

Group S Milestone 6

Phuong Tseng and Carri Beshears

2022-12-11

Problem Statement:

Access to Quality healthcare in rural areas of California continues to be a focus of the California Department of Public Health Office of Health Equity (OHE). Over the past 5 years the Department of Healthcare Access and Information (HCAI) has provided funding however this need continues to grow and great greater challenges for some of our communities. New policies have increased funding availability to assist in improving healthcare facilities to work with our rural populations.

In order to ensure that this increase of funding is used to help those populations in most need, OHE is tasked to evaluate all California counties based on the following criteria: 1. low population per square mile 2. high median age 3. high proportion of renters vs homeowners

Using this information, OHE has recommended which counties would be best served by development funding partnerships.

Methods:

All California counties were evaluated objectively through the analysis of three primary data sources:

1. California County census demographics data: Information found here allowed counties to be ranked based on how well they meet the criteria outlined for this project, low population per square mile, high median age, and high proportion of renters. Current census data was used for analysis.
2. Mortality surveillance: Information about mortality for chronic health conditions for each county was added to provide a better picture of healthcare use and access. Total mortality counts from 2020 were used for analysis.
3. HCAI funding: Current funding and open projects for each county is also used to help evaluate where additional funding should be allocated. Projects currently funded and “in closure” were used for analysis.

California census data was used as the base data set for this evaluation. A new variable was added to show the proportion of renters to homeowners by taking the number of renter occupied houses over the total occupied houses in each county. Mortality data was added by separating data from 2020, giving a total count for that year for each location. Finally, HCAI funding data was sorted to identify projects that are currently “in closure” for each county, along with the monetary amount that has already been used for currently projects, allowing this to be added to the original data set as well.

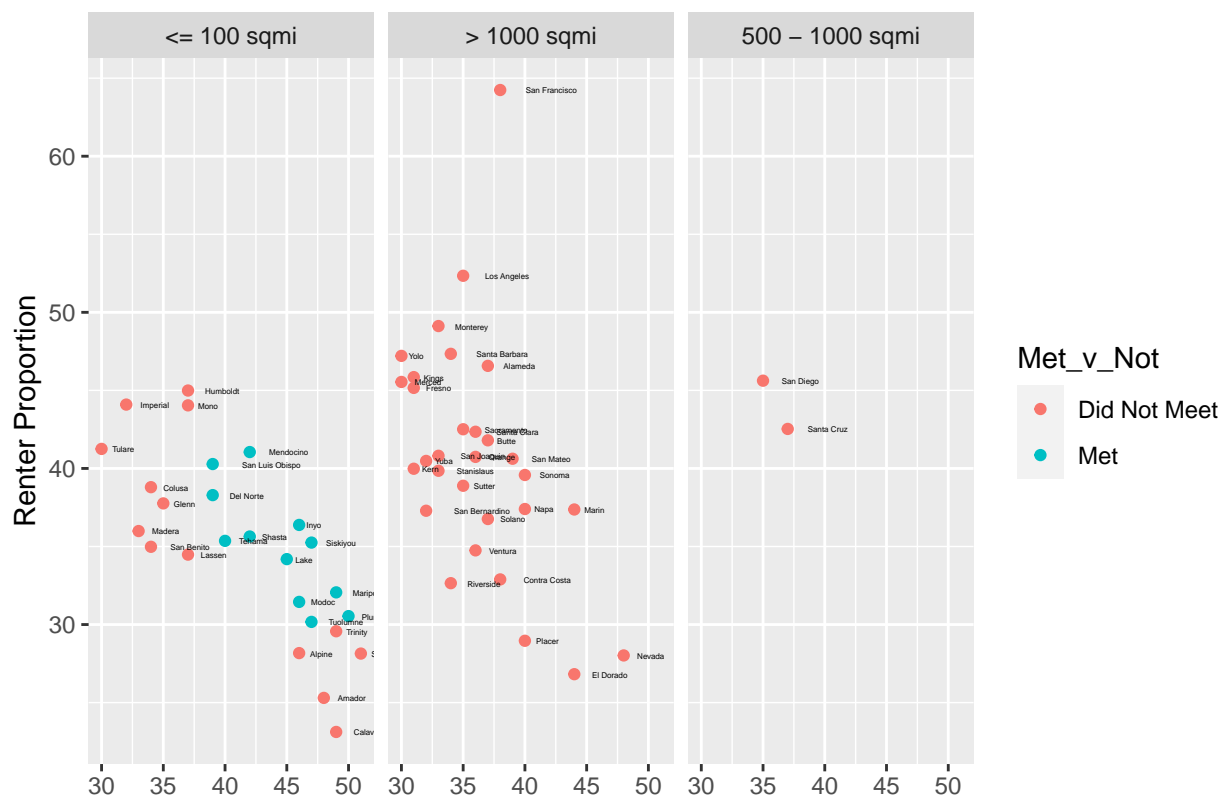
From this new single set of information, OHE is able to analyze each county independently to be able to make recommendations of which areas would best fit the new funding partnership program.

Table 1: California counties by current census

County Name	Pop/mi ²	Median Age	Renter Proportion	Mortality Rate	Total Costs of OSHPD Projects
Alameda	2062.40	36.6	46.57	0.75	\$15,250,836.10
Alpine	1.54	46.4	28.17	NA	0
Amador	63.29	48.2	25.30	1.10	0
Butte	132.55	37.1	41.80	1.09	0
Calaveras	44.58	49.1	23.12	0.85	0
Colusa	18.83	33.5	38.80	0.55	0
Contra Costa	1405.33	38.4	32.89	0.80	\$7,837,754.00
Del Norte	28.30	39.0	38.29	1.01	0
El Dorado	102.16	43.5	26.82	0.81	\$30,961.00
Fresno	157.17	30.7	45.16	0.96	\$5,230,681.00
Glenn	21.49	35.3	37.76	0.73	0
Humboldt	38.06	37.3	44.99	0.96	0
Imperial	39.74	32.0	44.09	0.83	0
Inyo	1.82	45.5	36.38	1.06	0
Kern	104.28	30.7	39.98	0.86	\$2,000,187.99
Kings	111.43	31.1	45.85	0.68	0
Lake	49.08	45.0	34.19	1.01	0
Lassen	7.42	37.0	34.48	0.53	0
Los Angeles	2423.26	34.8	52.34	0.84	\$129,179,056.02
Madera	71.07	33.1	35.99	0.70	\$139,488.40
Marin	486.10	44.5	37.37	0.83	\$5,788,177.72
Mariposa	12.61	49.2	32.06	0.69	0
Mendocino	25.08	41.6	41.05	1.03	\$34,803.00
Merced	129.90	29.6	45.54	0.67	\$167,026.00
Modoc	2.33	46.0	31.45	0.89	0
Mono	4.60	37.2	44.04	0.29	0
Monterey	126.86	33.0	49.12	0.70	\$10,657,237.90
Napa	172.31	39.7	37.40	0.94	\$2,743,185.00
Nevada	102.56	47.5	28.02	1.06	\$625,345.00
Orange	3822.42	36.2	40.74	0.80	\$64,278,886.66
Placer	237.08	40.3	28.96	1.21	\$3,985,582.15
Plumas	7.65	49.5	30.54	0.90	0
Riverside	305.04	33.7	32.65	0.94	\$268,651,237.29
Sacramento	1441.22	34.8	42.51	0.98	\$12,724,854.30
San Benito	40.63	34.3	34.98	0.56	0
San Bernardino	102.56	31.7	37.29	0.96	\$55,980,818.58
San Diego	740.58	34.7	45.62	0.82	\$58,237,267.71
San Francisco	17398.35	38.5	64.24	0.81	\$17,012,804.99
San Joaquin	482.64	32.7	40.81	0.97	0
San Luis Obispo	81.82	39.4	40.28	0.88	\$89,105.00
San Mateo	1591.22	39.2	40.62	0.68	\$4,254,277.00
Santa Barbara	154.04	33.7	47.34	0.84	\$1,709,878.00
Santa Clara	1401.07	36.2	42.35	0.68	\$21,401,921.35
Santa Cruz	587.52	36.8	42.53	0.70	\$232,403.00
Shasta	46.48	41.8	35.64	1.50	\$505,710.00
Sierra	3.35	51.0	28.14	NA	0
Siskiyou	7.12	46.8	35.25	1.18	0
Solano	470.01	36.9	36.76	0.88	0

County Name	Pop/mi ²	Median Age	Renter Proportion	Mortality Rate	Total Costs of OSHPD Projects
Sonoma	306.32	39.8	39.58	0.92	\$1,084,897.00
Stanislaus	342.54	32.9	39.85	1.19	\$3,039,277.00
Sutter	157.13	34.6	38.89	0.65	0
Tehama	21.52	39.5	35.36	0.93	0
Trinity	4.38	49.2	29.57	0.76	0
Tulare	92.74	29.6	41.25	0.81	0
Tuolumne	24.30	47.1	30.17	1.27	0
Ventura	444.79	36.2	34.75	0.78	\$17,037,565.00
Yolo	199.66	30.5	47.21	0.64	0
Yuba	113.15	32.2	40.48	1.13	0

Counties that met the 3 criteria



OHE is able to analyze each county independently in this visualization to be able to make recommendations of which areas would best fit the new funding partnership program.

This visualization displays counties that met the 3 criteria: low population density, high median age > 37 years old (x-axis), and renter proportion >= 30% (y-axis). The counties that met the criteria are represented as green dots whereas the counties that did not meet these criteria are red dots. Therefore, Tuolumne, Siskiyou, Alpine, Modoc, Inyo, Lake, Mendocino, Shasta, Tehama, Del No, San Luis Obispo are counties that met these tree criteria, which make these areas a great fit for the new funding opportunities.