%	68%	71%	80%
	Spanish	55%	3%	17%	2%	12%	4%	10%
	Other*	8%	42%	22%	5%	20%	25%	10%
<b>Race/ Ethnicity</b>	White	9%	21%	20%	75%	26%	38%	36%
	Hispanic	46%	6%	20%	2%	12%	4%	15%
	Black	7%	4%	9%	12%	9%	12%	7%
	Asian	33%	52%	50%	2%	53%	37%	22%
	Other	5%	17%	2%	9%	1%	9%	20%

Source: Estimates generated using 2020 California Health Interview Survey (CHIS) data.

Notes: MSSP is Multi-Purpose Senior Services Program. ^For a breakdown of regions by counties, please see Appendix A. \*For a breakdown of “other” languages, please see Appendix B.

### Orange County and San Diego County

UCLA examined demographic trends among CBAS and MSSP actual and estimated eligible users in Orange County and San Diego County. These counties were selected because they are the two most populated counties in California following Los Angeles and, due to their size, offered the greatest potential to generate stable estimates.

Orange County CBAS actual users were primarily 65 and older (85%), female (66%), Asian (62%), and primarily spoke a language other than English or Spanish (69%). In comparison, UCLA estimated that those eligible for CBAS in Orange County were younger (53% were 65 and older) and primarily spoke English (77%). San Diego county CBAS users were largely 65 and older (76%), white (36%), and spoke a language other than English or Spanish (67%) while UCLA estimated that those eligible were primarily under 65 years of age (70%), white (31%), Asian (31%) and Hispanic (25%), and spoke English (67%; Exhibit 9).

Exhibit 9: Demographics of Actual Users and those Estimated as Eligible for CBAS in Orange and San Diego Counties, 2020

		Orange County		San Diego County	
		Receiving CBAS	Estimated Eligible for CBAS	Receiving CBAS	Estimated Eligible for CBAS
<b>TOTAL</b>		<b>2,800</b>	<b>21,700 (-/+12,800)</b>	<b>2,501</b>	<b>19,100 (-/+7,100)</b>
<b>Age</b>	18-34	4%	23%	1%	18%
	35-49	3%	13%	4%	30%
	50-64	7%	10%	19%	22%
	65+	85%	53%	76%	31%
<b>Sex</b>	Female	66%	71%	63%	69%
<b>Language</b>	English	23%	77%	24%	67%
	Spanish	8%	10%	9%	23%
	Other*	69%	13%	67%	10%
<b>Race/ Ethnicity</b>	White	18%	23%	36%	31%
	Hispanic	10%	10%	11%	25%
	Black	1%	7%	4%	9%
	Asian	62%	54%	20%	31%
	Other	9%	5%	30%	3%

Source: Aggregate Medi-Cal eligibility and claims data from 2020 obtained from DHCS, and estimates generated using 2020 California Health Interview Survey (CHIS) data.

Notes: CBAS is Community-Based Adult Services. \*For a breakdown of “other” languages, please see Appendix B.

Orange County MSSP actual users were primarily female (73%), Asian (40%), and primarily spoke English (46%). UCLA estimated that those eligible for MSSP in Orange County were mostly female (96%), Asian (59%), and primarily spoke English (82%). San Diego county MSSP actual users were white (41%) and spoke English (64%) while UCLA estimated that potential users were primarily Asian (54%), and spoke English (43%), Spanish (16%), or Other language (41%); Exhibit 10).

Exhibit 10: Demographics of Actual Users and those Estimated as Eligible for MSSP in Orange and San Diego Counties, 2020

		Orange County		San Diego County	
		Receiving MSSP	Estimated Eligible for MSSP	Receiving MSSP	Estimated Eligible for MSSP
<b>TOTAL</b>		<b>532</b>	<b>15,100 (-/+13,600)</b>	<b>639</b>	<b>9,200 (-/+4,200)</b>
<b>Age</b>	65-74	17%	11%	17%	54%
	75-84	36%	3%	40%	19%
	85+	47%	86%	43%	27%
<b>Sex</b>	Female	73%	96%	77%	84%
<b>Language</b>	English	46%	82%	64%	43%
	Spanish	13%	1%	24%	16%
	Other*	40%	17%	12%	41%
<b>Race/ Ethnicity</b>	White	32%	26%	41%	22%
	Hispanic	20%	8%	28%	13%
	Black	2%	7%	8%	8%
	Asian	40%	59%	12%	54%
	Other	6%	0%	11%	2%

Source: Aggregate Medi-Cal eligibility and claims data from 2020 obtained from DHCS, and estimates generated using 2020 California Health Interview Survey (CHIS) data.

Notes: MSSP is Multi-Purpose Senior Services Program. \*For a breakdown of “other” languages, please see Appendix B.

#### Los Angeles Service Planning Areas (SPAs)

UCLA analyzed data from the eight Los Angeles Service Planning Areas (SPAs) (i.e., Antelope Valley, San Fernando Valley, San Gabriel Valley, Metro, West Los Angeles, South Los Angeles, East Los Angeles, South Bay). However, after careful consideration, UCLA has determined that the estimates of the SPAs are not reliable due to small sample sizes. Here, the demographics of actual program beneficiaries and estimates generated for two of the eight SPAs are presented (i.e., SPA 2: San Fernando Valley, SPA 6: South Los Angeles). The estimates for CBAS show that in San Fernando Valley, the total number of current recipients fall within the range for the estimate (4,800 to 10,800) while actual CBAS users in South Los Angeles are much lower than the estimated eligible population. For MSSP, the estimated eligible pool of potential users in both San Fernando Valley and South Los Angeles is much larger than actual MSSP users in these areas. However, these estimates should be interpreted and used with caution due to the small sample size issue (Exhibit 11 and Exhibit 12).

Exhibit 11: Demographics of Actual Users and those Estimated as Eligible for CBAS by Los Angeles Service Planning Areas (SPAs), 2020

		SPA 2: San Fernando Valley		SPA 6: South Los Angeles	
		Receiving CBAS	Estimated Eligible for CBAS	Receiving CBAS	Estimated Eligible for CBAS
<b>TOTAL</b>		<b>9,925</b>	<b>7,800 (-/+3,000)</b>	<b>1,489</b>	<b>15,900 (-/+6,200)</b>
<b>Age</b>	18-34	1%	35%	5%	29%

		SPA 2: San Fernando Valley		SPA 6: South Los Angeles	
		Receiving CBAS	Estimated Eligible for CBAS	Receiving CBAS	Estimated Eligible for CBAS
	35-49	1%	21%	6%	3%
	50-64	7%	15%	18%	40%
	65+	91%	28%	71%	27%
<b>Sex</b>	Female	62%	70%	61%	82%
<b>Language</b>	English	13%	65%	38%	84%
	Spanish	12%	24%	38%	14%
	Other*	75%	11%	24%	2%
<b>Race/ Ethnicity</b>	White	68%	22%	4%	21%
	Hispanic	13%	37%	41%	27%
	Black	0%	8%	25%	29%
	Asian	14%	31%	21%	16%
	Other	5%	1%	9%	7%

Source: Aggregate Medi-Cal eligibility and claims data from 2020 obtained from DHCS, and estimates generated using 2019 & 2020 California Health Interview Survey (CHIS) data.

Notes: CBAS is Community-Based Adult Services. \*For a breakdown of “other” languages, please see Appendix B.

### Exhibit 12: Demographics of Actual Users and those Estimated as Eligible for MSSP by Los Angeles Service Planning Areas (SPAs), 2020

		SPA 2: San Fernando Valley		SPA 6: South Los Angeles	
		Receiving MSSP	Estimated Eligible for MSSP	Receiving MSSP	Estimated Eligible for MSSP
<b>TOTAL</b>		<b>366</b>	<b>6,200 (-/+4,000)</b>	<b>364</b>	<b>4,200 (-/+1,900)</b>
<b>Age</b>	65-74	14%	70%	22%	72%
	75-84	40%	9%	43%	7%
	85+	46%	21%	36%	21%
<b>Sex</b>	Female	70%	87%	76%	90%
<b>Language</b>	English	30%	20%	68%	35%
	Spanish	27%	20%	31%	24%
	Other*	43%	60%	1%	41%
<b>Race/ Ethnicity</b>	White	51%	24%	3%	32%
	Hispanic	31%	38%	34%	8%
	Black	2%	3%	57%	25%
	Asian	10%	35%	1%	34%
	Other	6%	0%	5%	1%

Source: Aggregate Medi-Cal eligibility and claims data from 2020 obtained from DHCS, and estimates generated using 2019 & 2020 California Health Interview Survey (CHIS) data.

Notes: MSSP is Multi-Purpose Senior Services Program. \*For a breakdown of “other” languages, please see Appendix B.



## FINDINGS: CBAS and MSSP Population Projections

Following completion of analyses to document and compare the status of CBAS and MSSP actual and potential service users in 2019-2020, UCLA used individual level data, population projections and predictive modelling to develop estimated projections of potential Community-Based Adult Services (CBAS) and Multipurpose Senior Services Program (MSSP) potential users in California into the future, i.e., in 2025, 2030, and 2050.

In this section of the report, UCLA provides a breakdown of the overall projections by age, sex, and race/ethnicity for each program and aggregate projections by regions (i.e., Antelope Valley, San Fernando Valley, San Gabriel Valley, Metro, West Los Angeles, South Los Angeles, East Los Angeles, South Bay) and two counties (Orange County and San Diego County). UCLA did not analyze SPA-level projections because population projections are not available by SPA. UCLA also did not create projections based on the language variable because projections are not available by language.

### Overall Projection of Program Users and Demographics

UCLA estimated that 243,400 (range: 152,600-334,200) Medi-Cal recipients were eligible for CBAS and 106,700 (range: 71,100 - 142,300) were eligible for MSSP programs in 2020. Based on population projections provided by the Department of Finance (DOF), UCLA estimated that CBAS potential program participants are expected to grow from 2020 to 2025 by 0.4 percent, from 2020 to 2030 by 2 percent, and from 2020 to 2050 by 8 percent. Similarly, UCLA estimated MSSP potential program participants to grow from 2020 to 2025 by 3 percent, from 2020 to 2030 by 7 percent, and from 2020 to 2050 by 18 percent (Exhibit 13 and Exhibit 14).

UCLA estimated that the proportion of CBAS program users among those over the age of 65 is expected to grow from 26 percent in 2020 to 40 percent in 2050, while the proportion of those in the age group 18 to 34 is expected to decline from 30 percent to 22 percent. The proportion of female participants remains relatively constant at around 57 percent. In terms of race and ethnicity, there is a slight increase (1%) in Hispanic/Black/Asian populations accompanied by a 3 percent decline in the white population.

For MSSP, there is an expected increase in estimated eligible among those over 85 years, from 31 percent in 2020 to 52 percent in 2050, while the proportion of those in the age group 65 to 74 is expected to decline from 42 percent to 23 percent. Furthermore, the projection shows a slight increase (78 percent to 80 percent) among female participants, and a decline in the Asian population (47 percent to 43 percent) which remains the largest racial/ ethnic group among potential MSSP service users (Exhibit 13 and Exhibit 14).

Exhibit 11: Projections of Estimated Eligible for CBAS for the years 2020, 2025, 2030 and 2050

		Estimated Eligible for CBAS			
		2020	2025	2030	2050
<b>TOTAL</b>		<b>243,400</b> (-/+ 90,800)	<b>244,300</b> (-/+ 87,100)	<b>248,600</b> (-/+ 89,300)	<b>261,900</b> (-/+ 97,600)
<b>Age</b>	18-34	30%	29%	27%	22%
	35-49	27%	25%	25%	24%
	50-64	17%	16%	15%	13%
	65+	26%	30%	34%	40%
<b>Sex</b>	Female	56%	57%	57%	57%
<b>Race/ Ethnicity</b>	White	32%	31%	30%	29%
	Hispanic	12%	13%	13%	13%
	Black	14%	14%	15%	15%
	Asian	13%	14%	14%	14%
	Other	29%	28%	28%	30%

Source: Estimates generated using 2020 California Health Interview Survey (CHIS) data and Department of Finance Population Projections.

Notes: CBAS is Community-Based Adult Services.

Exhibit 14: Projections of Estimated Eligible for MSSP for the years 2020, 2025, 2030 and 2050

		Estimated Eligible for MSSP			
		2020	2025	2030	2050
<b>TOTAL</b>		<b>106,700</b> (-/+ 35,600)	<b>109,700</b> (-/+ 37,900)	<b>114,100</b> (-/+ 40,000)	<b>125,700</b> (-/+ 49,500)
<b>Age</b>	65-74	42%	37%	32%	23%
	75-84	27%	30%	31%	25%
	85+	31%	33%	37%	52%
<b>Sex</b>	Female	78%	78%	79%	80%
<b>Race/ Ethnicity</b>	White	26%	27%	27%	26%
	Hispanic	14%	14%	14%	15%
	Black	11%	11%	12%	14%
	Asian	47%	46%	46%	43%
	Other	1%	1%	1%	1%

Source: Estimates generated using 2020 California Health Interview Survey (CHIS) data and Department of Finance Population Projections.

Notes: MSSP is Multi-Purpose Senior Services Program.

### Projection of Program Users by Geographic Areas

UCLA estimated the projection of potential eligible participants for CBAS and MSSP programs statewide, by seven CHIS Regions (i.e., Antelope Valley, San Fernando Valley, San Gabriel Valley, Metro, West Los Angeles, South Los Angeles, East Los Angeles, South Bay), and within two California counties (Orange County and San Diego County).

The two regions with the highest potential CBAS population are the Other Southern California and Los Angeles regions with 63,000 and 60,800, respectively estimated as eligible in 2020. The projections for these two regions in Exhibit 3 show that by 2050 the estimated eligible in the Other Southern California

region are expected to increase by 19 percent, while the Los Angeles region is expected to experience a 2 percent decline. On the other hand, the MSSP estimated eligible population in Los Angeles is expected to increase by 6 percent from 2020 to 2050, while that of the Other Southern California region is expected to increase by 18 percent.

Between the two counties UCLA has analyzed, the CBAS eligible population in Orange County is expected to increase by 38 percent from 2020 to 2050, while that of San Diego County is expected to increase by 5 percent for the same period. Moreover, the MSSP eligible population in Orange County is expected to increase by 13 percent, while that of San Diego County is expected to show a 5 percent increase (Exhibit 15 and Exhibit 16).

Exhibit 15: Projections of Estimated Eligible for CBAS for the years 2020, 2025, 2030 and 2050 by CHIS regions, Orange County and San Diego County

	Estimated Eligible for CBAS			
	2020	2025	2030	2050
<b>California Total</b>	<b>243,400</b> (-/+ 90,800)	<b>244,300</b> (-/+ 87,100)	<b>248,600</b> (-/+ 89,300)	<b>261,900</b> (-/+ 97,600)
<b>CHIS Regions<sup>^</sup></b>				
Central Coast	7,700 (-/+ 4,100)	7,700 (-/+ 4,100)	7,800 (-/+ 4000)	7,500 (-/+ 3900)
Greater Bay Area	26,900 (-/+ 11,900)	28,300 (-/+ 13,600)	29,200 (-/+ 14,300)	30,800 (-/+ 14,600)
Los Angeles	66,600 (-/+19,400)	66,700 (-/+ 19,300)	66,800 (-/+19,300)	64,200 (-/+ 19,700)
Northern/ Sierra	11,900 (-/+ 3,800)	12,300 (-/+ 3,900)	12,500 (-/+ 4,000)	12,800 (-/+ 4,000)
Other Southern California	70,900 (-/+ 18,300)	72,700 (-/+ 18,800)	75,200 (-/+ 20,000)	81,700 (-/+ 25,000)
Sacramento Area	12,000 (-/+ 3,100)	12,500 (-/+ 3,300)	13,200 (-/+ 3,500)	14,900 (-/+ 3,900)
San Joaquin Valley	48,000 (-/+ 10,600)	49,000 (-/+ 10,800)	51,400 (-/+ 11,600)	58,300 (-/+13,200)
<b>Counties</b>				
Orange County	21,700 (-/+ 12,800)	23,100 (-/+ 14,700)	25,100 (-/+ 17,300)	29,900 (-/+ 24,900)
San Diego County	19,100 (-/+ 7,100)	19,500 (-/+7,400)	19,500 (-/+ 7000)	20,100 (-/+ 7,400)

Source: Estimates generated using 2020 California Health Interview Survey (CHIS) data and Department of Finance Population Projections.

Notes: CBAS is Community-Based Adult Services. <sup>^</sup>For a breakdown of regions by counties, please see Appendix A.

Exhibit 16: Projections of Estimated Eligible for MSSP for the years 2020, 2025, 2030 and 2050 by CHIS regions, Orange County and San Diego County

	Estimated Eligible for MSSP			
	2020	2025	2030	2050
<b>California Total</b>	<b>106,700</b> (-/+ 35,600)	<b>109,700</b> (-/+ 37,900)	<b>114,100</b> (-/+ 40,600)	<b>125,700</b> (-/+ 49,500)
<b>CHIS Regions<sup>^</sup></b>				
Central Coast	1,900 (-/+ 1,500)	2,000 (-/+ 1,500)	2,100 (-/+ 1,500)	2,100 (-/+ 1,500)
Greater Bay Area	19,700 (-/+ 11,400)	20,600 (-/+ 12,600)	21,600 (-/+ 13,100)	24,100 (-/+ 13,600)
Los Angeles	35,700 (-/+ 13,400)	36,200 (-/+ 13,900)	36,900 (-/+ 14,800)	38,000 (-/+ 18,900)
Northern/ Sierra	1,300 (-/+ 600)	1,400 (-/+ 700)	1,500 (-/+700)	1,700 (-/+ 800)
Other Southern California	30,000 (-/+ 14,800)	30,700 (-/+ 15,300)	32,000 (-/+ 16,400)	36,100 (-/+ 20,800)
Sacramento Area	5,000 (-/+ 2,100)	5,400 (-/+ 2,500)	6,000 (-/+ 2,800)	7,000 (-/+ 3,200)
San Joaquin Valley	13,600 (-/+ 5,400)	13,800 (-/+ 5,200)	14,300 (-/+ 5,500)	17,500 (-/+ 7,500)
<b>Counties</b>				
Orange County	15,100 (-/+ 13,600)	15,500 (-/+ 14,000)	16,100 (-/+ 14,700)	17,100 (-/+ 16,200)
San Diego County	9,200 (-/+ 4,200)	9,400 (-/+ 4,300)	9,700 (-/+ 4,500)	10,300 (-/+5,400)

Source: Estimates generated using 2020 California Health Interview Survey (CHIS) data and Department of Finance Population Projections.

Notes: MSSP is Multi-Purpose Senior Services Program. <sup>^</sup>For a breakdown of regions by counties, please see Appendix A.

## CONCLUSION

UCLA’s comparisons of the number of actual CBAS and MSSP clients served by geography with the estimated number who are eligible provides the California Department of Aging (CDA) information that can help to guide their planning and decision making regarding the funding of new programs and/or expansion of existing programs. In addition to identifying potential gaps between those currently served and those estimated as eligible to be served, these analyses also account for the demographic characteristics of those currently served, and highlight untapped opportunities to serve underrepresented population groups. UCLA has also provided projections of CBAS and MSSP estimated eligible population trends over the next 5, 10, and 30 years that, for the most part, indicate growth

trends. CDA can apply these projections to program planning efforts as they prepare to serve the future needs of these population groups.

There are some caveats that are important to note in the use of this report and these data. While UCLA was able to generate stable estimates at state, regional, select county, and select Los Angeles Service Planning Area (SPA) levels, the ability to generate additional and smaller local area estimates was limited by the small sample sizes of available data sources. While CDA can use the regional estimates to get a general idea of the potential demand for services at the county level, these metrics will not be as nuanced or precise as county-level data. It is not possible to apply regional estimates directly to get county-by-county estimates because the population distribution of the counties might be different from that of the region. However, the estimates of the three largest counties (Los Angeles, Orange, and San Diego) may be used to gain insight on the need for the MSSP and CBAS programs within those geographies.

It is also important to note that while this report provides information about the demand side for CBAS and MSSP services, it does not include information about the supply side of these two programs. In order to most effectively plan and address the need for services in any particular geographical area, CDA will need to pair these data with supply-side information (e.g., by mapping the demand with available supply to further identify gaps in available services by geographic area). To that end, UCLA is supporting CDA's efforts to request zip code level information about current users from the California Department of Health Care Services (DHCS), in order to identify additional gaps within more local geographic areas, and by certain demographic characteristics.

The identification of current and estimated eligible users of MSSP and CBAS, and the projected number of future potential MSSP and CBAS eligible individuals throughout the state can be used to plan, promote, and target these services to help prevent or delay more costly institutionalization.

**APPENDIX A: COUNTIES BY REGION AS CATEGORIZED BY CHIS\***

CNTY_CD	County	Region (CHIS)
27	Monterey	Central Coast
35	San Benito	Central Coast
40	San Luis Obispo	Central Coast
42	Santa Barbara	Central Coast
44	Santa Cruz	Central Coast
56	Ventura	Central Coast
01	Alameda	Greater Bay Area
07	Contra Costa	Greater Bay Area
21	Marin	Greater Bay Area
28	Napa	Greater Bay Area
38	San Francisco	Greater Bay Area
41	San Mateo	Greater Bay Area
43	Santa Clara	Greater Bay Area
48	Solano	Greater Bay Area
49	Sonoma	Greater Bay Area
19	Los Angeles	Los Angeles
02	Alpine	Northern/Sierra
03	Amador	Northern/Sierra
04	Butte	Northern/Sierra
05	Calaveras	Northern/Sierra
06	Colusa	Northern/Sierra
08	Del Norte	Northern/Sierra
11	Glenn	Northern/Sierra
12	Humboldt	Northern/Sierra
14	Inyo	Northern/Sierra
17	Lake	Northern/Sierra
18	Lassen	Northern/Sierra
22	Mariposa	Northern/Sierra
23	Mendocino	Northern/Sierra
25	Modoc	Northern/Sierra
26	Mono	Northern/Sierra
29	Nevada	Northern/Sierra
32	Plumas	Northern/Sierra
45	Shasta	Northern/Sierra
46	Sierra	Northern/Sierra
47	Siskiyou	Northern/Sierra
51	Sutter	Northern/Sierra
52	Tehama	Northern/Sierra
53	Trinity	Northern/Sierra
55	Tuolumne	Northern/Sierra
58	Yuba	Northern/Sierra
13	Imperial	Other Southern California
30	Orange	Other Southern California
33	Riverside	Other Southern California
36	San Bernardino	Other Southern California

37	San Diego	Other Southern California
09	El Dorado	Sacramento Area
31	Placer	Sacramento Area
34	Sacramento	Sacramento Area
57	Yolo	Sacramento Area
10	Fresno	San Joaquin Valley
15	Kern	San Joaquin Valley
16	Kings	San Joaquin Valley
20	Madera	San Joaquin Valley
24	Merced	San Joaquin Valley
39	San Joaquin	San Joaquin Valley
50	Stanislaus	San Joaquin Valley
54	Tulare	San Joaquin Valley

\*CHIS = California Health Interview Survey

## APPENDIX B: LANGUAGES AS CATEGORIZED IN MEDICAL DATA

LANG_CD	LANG_DESC	UCLA Grouping 1
2	Cantonese	Other
B	Mandarin	Other
C	Other Chinese Languages	Other
7	English	English
0	American Sign Language (ASL)	Other
6	Other Non-English	Other
8	No Valid Data Reported (MEDS generated)	Other
9	No response, client declined to state	Other
A	Other Sign Language	Other
K	Hebrew	Other
L	French	Other
M	Polish	Other
P	Portuguese	Other
Q	Italian	Other
S	Samoan	Other
3	Japanese	Other
4	Korean	Other
5	Tagalog	Other
D	Cambodian	Other
E	Armenian	Other
F	Ilacano	Other
G	Mien	Other
H	Hmong	Other
I	Lao	Other
J	Turkish	Other
N	Russian	Other
R	Arabic	Other
T	Thai	Other
U	Farsi	Other
V	Vietnamese	Other
1	Spanish	Spanish