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# Training for Health Care Jobs in California: Opportunities for Workers without a Four-Year Degree

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# Appendix A. Additional Tables and Figures

**TABLE A1**

Wage return regression results for community college health programs by length

Variables	Coefficients			
	Model 1 (Naïve)	Model 2	Model 3	Model 4
Enrolled		-0.383**	-0.352**	-0.334**
Postaward	0.944**	0.469**	0.514**	
Postaward*Associates				0.625**
Postaward* Long term certificate				0.388**
Postaward*Short term certificate				0.0606*
Constant	8.461**	7.158**	7.519**	7.504**
Year-Quarter FE		X	X	X
Student FE			X	X
Age FE		X	X	X
Observations	2,028,717	2,028,717	2,028,717	2,028,717
R-squared	0.16	0.268	0.515	0.519

SOURCE: Bohn et al. (2016a), Career Technical Education in Health: An Overview of Student Success at California’s Community Colleges

NOTE: Regressions results from student fixed effects model. Sample includes all students who earned a health credential between 2003 - 2009 with earnings covering the period from 2000 – 2014. Comparison group is CTE students who did not complete or CTE students in a similar programs to intending students.

**TABLE A2**

Wage return regression results for community college health programs by length and program

Program length	Coefficients		N (same program)
	Compared to all CTE intending students	Compared to students who entered same program	
Associates	0.625**	0.634**	1,170,448
Long-term Certificate	0.388**	0.330**	358,447
Short-term Certificate	0.0606*	0.119**	499,822
<b>Health Programs (top codes)</b>			
Medical Assisting (120800)	0.044	0.148**	69,199
Clinical Medical Assisting (120810)	0.0599	0.12	13,728
Administrative Medical Assisting (120820)	-0.0344	0.144	18,700
Respiratory Care/Therapy (121000)	0.598**	0.596**	70,039
Pharmacy Technology (122100)	0.0772	0.0956*	34,117
Radiologic Technology (122500)	0.701**	0.685**	89,493

Registered Nursing (123010)	0.709**	0.652**	839,457
Licensed Vocational Nursing (123020)	0.374**	0.337**	144,119
Certified Nurse Assistant (123030)	-0.0912	-0.0297	42,521
Psychiatric Technician (123900)	0.429**	0.337**	99,708
Dental Assistant (124010)	0.102**	0.249**	60,172
Dental Hygienist (124020)	0.611**	0.757**	44,376
Emergency Medical Services (125000)	0.0855	0.0603	141,174
Community Health Worker (126100)	-0.301**		

SOURCE: Bohn et al. (2016a), Career Technical Education in Health: An Overview of Student Success at California’s Community Colleges

NOTE: Regressions results from student fixed effects model. Sample includes all students who earned a health credential between 2003 - 2009 with earnings covering the period from 2000 – 2014. Comparison group is CTE students who did not complete or CTE students in a similar programs to intending students.

**FIGURE A1**

Distribution of jobs across health care sectors varies considerably by occupation



SOURCE: Occupational and Employment Wage Statistics (OEWS) for California, 2024

NOTE: Distribution of jobs by occupation and industry are grouped by typical training program length for each occupation (see report for details). Industries are defined by 4-digit level NAICS codes.

**TABLE A3**

Median hourly wages vary for some occupations across different industry settings

Occupation	Median wage	Primary industry	Share primary industry	Median wage, primary industry
Registered Nurses	\$67.47	Hospital	64%	\$76.01
Dental Hygienists	\$58.21	Outpatient offices	99%	\$58.21
Respiratory Therapists	\$49.10	Hospital	85%	\$50.15
Radiologic Techs	\$51.76	Hospital	46%	\$53.34
LVN	\$37.10	Long-term care	51%	\$36.21
Psych Techs	\$29.63	Hospital	59%	\$27.85
Alcohol/drug counselors	\$21.29	Other health/social	37%	\$27.45
Community Health Workers	\$27.67	Outpatient offices	40%	\$28.19
Dental Assistants	\$23.89	Outpatient offices	97%	\$23.45
Medical Assistants	\$23.51	Outpatient offices	82%	\$24.31
Nursing Assistants	\$22.32	Long-term care	62%	\$21.93
EMT	\$21.96	Other	72%	\$20.84
Pharmacy Technicians	\$23.86	Other	72%	\$23.11

SOURCE: EDD OEWS for California, 2024

NOTE: Industries are defined by 4-digit NAICS codes. "Primary industry" indicates the industry that employs the largest share of that occupation. For example, 64% of registered nurses in California are employed in hospital settings and 99% of dental hygienists are employed in outpatient offices.

**TABLE A4**

Statewide median hourly wage levels by occupation and industry

Occupation	Hospitals	Outpatient Offices	Long-term Services and Supports	Other Health/Social Assistance Industries	Other
Registered Nurses	\$76.01	\$77.10	\$54.42	\$50.12	\$62.07
Respiratory Therapists	50.15	63.42	36.30	37.39	40.77
Dental Hygienist		58.21			55.37
Rad Tech	53.34	57.97		42.12	46.13
Licensed Vocational Nurses	36.61	40.08	36.21	32.35	37.12
Psychiatric Tech	27.85	21.23	42.09		37.71
Alcohol/drug counselor		29.20	20.85	21.22	40.87
Community Health Workers	34.63	28.18	25.18	24.82	28.19
EMT	24.08		21.16	20.84	23.88

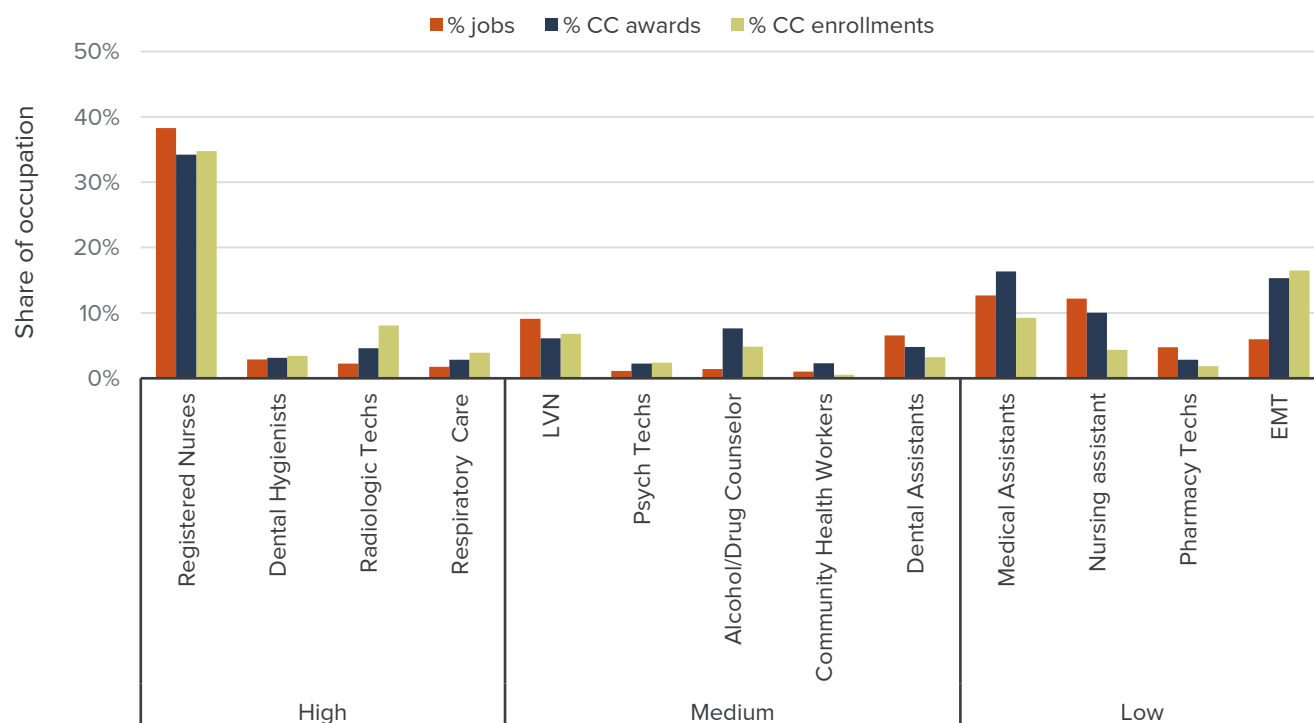
Nursing assistant	23.41	25.94	21.93	26.67
Dental assistant	30.26	23.45		30.91
Medical assistant	29.97	24.31	23.84	22.31
Pharmacy Tech	35.52	38.28	29.47	23.11

SOURCE: EDD OEWS for California, 2024

NOTE: Industries are defined by 4-digit NAICS codes.

### FIGURE A2

Distribution of jobs, community college health awards, and FTE enrollments across occupations



SOURCE: OEWS for California, 2024; CCCC Datamart

NOTE: Occupations are listed on horizontal axis and are grouped by typical training program length (see text). Orange bars (% jobs) are based on OEWS employment statistics for 2024 and show the percentage of jobs in the given occupations relative to the total of all shown here. % CC awards are for the 2023-24 school year by program based 6-digit top codes and % CC enrollments are FTE enrollments in the same year.

**TABLE A5**

Median costs and ranges of health training across different institutional settings

	Registered Nursing, Associate Degree	Registered Nursing, Bachelor Degree	Licensed Vocational Nursing	Medical Assistant	Dental Assistant
Total Costs					
Public	\$6,800	\$42,000	\$4,700		
Private, nonprofit	n/a	\$101,000	n/a	n/a	n/a
Private, for-profit	\$70,000	\$139,000	\$34,000	\$17,400	\$18,100

SOURCE: California Bureau of Registered Nursing (BRN); Websites of private, for-profit institutions operating in California that offer medical and dental assisting programs.

NOTES: Costs for nursing programs represent averages of total program costs as reported by the BRN. Costs for medical and dental assistant programs are also averages based on authors' analysis of information on college websites.

**TABLE A6**

Health occupations in these pathways are expected to grow much faster than the rest of the workforce

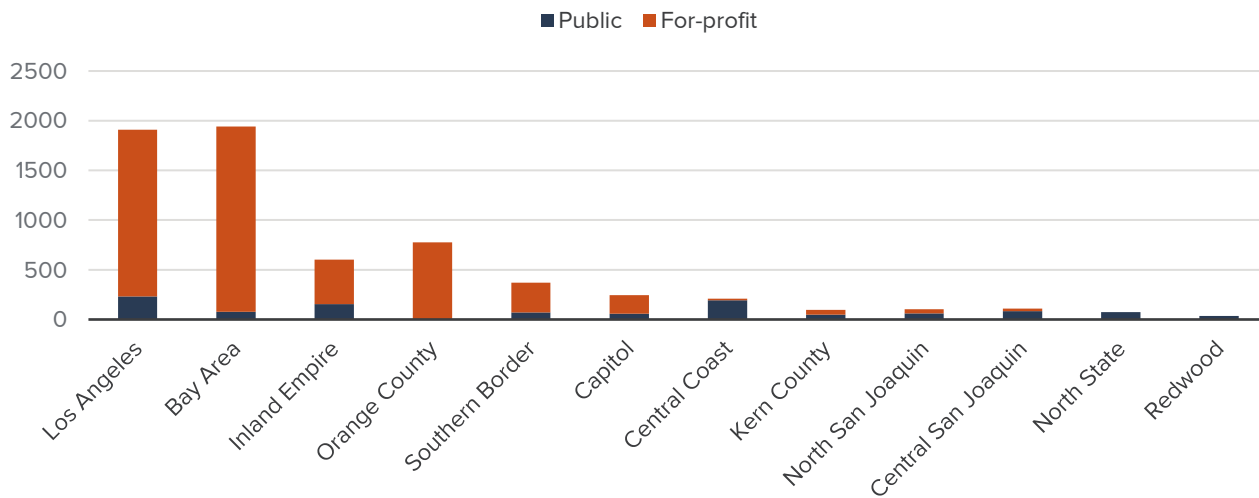
Occupation	Projected growth rates 2023 - 2033	Avg. Annual Job Openings	Adequacy (Supply:Demand Ratio)
Registered Nurses	10.5%	20,779	87%
Dental Hygienists	8.3%	1,726	93%
Respiratory Therapists	20.8%	1,253	122%
Radiologic Techs	14.4%	1,342	
Licensed Vocational Nurses	8.3%	7,037	97%
Psychiatric Technicians	14.8%	902	
Substance abuse counselors	19.5%	7,256	79%
Paramedics	10.3%	337	
Medical Assistants	18.3%	17,200	
Nursing Assistants	8.4%	15,631	
Dental Assistants	7.7%	7,916	
Emergency Medical Technicians	12.6%	1,654	125%
Pharmacy Technicians	8.6%	4,729	87%

SOURCE: EDD Long-term occupation projections; HRSA Workforce Projections

NOTE: Average annual job openings include new jobs plus job openings due to labor market exits and transitions to different jobs for the period 2022 – 2032 divided by 10. Adequacy ratio is based on demand and supply projections developed by HRSA for each year and averaged for years 2022 – 2032. For several occupations, the HRSA estimates do not provide supply and demand estimates and so adequacy ratios are not available.

**FIGURE A3**

LVN credentials completed by type of institution



SOURCE: IPEDS 2023

NOTE: Annual completions includes awards conferred by public and for-profit colleges located in California.

**FIGURE A4**

Most Health occupations pay more than most regional median wage levels

Ratio of health occupation wage to median regional wage



Occupation	Bay Area	Capitol	Central Coast	Central San Joaquin	Inland Empire	Kern County	LA County	North San Joaquin	North State	Orange County	Sierra	Southern Border
Registered Nurses	2.9	2.9	2.8	2.7	2.7	2.7	2.5	3.0	2.7	2.5	2.7	2.5
Dental Hygienists	2.2	2.3	2.3	2.2	2.3	2.0	2.0	2.6	2.4	2.0	2.4	2.3
Radiologic Technicians	2.3	2.4	2.1	2.2	2.1	1.9	1.9	2.3	2.1	1.9	2.1	1.9
Respiratory Therapists	2.1	2.4	2.1	1.8	2.0	2.1	1.9	2.1	2.3	1.9	2.1	2.0
Licensed Vocational Nurses	1.4	1.5	1.5	1.6	1.6	1.6	1.4	1.5	1.5	1.4	1.5	1.5
Psychiatric Technicians	1.2	0.8	1.1	1.7	1.5		0.9	1.9	1.5	0.8	1.7	1.1
SUD counselors	1.1	1.2	1.2	1.5	1.3	1.3	1.1	1.3	1.2	1.0	1.2	1.2
Community Health Workers	1.1	1.1	1.1	1.2	1.0	1.1	1.0	1.0	1.0	1.1	1.0	1.0
Dental Assistants	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.1	0.9	1.2	1.0
Medical Assistants	1.0	1.0	0.9	1.0	0.9	1.0	0.9	0.9	1.0	0.9	1.0	0.9
Nursing Assistants	0.8	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.9
Pharmacy Technicians	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0	0.9	1.0	1.0
EMT	0.8	0.9	0.9	0.8	0.9	1.0	0.8	0.9	1.0	0.8	0.9	0.8

SOURCE: EDD OEWS May 2024.

NOTE: Ratios in figure are calculated by dividing the median wage for the health occupation in the region by the median wage of all occupations in the region. For regions that contain multiple local labor market areas, median wages for health occupations and all occupations are population weighted averages.

# Appendix B. Focus Group Interview Information and Protocols

We recruited two main groups of participants for our focus groups: 1) directors and coordinators of health training programs at nonprofit workforce agencies and 2) directors and counselors at community college career centers. We invited via email participants from 7 nonprofit workforce agencies, primarily located in the Bay Area and Southern California regions. For the community colleges, we emailed more than 70 different people affiliated with career centers and/or career counseling services based on information provided on college websites. In total, we spoke with 14 people across 2 focus groups and a few one-on-one interviews. Nine participants were career center directors or counselors from community colleges including Napa, Madera, Skyline, Butte, and Ventura colleges. Five were program directors and coordinators for health training programs at nonprofit workforce agencies including JVS, Opportunity Junction, and Unite LA.

## Informed Consent

### PPIC Research Project on Barriers to Health Care Training Pathways

Thank you for agreeing to participate in our research project examining career education and training pathways for health care jobs that require some postsecondary training, but less than a bachelor's degree. The focus group will be a 60-minute facilitated discussion over Zoom and include representatives from health training providers (primarily community colleges and workforce development nonprofits). We will propose general topics and questions (examples provided below) and let the conversation develop organically.

If it is acceptable to you, **we would like to record the workshops** for our internal note-taking purposes so we can more fully engage during the discussion itself. We would not keep the recording beyond the life of this project. **Please let us know if you have any accessibility needs** that we can plan for to ensure you can engage fully in the discussion.

The Gates Foundation and Tipping Point Foundation are funding this research and we anticipate publishing a report on our findings in October 2025. The audience for this report will be state and local policymakers, workforce and education training providers, and other stakeholder groups. **The report will include a list of organizations that participated in the focus groups in an appendix, but not individual's names. We may include direct quotes from participants but will provide those for your review before publication and you will be able to revise and/or decline their inclusion.** The second page of this document provides information about your rights as a participant in this project.

The following broad topics will be discussed:

- (1) Opportunities and barriers to connecting people to high-value health training programs and pathways
- (2) Services and supports to help people successfully complete health training pathways
- (3) Strategies and assistance to link people to health care jobs and careers

Examples of specific questions include:

- What strategies does your organization use to engage/connect potential students to available health care training programs? Are there opportunities for stacking multiple credentials that can lead to higher wage jobs?
- What are the greatest barriers to students pursuing high-value health care training pathways?
- How do you think about/define 'high-value' training and how is that information conveyed to potential students?
- Based on your experience, what are the most effective supports and services to help people successfully complete health training programs? Stackable pathways?
- Does your organization help with placing people who complete training in jobs, and if so, what are the opportunities and challenges to connecting people to health care jobs that are a good fit for them?

Please contact the project research staff if you have any questions or concerns.

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## Informed Consent

The Public Policy Institute of California (PPIC), a nonprofit research organization, is conducting a study examining health care education and training pathways. A component of the research involves conducting focus groups with representatives from education and training providers to better understand opportunities and barriers to accessing and completing these programs. We are requesting your participation in this study by taking part in a 75-minute facilitated discussion over Zoom. The information you provide will be incorporated into a PPIC report that will be publicly available on our website.

*The education and training provider organizations (e.g., community college and nonprofit agencies) will be included in the report appendix, so the information you provide will not be confidential. Your participation in the study is completely voluntary. If you do not wish to participate, we may attempt to contact another person within your organization to participate. If you do participate, you can stop at any time, you do not have to answer any questions for any reason, and you should not feel obligated to discuss any topic with which you are not comfortable.*

## Interview Protocol

### Focus Group Protocol

#### **Brief overview of study and informed consent document (sent prior to workshop) – 5 minutes**

- Main goal of our research project is to analyze labor market opportunities and career education training programs for health care jobs that require some postsecondary training but less than a bachelor's degree.
  - Funded by the Gates Foundation and Tipping Point Community.
  - Conducting focus groups with community college staff and nonprofit, workforce development agencies to better understand opportunities and challenges to connecting Californians with health training pathways and jobs.

- Go over informed consent document.
  - Ask if okay to record – only for notetaking. START RECORDING
  - How the information will be used:
    - Summarize themes to help situate and provide context to quantitative analysis.
    - We may incorporate direct quotes into the report but if we do – we will reach out and confirm you feel it is accurate and are comfortable with it in the report.
    - Quotes would be attributed to broad job titles like “community college career counselor” or “workforce nonprofit program coordinator”. No names will be used, but the community colleges/nonprofit organizations that participated will appear in an appendix so information you provide is not confidential.
    - You don’t have to answer anything you are not comfortable having become public information.
- Any questions/concerns?

### **Introductions (5 minutes)**

Name, organization, position, and a few of/the largest health training programs offered by your college/organization.

[Technically we should know this for the community colleges and I’m sure get it from the nonprofit workforce development agencies beforehand]

### **Section 1: Connecting People to Health Training Programs (20 minutes)**

- Based on your experience, what are the most important factors people/students take into consideration when choosing a particular health training program and choosing health over other fields/training?

#### **PROBE:**

- Interests, difficulty level/ability, time it takes to finish
- Other obligations like family and/or work, costs, geographic accessibility
- Economic returns: how important are labor market considerations in choosing a program, like the number of job opportunities or the potential wages?
- IF PARTICIPANTS WITH SELECTIVE PROGRAMS (e.g. RN): admission requirements, capacity constraints, waiting lists
  - PROBE: How often do pre-requisites, other constraints/barriers stop people from pursuing programs? How long on average do you feel people take to prep for these programs? Or to wait if space isn’t available to enroll?
- What types of information do you provide to help people select the program most aligned with their goals – or the ‘best fit’ for their needs?

#### **PROBE**

- How do students initially find out about available health programs (marketing channels, referrals, etc.)?
- Do you do anything to steer students into particular programs, where local need or opportunity (e.g. in job openings or potential wages) is greatest in your view?
- Are there programs that you don’t offer because of the lack of local need or opportunity?
- Are there programs that you don’t offer but would like to? What are the limitations?

- Does it vary across student groups like older students?
  - How do you assess or measure the "fit" between students and programs? Selective vs. non-selective programs.
- Do you offer stackable credential pathways – where people can complete a shorter-term program (e.g. CNA), enter the labor market and gain work experience, and then return to get another credential (e.g. LVN) to advance along a career and improve their wages or salary?

### **Section 2: Supporting People to Complete Programs (20 minutes)**

- What kinds of support and services are available to help people/students successfully complete health programs? What are the most important supports in your experience?

#### **PROBE: :**

- Academic supports: Academic counseling, Tutoring, Laptop loan/gift
  - Financial supports: Financial aid (probe on types), transportation assistance, housing assistance, nutrition assistance, work study
  - Social and health supports: Childcare, health services, mental health/SUD counseling, peer support
  - Others?
- Based on your experience, what is the main reason people drop out of programs and do not finish?

#### **PROBE:**

- Economic reasons: Got a job, needed to get a job
  - Family reasons: Caregiving responsibilities,
  - Academic reasons: Can't manage the workload, material is too difficult, clinical placements are too difficult
  - Personal reasons: Don't like it, not a good fit – maybe clinical placement helps figure that out?
  - How/do these differ for non-selective and selective programs? Across student groups e.g. older, low-income, first-gen?
- Based on your experience, how often do people plan to return and complete additional training along a career pathway?
    - What are the most common stackable programs?
    - The most successful in terms of completion or improvements to job opportunities/placements?

### **Section 3: Linking people to health care jobs and career pathways (20 minutes)**

- If licensing is required for the job, do you help people to get their license?
  - Based on your experience, how often do people who complete training not get licensed? Reasons why?
  - Barriers: Costs of licensing, licensing tests English only
- What are the most successful strategies to connect students with health care jobs? Of those, what are the student responsibilities vs what does the program do to assist?

- Do you have specific employers you work with to help people find jobs after finishing training? If so, how often do people who complete programs find employment with them?
  - Selective programs: Focus on clinical placements
    - Challenges: Rules on clinical placements required for training programs to not be able to be earn and learn/paid apprenticeship type programs.
    - Making sure students have access to latest technology/techniques

**Wrap-up (5 minutes)**

*[IF WE HAVE TIME/NEED ANOTHER QUESTION: If you could wave a magic wand and money was no object, what would be the one thing you would do to help more people access and complete training to connect with health care careers?]*

- Before we finish, is there anything we haven't talked about yet that you feel is important for us to understand about how people select different health training or how more people could successfully complete training and connect to health care jobs?

Thank you for your time and insights! We will be in touch if we have any questions or would like to include a direct quote from you in the report and will add your name to the distribution list when the report is released.

## Appendix C. Geographic Regions

We use the regional definitions from the California Jobs First initiative and blueprint. The following counties comprise their own separate regions: Los Angeles, Orange, and Kern. The other regions are made up of county groups as detailed below:

- North State: Butte, Glenn, Lassen, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama, Trinity counties. Redwood region: Del Norte, Humboldt, Lake and Mendocino counties.
- Capitol: Colusa, El Dorado, Placer, Nevada, Sacramento, Sutter, Yolo, and Yuba counties.
- Bay Area: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties.
- North San Joaquin: Merced and San Joaquin counties. Central San Joaquin: Fresno, Kings, Madera, Tulare.
- Central Coast: San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Ventura.
- Inland Empire: Riverside and San Bernardino counties.
- Southern Border: Imperial and San Diego counties.



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