

Informational Hearing

Senate Select Committee on the Social Determinants of Children’s Well-Being

Senator Holly J. Mitchell, Chair

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10:00 a.m., Fresno City Hall, Council Chambers, 2nd Floor
2600 Fresno St., Fresno, CA

The Healthcare Workforce Shortage and Social Determinants in the Central Valley

BACKGROUND BRIEF

Social Determinants

Social Determinants impact children’s well-being in the Central Valley. The United States of America spends an excess of \$3.5 trillion on health care spending¹. At the same time research studies are finding that the “U.S. spending on social services made up a relatively small share of the economy relative to other countries” and that “despite spending more on health care, Americans had poor health outcomes, including shorter life expectancy and greater prevalence of chronic conditions.”² Research studies are also finding the importance of the social determinants of health on the population health across a life span. Social determinants of health, as defined by the World Health Organization, are the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power, and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities – the unfair and avoidable differences in health status seen within and between counties.³ The broad definition of social determinants indicates that any number of things may affect the health of children, youth, and entire communities. According to

¹ Centers for Medicare and Medicaid Services. Data from the National Health Expenditures Accounts (NHEA) is available at <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nationalhealthaccountshistorical.html>.

² U.S. Health Care from a Global Perspective: Spending, Use of Services, Prices, and Health in 13 Countries. https://www.commonwealthfund.org/sites/default/files/documents/media_files_publications_issue_brief_2015_oct_1819_squires_us_hlt_care_global_perspective_oecd_intl_brief_v3.pdf

³ World Health Organization. “About social determinants of health.” https://www.who.int/social_determinants/sdh_definition/en/

The Henry J. Kaiser Family Foundation and the Satcher Health Leadership Institute – Morehouse School of Medicine: “Based on a meta-analysis of nearly 50 studies, researchers found that social factors, including education, racial segregation, social supports, and poverty accounted for over a third of total deaths in the United States in a year.⁴

Academics, doctors, and activists have found social determinants in the Central Valley to be inclusive of the aforementioned while highlighting the following: family and home, peer group, neighborhood influences, poverty and lack of resources, land use, pollution, education, housing, civic life opportunity, smoking, hypertension, WIC services, race/ethnicity, health insurance type, and obesity. These factors all play a role in children’s health status and well-being.

Geography, Weather Conditions, and Population of the Central Valley

The weather in the Central Valley is primarily driven by its geography and plays in role in population size and perceived desirability as a place to live, work, and play. The Central Valley of California is a 20,000-square-mile region surrounded by the Cascade Range to the north, the Sierra Nevada to the east, the Tehachapi Mountains to the south, and the Coast Ranges and San Francisco Bay to the west. It is about 40 to 60 miles in width, extends 450 miles in length, and covers 11 percent of the state’s territory. The Valley runs south from San Joaquin County through Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and Kern counties. The Central Valley includes three regions: 1) Sacramento Metro, 2) North Sacramento Valley, and 3) the San Joaquin Valley. Much of the focus of our hearing will be the San Joaquin Valley. The San Joaquin Valley alone consists of eight counties: Kern, Fresno, Merced, Tulare, Madera, Stanislaus, San Joaquin, and Kings. Major cities in the Central Valley include Redding, Chico, Sacramento, Stockton, Modesto, Fresno, and Bakersfield. Total population in the Valley is 6.5 million with the major population in the following metropolitan cities:

- Sacramento (2,527,000)
- Fresno (930,000)
- Bakersfield (839,000)
- Stockton (696,000)
- Modesto (519,000)

⁴ The Henry J. Kaiser Family Foundation and The Satcher Health Leadership Institute – Morehouse School of Medicine citing to Sandro Galea et al., “Estimated Deaths Attributable to Social Factors in the United States” American Journal of Public Health 101, no. 8 (August 2011):1456–1465, doi:10.2105/AJPH.2010.300086. <https://www.issuelab.org/resources/22899/22899.pdf>

In the summer, the Valley is very hot and dry, with heatwaves reaching as high as 115 degrees Fahrenheit.⁵ In the winter, it is cool and damp. Rain comes from mid-autumn to mid-spring. Tule fog, the thick ground fog that settles along the length of the Central Valley, occurs from November 1 to March 31.⁶

Despite these challenges, the people of the San Joaquin Valley continue to want more for themselves, as others before them.

Race/Ethnicity

Race and Ethnicity are determinant factors impacting where people live, homeownership, income, and education just to name a few. Since the Spanish and English arrived in the Americas and encountered Native Americans, the country has operated in racialized terms. In the Central Valley, to the present day, being of a certain ethnic origin or color has meaning and, sometimes, experiences attached to it. Data centered on race and ethnicity can help us understand all sorts of things, including social constructs, migration patterns, economic mobility, educational attainment, health outcomes, and the value that we, as people operating under various premises, attach to other people of particular skin tones and background. In short, race and ethnicity are social determinants, affecting both what we think, and the well-being of the children in our state.

By numerous written accounts, race and ethnicity in the Central Valley matter. Latinos make the majority of 14 counties in the Valley, including: Colusa, Fresno, Glenn, Imperial, Kern, Kings, Madera, Merced, Monterey, Napa, San Benito, Santa Cruz, and Tulare. Last year, census data showed that the estimated population of Fresno County was 994,000. Twenty-eight percent of the County was under 18 years old. Those who identified as Hispanic or Latino made up 54 percent of the population, 30 percent self-identified as white alone (not Hispanic or Latino), 11 self-identified as Asian, 6 percent identified as Black or African American alone, and 3 percent identified as being American Indian and Alaskan Native Alone. Twenty-one percent of the county identified as being foreign-born and 44 percent spoke another language - other than English - at home.⁷

⁵ Under such intense heat conditions, life in the Valley can be unbearable for low wage workers, families, children and youth who work in the agriculturally rich region. Farmworkers and those in other industries often work in extreme weather while also enduring the poor air quality without air conditioning.

⁶ Climate change is a force to be reckoned with everywhere, including in the Valley. Increased heat impacts health, air quality, the drying of wells, and the availability of some types of work, while increased precipitation could lead to flooding.

⁷ <https://www.census.gov/quickfacts/fact/table/fresnocountycalifornia/PST045218>

Below are some facts around race and ethnicity that perhaps, are helpful as indicators of where the power, resources, and inequalities persist for the people and systems of Fresno County:

- 13 percent of whites live below the federal poverty line in comparison to 28 percent for Asians, 35 percent for Latinos, 40 percent for Blacks.
- The median income is 60,000 per white families, \$51,000 for Asian families, \$36,000 for Latino families, and \$27,000 for Black families.⁸
- The employment rate for white and Latino residents are about the same at 53 percent, followed by Asians at 50 percent, and finally for Black residents at 42 percent.
- Homeownership data shows that whites have the highest rate at 70 percent, followed by Asians at 53 percent, Latinos at 42 percent, and African-Americans at about 30 percent.⁹
- High school graduation rates for Fresno show that Asians have the highest graduation rate at 90 percent, followed by whites at 86 percent, Latinos at 80 percent, and African-Americans at 72 percent.

Race and ethnicity also play a factor in children's health outcomes. First, children under the age of 15 in the San Joaquin Valley are more likely to be hospitalized for preventable illnesses than children from other regions in California at a rate of 54 per 10,000 as compared to 43 per 10,000 elsewhere.¹⁰ Second, when race is taken into consideration and where data exist, they show significant differences. Out of 1,000 children, 103 African American children have preventable emergency department visits as compared to 68 and 69 for Whites and Hispanics, and 26 for Asians. African American children are either the highest or the second-highest subgroup at risk, especially for infant mortality, for which the rate is almost three times as high as that of the white group (15 deaths per 1,000 live births in comparison to 5 deaths for 1,000 live births).¹¹ Interestingly, the five causes of pregnancy-related deaths such as preeclampsia, eclampsia, abruptio placentae, placenta previa, and postpartum hemorrhaging are not higher in Black women than white women.¹² Dr. John Capitman, director of the Central Valley Health Policy Institute (the Institute), said the problem is racism and poverty, and public systems that do not mediate those impacts on health.

⁸ In contrast to Fresno County and its significant racial disparities, counties like Merced and Tulare have low racial disparity.

⁹ <https://www.fresnobee.com/article186907188.html>

¹⁰ Some of the common risk factors contributing to adverse health outcomes are drug use, poverty and homelessness.

¹¹ It is worth noting that Fresno County's Black infant mortality rate decreased from 37 per 1,000 in 1992 to 11 per 1,000 in 2001, then increased to 15 per 1,000 in 2007, and then to 27 per 1,000 in 2014.

¹² <https://www.theatlantic.com/health/archive/2018/08/pre-term-birth-race/567862/>. Fresno's adverse birth outcome is such a problem that it is one of six regions in the world to be included in the Preterm Birth Initiative, a 10-year project with \$100 million in investment backed by the University of California at San Francisco and supported by philanthropy.

Researchers are finding that bias exists in the medical profession - throughout the nation. Studies show that medical professionals ascribed different thresholds for pain when treating minorities and whites. The Journal of American Medical Association of Pediatrics conducted a study that showed in appendicitis cases, Black children are less likely than white children to receive pain medication. Also, a national survey found that Black and Hispanic women were more likely to meet their delivery doctor for the very first time during labored compared to white women. The same survey found that one in five Black and Hispanic women reported poor treatment from hospital staff because of their race, ethnicity, cultural background or language.¹³

The Institute developed model estimates to evaluate the impact of race and poverty on preventable pediatric illness - to assess savings that might be had if all children in the San Joaquin Valley had emergency department visits at the rate of communities with low poverty, regardless of race. They estimated that \$9.2 million would be saved with a 36 percent reduction in visits. In the model using white children emergency room visits as the benchmark, the estimated saving was \$13.8 million a year, or a 54 percent reduction in cost. Finally, they estimated that \$19.2 million would be saved and emergency room visits would be reduced 76 percent if white children in low poverty communities were used as the benchmark.

Findings from the Institute indicate that children who are non-white and underserved are likely experiencing less access to preventable care, more stressful and harmful neighborhood environments and fewer resources to address conditions that develop earlier in their lives. Furthermore, these disparities go beyond the child and family unit and have real costs, including a decreased life expectancy, for these impacted populations.

To address the problems above, the Institute makes the following recommendations:

- Eliminating poverty and focusing on family health status and health care access as a public health priority.
- Investigating and increasing the responsiveness of policies and programs to social, economic, and environmental factors that affect childhood outcomes.
- Promoting high quality and culturally responsive perinatal clinical care in patient-centered systems, informed by scientific consensus and national best practice evidence.
- Providing individually oriented education, health promotion, screening and interventions for women and men of reproductive age to reduce risk factors that might impact early childhood outcomes (i.e. using promotora or community health workers).¹⁴

Joe Prado, the division manager of community health for the Department of Public Health in Fresno County made a statement to the Atlantic for their story. He said that for all providers of

¹³ <https://www.theatlantic.com/health/archive/2018/08/pre-term-birth-race/567862/>

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<https://www.fresnostate.edu/chhs/cvhipi/documents/SJVPHC%20Preventable%20Childhood%20Illness%20Introduction.pdf>

care to become truly respectful and understanding of diversity, it would require a legislative fix for a system-wide approach to train on competency, one that requires a change in magnitude such as that of the Health Insurance Portability and Accountability Act (HIPAA).

Land Use

The history of land use has played a powerful force in shaping the City of Fresno into what it is today. The land use patterns and neighborhood formation in the City were shaped by explicit segregation policies and have created segregated communities to this day.

Organizations like Leadership Counsel for Justice and Accountability assert that land use policies and plans reflect the priorities of local government and constitute the “DNA” of the built environment. As such, land use has direct impacts on families and communities. For example, land use planning where residential areas are in close proximity to dense industrial areas could result in residents being exposed to air toxins from industrial output. Additionally, when schools are permitted in proximity to land that has been impacted by pesticide drift, children’s health could be negatively impacted. In contrast, equitable planning could help communities by creating parks and greens spaces for residents that would help them thrive. Finally, land use and density requirements could affect where affordable housing is developed or not.

Starting in 1875, the Central California Colony was established south of Fresno and subdivided into 20 to 40-acre parcels, landscaped with boulevards of palms, eucalyptus and other drought resistant plants.¹⁵ By 1903, there were 48 separate tracts or colonies that brought farmers from Scandinavia and from across the United States. White homesteaders and land speculators settled on the eastern side of the railroad tracks with the best businesses and neighborhoods, while Chinese immigrants who worked on the railroad and farm the land lived on the western side where the “foreign quarter” and the “center of vice” could be found.¹⁶ As far back as 1873, Fresno’s white residents agreed not to rent, sell or lease any land east of the railroad tracks to the Chinese immigrants. There was even an incident in 1893 in which white rioters chased 300 Chinese workers from Fresno farms back to the city’s Chinatown.¹⁷

In 1918, Fresno’s first ever general plan formalized existing residential segregation by reserving the southern quadrants of the city for industrial businesses and affordable housing. In the 1930s, the commercial belts were zoned to the north of the city core on East-West Belmont and Olive

¹⁵ Note that native American tribes such as the Yokuts, the Chukchansis, the Chowchillas, and the Miwoks were living in the Central Valley before this time. The Gold Rush, the forced movement of native Americans by calvaries, diseases, and the acculturation of Native Americans has changed the makeup and access of Native Americans to lands their ancestors resided on.

¹⁶ In 1937, Fresno was 90% white, 5.4% Mexicans and Native Americans, 3.6% Asian, and 1.6% African Americans

¹⁷ <https://www.theatlantic.com/politics/archive/2018/08/fresnos-segregation/567299/>

Avenues. In 1933, facing a federal housing shortage, the Homeowner's Loan Corporation was created as part of President Franklin Roosevelt's New Deal, with the intention of stopping the urban foreclosure crisis taking hold of the country. Fresno was experiencing a movement towards the north side of town from its Armenian, Russian, and Italian residents, and taking their place were African Americans and Latinos, who made up a small portion of the population at the time. Neighborhoods were zoned A (green), B, C, or D (red) to indicate the level of financial attractiveness. White neighborhoods were shaded green while locations with minority groups like the west side of Fresno were shaded red. The term for this practice is redlining. Private banks adopted the government's identification system, resulting in even more people being denied home loans to residents in neighborhoods considered risky. Insurance companies also followed the practice, restricting insurance coverage to homes in bad neighborhoods. In addition, affluent homes in neighborhoods like the Fig Garden were sold with a deed, in part, on the premise that these racially-based restrictions make the real estate investments more desirable.¹⁸

Historical examples, such as these, show that the permitted use of land for specified purposes always happens in context: what is needed or wanted and where it can be located, and in reverse, what is not wanted and where the unwanted things can be put. For example, in the 1930s, an innovative landfill pioneering the use of trenching was put three miles southwest of downtown where the non-white Fresnoans were living. In 1937, Fresno City bought the 20 acres of land to continue the landfill, which would become the Fresno Municipal Sanitary Landfill. After World War II, more African Americans came to Fresno, where they had few options but to settle in the city's southwest side along with almost all of the Black Fresnoans because of redlining and other discriminatory practices.¹⁹ Through the years, the landfill increased in size to 145 acres. Environmental law became stricter through the years. In 1981, the Fresno City began the process of closing the landfill after it was evaluated by the federal Superfund program. In 1983, the California Department of Health Services conducted tests, which found that methane gas and vinyl chloride gases were being released from the site.²⁰ Furthermore, the contaminants were also found in private ground-water wells around the landfill. On June 24, 1988, the site was proposed as a superfund site and was put on the list on October 10, 1989. Per the Environmental Protection Agency Website, the cleanup is ongoing. Repairing the damage caused by the landfill has included landfill capping, gas collection, and stormwater management. The contaminated water was extracted and treated through a packed tower aerator. The cleanup work is ongoing.²¹

¹⁸ <https://www.theatlantic.com/politics/archive/2018/08/fresnos-segregation/567299/>; Researchers at UC Berkeley and UCSF examined health data in eight California cities that were heavily impacted by redlining. They found that current residences of those neighborhoods are 2.4 times as likely to visit emergency room for asthma as their peers in neighborhoods deemed "low risk" neighborhoods per the zoning practice.

¹⁹ According to the Atlantic, by 1960, Fresno has the highest degree of black-white segregation in the state.

²⁰ <http://historicfresno.org/nrhp/landfill.htm>

²¹ <https://cumulis.epa.gov/supercpad/cursites/csinfo.cfm?id=0901854>

In 1947, the Sierra Meat Company²² relocated to the west side with permission from Fresno County to operate a slaughterhouse and meat packaging facility. As early as 1953, residents were complaining about the foul odor coming from the slaughterhouse; those types of complaints persisted as the number of pounds of meat being processed continued to grow over the decades.²³ In 2012, Leadership Counsel for Justice and Accountability and California Rural Legal Assistance, Inc., represented west side residents in a lawsuit to shut down the plant and move it near the city's wastewater treatment plant.²⁴ In 2017, the City approved a deal to relocate the meat processing plant subject to Darling International getting \$9 million in tax credits to buy down the cost of the project. The deal that was struck also provided the company with rebates on property taxes and sales taxes on locally purchased equipment for the new plant.²⁵

In the mid-1950s, Highway 99 was constructed running north and south of the city, which created another physical barrier between the west side and the rest of Fresno. A former member of the Fresno County Board of Supervisor referred to Highway 99 and the railroad track as "Fresno's Berlin Wall". At about the same time, Manchester Center was developed away from downtown and was equipped for car access, which allowed activities further away from the city center toward the north side. In 1965, the future Fashion Fair broke ground and zoning was changed to allow for the major development in what was a residential district. In the years to come, the affluent white neighborhoods in Fresno would get college campuses, hospitals, business offices, and churches.

In 1973, the U.S. Department of Health, Education, and Welfare found that the Fresno Unified School District violated the Civil Rights Act because school administrators were assigning Black and Hispanic students to classes for students with intellectual disabilities. Most Black students were attending Edison High School, on the west side. In the late 1970s, Model Cities' Funds were invested in West Fresno for redevelopment. During this period, the makeup of Fresno started shifting from a city that was 88 percent white to the majority-minority city it is today. In 1971, McKinley Street was identified as the "Mason Dixon" line of Fresno, the divide between the haves and the have-nots.

These land use patterns and neighborhood formation in the City of Fresno were shaped by explicit segregation policies that have created segregated communities to this day. There is still a strong African American presence on the west side of Fresno with strong men, women, and children who have continued their strong advocacy despite being continuously excluded. Their advocacy efforts have included fighting against the continued gentrification of their community by going door-to-door and doing community organizing. In addition to African Americans,

²² Now, the company is known as Darling International.

²³ <https://fresnoalliance.com/60-years-of-neglect-and-unlawful-behavior-an-overview-of-the-darling-rendering-plant-in-west-fresno/>

²⁴ <https://www.fresnobee.com/news/local/article180726036.html>

²⁵ <https://www.fresnobee.com/news/local/article181189206.html>

Latino, Hmong, and Cambodian people are now the majority of the west side. Many of the people of the west side are still faced with environments that offer few amenities but have multiple environmental challenges, all the while living in poverty.²⁶ They also encounter additional systemic barriers given linguistic isolation, living in food deserts, and potentially living in a mixed immigration status family.

While some residents in the City of Fresno live in neighborhoods that suffer from neglect, others live in communities of opportunities. The exclusive enclaves of north Fresno have a life expectancy of 90 years, while the south and southwest part of the City have a life expectancy that is 20 years less.²⁷ In an article from the Atlantic, Matthew Jendian, chair of Fresno State's sociology department said, "We've done a very good job at sectioning off the poor. We do that better than almost any other place in the country. And it's not by accident."²⁸

Giving lesser amenities, services, and opportunities to richly diverse communities of color is has not been an accident. According to studies, the impact of these human decisions has resulted in life expectancy in West Fresno is 20 years lower than in northeast Fresno.²⁹ The silver lining is we have the power to change these outcomes by making active decisions to invest and support these very same communities. One hopeful example of greenlining disadvantaged communities is the Transformative Climate Communities grant program, funded by the state as part of the Greenhouse Gas Reduction Fund, with the purpose of supporting development that provide local economic, environmental, and health benefits. Downtown, Chinatown, and southwest Fresno will benefit from a \$66 million infusion with a 50 percent required to match that the city intends to meet through private and public partnerships. Twenty-four projects including a community college campus, affordable housing, bike lanes, community garden, and solar power for homes will be constructed. Additionally, planning has deployed more participation from the people who live and or own businesses in the community to help identify projects for investment.³⁰

Water, Agriculture, and Pesticide Drift

The importance of water and how its existence and manipulation has shaped the Central Valley is useful in understanding the health challenges those who live there face. The Valley is the state's most productive agricultural production region, made possible by the Sacramento

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<https://www.fresnostate.edu/chhs/cvhipi/documents/SJVPHC%20Preventable%20Childhood%20Illness%20Introduction.pdf>

²⁷ <https://www.theatlantic.com/politics/archive/2018/08/fresnos-segregation/567299/>

²⁸ Id.

²⁹ <https://www.fresnobee.com/news/local/news-columns-blogs/earth-log/article100983877.html#storylink=cpy>

³⁰ <https://www.fresnobee.com/latest-news/article226807669.html>

and San Joaquin Rivers, which brings water resources from the Sierra Nevada runoff.³¹ While early farming was concentrated near the Sacramento-San Joaquin Delta, where water was easily accessible, massive human reengineering has expanded water access to areas that otherwise would not be suitable for agricultural use. Starting in the 1860s, modern water control commenced via the construction of dams (such as Shasta Dam, Oroville Dam, Folsom Dam, New Melones Dam, Friant Dam, Don Pedro Dam, Pine Flat, and Isabella Dam), reservoirs, canals, hydroelectric power plants and other facilities. Notably, the Central Valley Project - which is the complex and multi-purpose network of water systems that provides flood protection and supplies domestic and industrial water in the Valley and to the San Francisco Bay Area -first commenced with the breaking ground for Shasta Dam on the Sacramento River in 1933. These irrigation and transport systems have had major impacts on the physical, economic, cultural, and ecological landscape of the Valley. For example, when California became a state in 1850, Tulare Lake was the biggest lake west of the Mississippi, but now it is a dry lakebed because water has been diverted for agriculture use.

Agriculture is a predominant force in the Central Valley. Agriculture represents one-sixth of the irrigated land in the U.S. where more than 230 types of crops, including tomatoes, oranges, lettuce, rice, almonds, grapes, cotton, apricots, and asparagus, are grown. The San Joaquin Valley produces half of California’s agricultural production. Fresno County, Tulare County, Kern County, and Merced County are the top four counties for agricultural sales in the U.S. Agriculture creates jobs such as product and equipment sales, hauling produce, processing plants, finance and management, construction and packaging.³² According to Chet P. Hewitt, President and CEO of Sierra Health Foundation, and La June Montgomery Tabron, President and CEO of W.K. Kellogg Foundation, “While the San Joaquin Valley includes the top agricultural producing counties in California, almost 400,000 of the region’s children live in poverty and seven of the 10 counties with the highest child poverty rates in the state are in the Valley. One out of every four Valley children experiences food insecurity and they are much more likely to be exposed to pesticides while in school and to go to schools with unsafe drinking water.”³³

In the San Joaquin Valley, the drinking water is among the most contaminated in the country with the contamination being a by-product of pesticides used in agriculture. According to a research study conducted by the UC Davis Center for Regional Change, racial and health inequities have affected communities in the San Joaquin Valley accessing basics such as safe drinking water. In the report, the researchers note:

³¹ The Valley is increasingly diversifying its industries. While agriculture remains the most important, the government sector, manufacturing, and retail are also important pieces of the economy.

³² <https://www.fresno.gov/transportation/wp-content/uploads/sites/13/2016/10/SJVGRS-Phase-1.pdf>

³³ Introductory letter from “California’s San Joaquin Valley: A Region and Its Children Under Stress.” https://www.shfcenter.org/assets/SJVHF/A_Region_and_Its_Children_Under_Stress-Web.pdf

Local community members and leaders voiced strong concerns about access to drinking water in the San Joaquin Valley, most commonly drawing connections to health problems and the economic burden that poor water quality places on families. Clean, safe drinking water is a necessity for healthy child development, learning and overall well-being. Exposure to drinking water contaminants can lead to multiple health effects for children, including compromised cognitive functioning, liver and kidney damage, gastrointestinal difficulties, cancer and neurological impairment. In recognition of the fundamental role that water plays in human health, equitable access to clean, abundant and affordable drinking water has been deemed a human right and has recently been enshrined in California's new Human Right to Water legislation. Passage of this legislation was prompted by the recognition that in many communities in the region, in particular, communities occupied predominately by low-income people and people of color, such human rights are not being respected or protected.³⁴

In Tulare County, contaminated groundwater is the source of drinking water for 99 percent of the population. Both manmade (nitrate, legacy pesticide) and naturally occurring toxins (arsenic, uranium) are at issue.³⁵ Nitrate can be dangerous to human health, especially for infants. It limits the oxygen that red blood cells can carry, a condition known as methemoglobinemia or "blue baby syndrome". The condition can result in lethargy, dizziness, and death.

Low levels of nitrate can occur naturally in groundwater, but high levels of nitrate in groundwater are often attributed to fertilizers, septic systems, animal feedlots or industrial waste. UC Davis researchers found that 96 percent of the human-generated nitrate in groundwater came from cropland. Synthetic fertilizer was the biggest source at 54 percent followed by animal manure at 33 percent. Fertilizer application followed by irrigation drives nitrate down through the soil and into aquifers. The state's public health system reports violations of health standards, and in 2015, they reported that 63 percent of nitrate contaminants were in the San Joaquin Valle.³⁶ The most affected are small rural communities that are disproportionately poor and Latino. The problem is that it is hard to determine where the source of nitrate pollution is coming from, as there are endless farms.

The state is trying to get a better grip on the nitrate problem. Regulators are having farmers track the application of fertilizers that contain nitrate and yield of crops that consume nitrate to get at

³⁴ Cassie Hartzog, Carolyn Abrams, Nancy Erbstein, Jonathan K. London and Sara Watterson. 2016. "California's San Joaquin Valley: A Region and Its Children Under Stress" Report commissioned by Sierra Health Foundation and conducted by the UC Davis Center for Regional Change. Available at https://www.shfcenter.org/assets/SJVHF/A_Region_and_Its_Children_Under_Stress-Web.pdf

³⁵ Nitrate is an inorganic compound formed when nitrogen combines with oxygen or ozone. <https://www.newsdeeply.com/water/articles/2017/07/05/living-in-californias-san-joaquin-valley-may-harm-your-health>

³⁶ Up until 2003, agriculture was exempt from water quality regulations, making it difficult to make progress to reduce nitrate contamination.

the difference - or the amount of nitrate that is leached into the groundwater. It is uncertain how this is working out in implementation, but that is an area that staff can learn more about as part of the future work of the Select Committee. What is more certain is the fact that so much nitrate is already in the soil, that it will be a problem for years to come. This is also the case with a fumigant 1, 2-Dibromo-3-Chloropropane (DBCP), which was banned in California in 1977, but continues to contaminate the groundwater. The United States Environmental Protection Agency says that chronic exposure to DBCP can decrease sperm counts. The San Joaquin Valley holds three of the four California counties with DBCP that are triple that deemed to be safe by the state.

Pesticide drift is also a challenging issue for the Valley and while there is still a very long way to go, some progress is being made, especially with the recent decision from the California Environmental Protection Agency and the California Department of Pesticide Regulation to prohibit the use of chlorpyrifos. Sometimes when pesticide is sprayed, within 8 to 24 hours, it can turn from a liquid to a gas, making it easy to drift. People living in proximity to the pesticide spraying are then exposed to it. One in 10 registered pesticides generally drift, and one in three are highly acutely toxic or cause cancer, reproductive and developmental disorders, or brain damage. Several pesticides have been linked to early puberty, impaired fertility, and increased breast cancer risk.³⁷ Orion Magazine states that nearly 32 million pounds of pesticides using planes, tractors, and irrigation pipes were used in Fresno County. Growers in the County have applied pesticides an average of 273,000 times per year. Counties have staff to monitor pesticide usage, though it is uncertain whether staffing is sufficient. In addition, the California Department of Pesticide Regulation has a toll-free hotline for people to use to report pesticide drift, but Orion Magazine reports that it has limited funding to spread the word that such a number even exists. In all of California, there are about 370 cases of pesticide poisoning due to drift a year. Some advocates say that it does not accurately capture the total incidents as most cases do not get reported. Advocates have expressed different reasons for incidents not being reported such as not having a representative from the local Agricultural Commissioner Office answering the phone or it being inaccessible to those who do not speak English.

The Pesticide Action Network North America has been working with residents in towns such as Huron and Lindsay to better understand the amount of any pesticide a child can inhale without getting sick by having the residents be scientists and test themselves. The test showed daily evidence of exposure to chlorpyrifos and naled, both organophosphate pesticides. Infant and prenatal exposure to organophosphate pesticides such as chlorpyrifos lead to significant mental and developmental delays. One study in four- to five- year-old in Mexico showed that children exposed to pesticides suffered lags in development. Other studies link pesticide exposure to infertility, neurological disorders, cancer, birth defects, and even autism. The federal Environmental Protection Agency (EPA) had already started phasing out the use of chlorpyrifos

³⁷ <https://www.thenation.com/article/pesticides-farmworkers-agriculture/>

for home use in 2000 over concerns about health and the environment. In 2015, the EPA had proposed prohibiting all uses of the chemical under the Obama administration, but two years later, the current President rescinded the rule, saying the chlorpyrifos was “crucial to U.S. agriculture.”³⁸

El Quinto Sol de America and ally organizations in Huron are working on something to alleviate the problem of exposure to pesticides. They have been pushing for buffer zones between farmland, schools, and homes. In addition, they asked growers to notify schools, hospitals, and residents before they spray nearby. Starting in 2007, growers in Tulare County can no longer apply the most dangerous pesticides, ones that are legally restricted, by plane within a quarter-mile of schools, residential areas, and occupied labor camps. The county was utilizing a state law that permits the creation of a buffer zone to address the concerns that residents of Huron had around pesticide.³⁹ However, that action did not include chlorpyrifos, as it is not classified as a dangerous pesticide.

On May 8, 2019, the California Environmental Protection Agency in conjunction with the California Department of Pesticide Regulation (DPR), announced it was prohibiting chlorpyrifos pesticide based on scientific finds that the pesticide impairs children brain and neurological development. In April, chlorpyrifos was formally listed as a “toxic air contaminant”, defined in California code as “an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. Under such a listing, DPR would have to develop control measures to protect the health of farmworkers and others in proximity to the pesticide being used, but DPR determined that sufficient additional control measures are not feasible. Instead, DPR would start the process of canceling the registrations for products containing the chlorpyrifos, which could be a two-year process. To accompany the action, The Governor proposed and the Legislature approved \$5.7 million to fund the transition to safer and more “sustainable alternatives” via the convening of a workgroup that will help identify and evaluate recommended alternative pest management solutions.⁴⁰

Trying to understand the health impact on contaminated water is hard to do scientifically because of cumulative health impacts. Many Valley residents face contaminants from multiple sources because those who are drinking bad water are also breathing in bad air, living in industrial neighborhoods and landfills. John Capitman, executive director of the Institute and a professor of public health at California State University, Fresno put it best: “We don’t know how air pollution impacts the body differently from water pollution or how multiple effects work out. That is a whole new area of science that is absent yet. How do we understand exposure over

³⁸ <https://www.thenation.com/article/pesticides-farmworkers-agriculture/>

³⁹ <https://orionmagazine.org/article/pesticide-drift/>

⁴⁰ <https://calepa.ca.gov/2019/05/08/california-acts-to-prohibit-chlorpyrifos-pesticide/>

time and exposure to multiple sources of pollutants? There is huge work to be done in that area.”⁴¹

Clean Air and Transportation

Pollution has long been a problem for the Central Valley with many factors contributing to the issues that have been proven to impact health outcomes. Residents of the San Joaquin Valley want more investments in transportation. Typography, agriculture, heavy truck traffic on the I-5 and Highway 99, diesel-burning locomotives, tractors and irrigation pumps, wood-burning stoves and fireplaces, poverty, population growth, and growth in traffic congestion, intersect in an area with stagnant air patterns to create a problem that has been hard to solve. In 2014, Fresno had 8 of the 10 census tracts in the state most heavily burdened by pollution. According to CalEnvironScreen 2.0, 33 percent of the population experiences the worst environmental quality in California are in the San Joaquin Valley where 35 to 40 days a year, federal air quality standards for ground-level ozone are exceeded and more than 100 days when state ozone standards are exceeded. The problem of air pollution in the San Joaquin Valley could trigger penalties under federal and state air quality regulations.⁴²

Fine particulate matter can cause problems ranging from asthma to premature death. Studies have demonstrated how air pollution exacerbates birth outcomes, asthma, and cardiovascular conditions. San Joaquin Valley residents report some of the highest rates of asthma symptoms and asthma-related emergency department visits and hospitalization in California.⁴³

The San Joaquin Valley has one of the highest rates of teen birth in California, but has also seen the rate of teen birth decreased in recent years. Separately, but related, the San Joaquin Valley has one of the higher levels of adverse birth outcomes than the state average with 9.4 percent of birth being pre-term in comparison to 8.8 percent for the entire state. Rates of teen birthing and adverse birth outcomes were higher for low-income women of color living in neighborhoods with fewer economic opportunities and higher pollution.

Rural communities in the San Joaquin Valley are challenged by a lack of transportation access. According to the UC Davis Center for Regional Change: “The availability of safe, reliable and affordable public transportation is essential for healthy and equitable communities because it provides access to job opportunities, food, health services and education. However, transit infrastructure is insufficient in the San Joaquin Valley, which takes a toll on community health

⁴¹ <https://www.newsdeeply.com/water/articles/2017/07/05/living-in-californias-san-joaquin-valley-may-harm-your-health>

⁴² <https://www.fresno.gov/transportation/wp-content/uploads/sites/13/2016/10/SJVGRS-Phase-1.pdf>

⁴³ <https://www.ncbi.nlm.nih.gov/pubmed/20056967>

and economic stability.”⁴⁴ One of the challenges to improving transportation access has been that transportation projects have not been economically efficient. There is an effort underway by UC Davis Institute of Transportation Studies, Caltrans, and the eight Metropolitan Planning Organization to better understand transit inefficiencies, identify impacts to health, social services, education and employment for rural residents dependent on transit, and develop new and innovative ways to create transit access and mobility. The other part of the goal will be to reduce vehicle miles traveled and greenhouse gas emissions consistent with Sustainable Communities Strategies (SB 375).

In 2000, a report was produced to better understand what transportation voters in Fresno County were facing. The top three problems cited were: 1) lack of public transportation (identified by 29 percent), 2) road repairs and expansion (22 percent), and 3) traffic congestion (14 percent).⁴⁵

Leadership Counsel for Justice and Accountability states that residents’ leaders in both the San Joaquin and Coachella Valleys have identified transit and pedestrian safety as priorities to further environmental and health goals, while simultaneously increasing access to educational and employment opportunities. They assert that sidewalks, bike lanes, curbs and gutters, and street lighting are essential to healthy communities.

Climate Change and Impacts

The Central Valley is vulnerable to catastrophic events because of climate change. According to California’s Fourth Climate Change Assessment: “Climate change poses direct and indirect risks to public health, as people will experience earlier death and worsening illnesses.”⁴⁶ The earth’s climate is changing at an extremely fast pace and great magnitude. This change has been driven by human activities, propelled by the Industrial Revolution and the burning of fossil fuels like coal and oil, which has increased the concentration of atmospheric carbon dioxide. About 150 years ago on earth, the carbon dioxide level was 280 parts per million; now it is 400 parts per million.⁴⁷ More carbon dioxide results in a hotter planet. For California, this means increased probabilities of heatwaves, droughts, reduced snowpack, large wildfires, and storms with heavy precipitation and flooding. In the Central Valley, it means Heat-Health Events

⁴⁴ Cassie Hartzog, Carolyn Abrams, Nancy Erbstein, Jonathan K. London and Sara Watterson. 2016. "California’s San Joaquin Valley: A Region and Its Children Under Stress" Report commissioned by Sierra Health Foundation and conducted by the UC Davis Center for Regional Change. Available at

https://www.shfcenter.org/assets/SJVHF/A_Region_and_Its_Children_Under_Stress-Web.pdf

⁴⁵ <https://www.fresno.gov/transportation/wp-content/uploads/sites/13/2016/10/SJVGRS-Phase-1.pdf>

⁴⁶ <https://www.energy.ca.gov/sites/default/files/2019-07/Statewide%20Reports-%20SUM-CCCA4-2018-013%20Statewide%20Summary%20Report.pdf>

⁴⁷ <https://climate.nasa.gov/causes/>

(HHEs), which better predict risk to populations vulnerable to heat, will worsen drastically with projects of average Heat-Health events that are two weeks or longer.⁴⁸

Climate change can impact certain populations differently depending on factors such as population density, level of economic development, food availability, income level and distribution, local environmental conditions, pre-existing health status, and the quality and availability of public health care. Physical evidence of climate change includes new temperature records and extreme weather events. Environmental changes resulting from global climate change have important implications for public health. According to the World Health Organization, a change in climatic conditions can have three kinds of health impacts:⁴⁹

- Those that are relatively direct, usually caused by weather extremes.
- The health consequences of various processes of environmental change and ecological disruption that occur in response to climate change.
- The diverse health consequences – traumatic, infectious, nutritional, psychological and other – that occur in demoralized and displaced populations in the wake of climate-induced economic dislocation, environmental decline, and conflict situations.

Since 2011, California has experienced abnormally dry conditions. Former Governor Jerry Brown declared emergency droughts in 2014 and 2015 and ordered urban areas to reduce water usage by 25 percent. These weather conditions are believed to be the result of climate change, leading to dead trees and dry grass caused by drought that has triggered extreme wildfire seasons. Last year (2018), California suffered the most destructive wildfire. Smoke from wildfires contains hazardous chemicals and air pollutants, including particulate matter, carbon monoxide, and ozone. Public health is greatly threatened by environmental conditions. The smoke and pollutants can have a heavy toll on vulnerable populations, especially people with asthma, children, the elderly, and people with respiratory conditions.

Another weather extreme was exemplified when a single rainy season in late 2018 and early 2019 that officially ended California's seven-year drought. Between December 2018 and the end of February 2019, the contiguous U.S. marked its wettest winter on record. Although the state needed the increased rainfall, heavy precipitation can come with its own health risks.

Storm runoff from agricultural and urban areas can disperse water-related contaminants such as chemicals used in agricultural practices and waterborne pathogens such as bacteria and viruses derived from human and animal waste to spread into surface waters, groundwater, and coastal waters. Communities with private or small water systems are particularly susceptible to

⁴⁸ <https://www.energy.ca.gov/sites/default/files/2019-07/Statewide%20Reports-%20SUM-CCCA4-2018-013%20Statewide%20Summary%20Report.pdf>

⁴⁹ <https://www.who.int/globalchange/summary/en/index2.html>

contamination following heavy rainfall. Human exposure to waterborne infections can occur by contact with contaminated drinking water, recreational water, or food.

To make matters worse, fire, wind and rain combined to increase the risk of deadly mudslides and landslides. Areas where wildfires have destroyed vegetation on slopes are at high risk of landslides during and after heavy rains. When wildfires occur, they burn trees and shrubs, chars the ground and produce a lot of ash and debris. The resulting ash is very fine, and very slick, which makes for a perfect sliding surface. Landslides and mudslides can break electrical, gas and sewage lines as well as disrupt roadways and disrupt transportation and access to health care.

Human beings can reverse the impact of climate change. More actions can be taken to reduce carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons in the atmosphere while concurrently providing relief to communities particularly vulnerable to the impacts of climate change – doing so would be good for the earth in general, and the people of the Central Valley and their health outcomes in particular.

Housing, Home Ownership, and Homelessness

The scarcity of housing across the state driven by the cost to construct housing coupled with poverty has driven up housing costs and greatly contribute to the homeless situation, including in the Central Valley. The first hearing of the Select Committee was focused on housing and its importance to children’s well-being, the many problems that drive astronomical housing costs, and what some of the solutions might be. As such, we will not go to great lengths on housing issues here, but we want to provide some data for the Central Valley, San Joaquin Valley, and Fresno. Additionally, we have shared information about redlining and urban planning and its impact that it has had on Fresno as part of the contextual framework that existed even before the Great Recession of 2008.

Since the 1980’s, cities like Bakersfield, Porterville, Fresno, Visalia, Tracy, Modesto, Stockton, and other towns and cities have experienced growth in both area and population. This is, in part, driven by the high cost of housing in Los Angeles and the San Francisco Bay Area. Some of these families have moved to the Central Valley while continuing to work in higher-cost regions to make ends meet. At the same time, some families have lived in the Central Valley for generations. However, “due to the legacy of discriminatory housing policies and lending practices, children of color are more likely to live in the poorest neighborhoods, and less likely to move out of them by the time they are adults.”⁵⁰

⁵⁰ Cassie Hartzog, Carolyn Abrams, Nancy Erbstein, Jonathan K. London and Sara Watterson. 2016. "California’s San Joaquin Valley: A Region and Its Children Under Stress" Report commissioned by Sierra Health Foundation

Fresno County remains a relatively affordable place to live by one standard. The median rent for an apartment in Fresno City is the lowest among California’s largest cities at \$975. In comparison, average rent in Los Angeles is \$2,554 and \$3,017 in San Jose.⁵¹ For single-family homes, rent in Fresno County is \$1,346 in comparison to \$3,057 in Los Angeles and \$3,511 in San Jose. Moreover, while rent is cheaper, proportionally, more people are rent-burdened. Sixty percent of renter households in Fresno County pay more than 30 percent of their gross income on housing-related costs. In lower-income households, 73 percent of renters are rent-burdened. By contrast, median-income families are 27 percent rent-burdened. The problems are that many Fresno residents are living in poverty, and there is a shortage of affordable apartments and other rentals available. As such, according to research, primary concerns for residents in the San Joaquin Valley include both the “provision of affordable housing units, displacement of low-income residents from gentrifying neighborhoods, limited adherence to inclusionary zoning in many jurisdictions, and the clustering of affordable homes in isolated areas with limited access to key services and resources in the region.”⁵²

Fresno has 13,000 Section 8 Housing Choice vouchers, and the waitlist of eligible families is 40,000. In 2017, Fresno County received \$86 million from the Section 8 funds, but clearly, this amount is not sufficient given the need.

Elected officials and the Fresno Housing Authority have a goal of developing more affordable housing in general, and more affordable housing that is owned by the government specifically - in recognition that it is private landlords that benefit and accrue wealth in the Section 8 program. As such, there is not much of a return on the investment for the government, **but for** the people being sheltered, which one could argue is reason enough. The City of Fresno, like most municipalities, are challenged by the cost of building housing, including from the government’s bureaucratic processes. In an interview with the Fresno Bee, Mayor Lee Brand said, “The cost to build downtown is the same up north. However, up north, you can get \$2 per square foot and downtown you get \$1 per square foot. It doesn’t pencil out.” He is likely correct, especially because affordable housing development still heavily relies on private developers, and most developers are in the business to make money.

The other goal that elected officials in Fresno have is to improve the economy and the income that families make. In practice, this is occurring through job creation from businesses such as Amazon and Ulta Beauty, both of which opened distribution centers in Fresno last year, generating about 2,000 new jobs.⁵³ While the City of Fresno has cited 2,000 new jobs as a victory, advocates have countered that those jobs have not gone to community residents in impacted neighborhoods. Instead, local advocates have cited the increased vulnerability of

and conducted by the UC Davis Center for Regional Change. Available at https://www.shfcenter.org/assets/SJVHF/A_Region_and_Its_Children_Under_Stress-Web.pdf

⁵² See supra.

⁵³ <https://www.fresnobee.com/news/local/article225294110.html>

community residents who are exposed to more hazards given the opening of the distribution centers while also noting the tax benefits received by corporations at the expense of human beings.

For some, the option of renting is buying. Buying has traditionally been seen as a better financial decision because it accrues wealth. That decision weighs the difference between the cost of renting versus buying for each potential purchaser in different markets and contingent upon many outside factors. In 2017, a rental affordability report indicates that generally, renting in Fresno is cheaper than buying - by a little.

Fresno is still one of the most affordable areas in California to buy a home for those who are making a living wage. However, home prices are rising faster than rent and employment wages.⁵⁴ As such, fewer people will likely be able to buy in the future unless some drastic changes are made. Between 2011 and 2017, homeownership in the Valley decreased, while rental housing increased. New numbers from the U.S. Census Bureau show that many counties have seen double-digit growth in renter-occupied households and only modest gains in homeownership — if not single-digit declines since 2011.⁵⁵ This challenge is compounded for African-American and Latino households, who on average tend to have lower incomes, lower credit scores, and less wealth than white households.⁵⁶ Additionally, interest rates are increasing and banks are more selective with the loans they make and to the people they lend to in an effort to reduce the number of foreclosures that lead to the economic bust. The Institutes at Fresno State asserts that Latinos have been cut off from housing and supportive services.

Some people only see two options with respect to housing: renting or buying. There is a third option: homelessness. The 2019 Point-In-Time Count shows a 20 percent increase in homelessness in the central San Joaquin Valley. The City of Fresno alone has 1,469 homeless people, more than 200 from last year, with 78 percent of the people unsheltered. Fresno County was home to another 645 homeless people, an increase in 90 people. Madera city was home to 360 homeless people with 73 percent of the population unsheltered. Madera County had 21 homeless people, a decrease of 40 people from the year before. Separately, the San Joaquin Continuum of Care Point-In-Time Count showed 2,629 homeless individuals living in that County. Of that figure, 1,071 were sheltered and 1,558 were unsheltered. In San Joaquin County, 126 households with children consisting of 458 persons in total were living in emergency shelters, and 20 households with 57 people total were living in transitional housing. In San Joaquin County, rental costs require income 2.5 times the minimum wage. In contrast,

⁵⁴ <https://www.fresnobee.com/news/business/biz-columns-blogs/real-estate-blog/article124727424.html>

⁵⁵ <https://www.census.gov/housing/hvs/files/currenthvspress.pdf>

⁵⁶ <http://www.sanjoaquinccoc.org/wp-content/uploads/2019/04/San-Joaquin-Continuum-of-Care-Report-on-the-2019-Point-in-Time-Count.pdf>

more than 20 percent of San Joaquin Valley residents live below the federal poverty level and over 29 percent of adults lack a high school diploma.⁵⁷

As part of the Budget Act of 2018, the Legislature provided \$500 million in homeless assistance funding throughout California via the Homeless Emergency Aid Program (HEAP). Of that amount, \$3.1 million was provided to the City of Fresno and \$9.5 million was provided to the Fresno Madera Continuum of Care. Fresno City is using that money to build a low-barrier shelter. This year, the HEAP funding increased to \$650 million.⁵⁸

Health Workforce

California will likely face a statewide shortfall of physicians in the coming decade. Some regions of the state will be impacted by this shortage in disparate ways. The Central Valley and Central Coast region and the Southern Border region are projected to observe the worst shortages. Health workforce shortages will result in people going without the care that they need, including preventive services and increased use of emergency services and increase preventable hospitalizations.

Multiple factors have caused the shortage of healthcare practitioners including barriers to higher education for certain populations and a large percentage of the baby boomer generation reaching retirement age. As the state's production of health workers continues to lag behind growing demands, millions of Californians will face difficulty accessing quality, affordable care.

Communities in rural areas such as California's Central Valley are already significantly more likely to face barriers to accessing health care services than those living in urban or suburban areas of the state. This is due to both a shortage of physicians in rural areas and the number and demographics of the residents of those areas. Access to primary care physicians is essential for preventative health care and health maintenance. More broadly, California is facing a physician shortage throughout the state. Most regions fall below the 60-doctor benchmark that experts consider adequate, and California's rural regions fare much worse. There were fewer than 50 doctors per 100,000 people in three rural areas, and the Inland Empire region, east of Los Angeles, had only 39 doctors per 100,000 people.⁵⁹ The Central Valley and Coast region and Southern Border counties are expected to have some of the largest shortfalls in terms of the supply of health practitioners. The Central Valley and Central Coast region are also the fastest growing in California, making this problem that much more pertinent.

⁵⁷ https://sjvcogs.org/valleywide_activities/transit-needs-in-rural-communities/

⁵⁹ <https://www.chcf.org/publication/cure-californias-doctor-shortage/>

California is a large and diverse state with pockets of large populations in certain regions and less dense populations in others. Comparatively speaking, this variation in a population can mask the supply of healthcare professionals across the state. The Greater Bay Area has the largest number of doctors of medicine (MD) and nurse practitioners (NP) but Los Angeles County has the largest numbers of Doctors of Osteopathic Medicine (DO) and physician assistants (PA). The Northern and Sierra region had the smallest numbers of clinicians in all four professions.⁶⁰

Compared to urban regions, the Central Valley and similarly rural areas have lower numbers of physicians and greater difficulty recruiting physicians. Family medicine physicians have the broadest scope of practice and are thus, especially capable and able to serve rural communities without additional support from specialists. Family practice-oriented programs that employ medical professionals such as nurse practitioners and physician assistants position graduates for the necessary comprehensive scope of practice required in rural settings. Regions with more physician assistants tend to have the fewer MDs, signifying that physician assistants must take on the responsibility of care that would otherwise be covered by an MD. For example, in 2016, the Northern and Sierra region had one of the highest ratios of physician assistants per 100,000 people at 34 but the lowest ratios of all physicians at 203.⁶¹ Meanwhile, the ratio of physicians ranges from a low of 170 in the San Joaquin Valley to a high of 425 in the Greater Bay Area. In a similar vein, nurse ratios ranged from a high of 68 per 100,000 in the San Diego area to 35 in the Inland Empire.

There is a dire need for California to increase its pool of talented, diverse health workers and to establish and expand pipeline programs to rural regions to connect health care providers to high need communities. Programs that have embarked on this effort include:

- Prep Medico out of UC Davis. This is a six-week residential pipeline program for freshman and sophomore college students that helps students navigate their educational journey towards medical school and provide exposure to the world of patient care,
- The Latino Center for Medical Education and Research (LaCMER) in Fresno. This program addresses the persistent shortage and under-representation of Latino (particularly Mexican-American) physicians in the practice community and in the medical school faculty;
- The Junior and High School Doctors Academies and the Health Careers Opportunity Program at California State University, Fresno. This program aims to academically enrich, nurture and support disadvantaged youth from the 7th grade through college to assure their academic success and ultimate acceptance into health professional schools.

⁶⁰ https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/Research-Report_CA-Primary-Care-Workforce.pdf

⁶¹ https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/Research-Report_CA-Primary-Care-Workforce.pdf

Experts agree that although there is no single cure to California’s physician shortage, there are approaches that could be taken to reverse the trend. Here, we provide their recommendation in the verbatim form:

1. Make Primary Care Pay

- Expanding loan repayment programs can help primary care physicians who struggle with crippling medical education debts.
- Replacing a fee-for-service model with an alternative payment model can narrow the income gap between primary care physicians and specialists.

The first step in stemming the primary care shortfall in California is providing incentives for existing primary care physicians to stay in their jobs. One of the most obvious — but more complicated — ways to do this is to improve the way primary care physicians get paid.

2. Expand the Care Team

- Primary care physicians have among the highest burnout rates of any medical specialty.
- Expanding training programs for nurse practitioners and physician assistants can reduce the workload and extend the capacity of primary care physicians.
- Training nurse practitioners and physician assistants takes between two and three years, compared to nearly eight for primary care physicians.
- To manage increasing demand for primary care, providers must expand the size and scope of primary care teams.

Burnout for primary care physicians is a chronic condition. A 2015 survey found that 68% of family practitioners would choose a different specialty if given the option of restarting their careers. Christina Maslach, who developed the Maslach Burnout Inventory, a 22-question psychological questionnaire, describes burnout as “an erosion of the soul caused by a deterioration of one’s values, dignity, spirit, and will.”

3. Keep It Local

- Studies show that primary care physicians are more likely to practice where they were trained.
- Only 8% of California’s practicing primary care physicians are Latino, and only 3% are Black.

The shortage of California’s primary care workforce is complicated by maldistribution. There is a distinct difference in coverage between coastal urban areas such as San

Francisco, with one primary care physician for every 160 people, and more rural areas such as Grass Valley, about an hour north of Sacramento, with one physician for every 1,100 people.

4. Reach the Students

- Career academies expose students as young as 15 years old to real-world primary care settings.
- Increasing medical education capacity by as little as 3% could solve most of California’s long-term primary care shortages, according to UCSF.
- Novel medical programs and shortened degree tracks incentivize more students.

To ensure a steady supply of primary care doctors, California must find ways to encourage students to enter the field. One of the most dependable ways to do this is by expanding the number and scope of medical training programs across the state — especially in underserved areas.

5. Expand Residency Programs

- Medical students who do their residencies in California are more likely to practice medicine in California.
- Federal efforts to expand primary care residencies have helped California in the past, but have stalled in Congress.
- Increase federal support for training primary care physicians in underserved areas.
- Seventy percent of doctors who complete residencies in California will stay in the state to start their careers. The historical reliability of residency programs to keep newly minted doctors at home makes investing in them attractive to primary care experts in California.

“I think there are arguments to make for expanding medical schools in California, but I think we get more bang for our buck if we expand residency programs,” Coffman said. “If I invest in a medical school, I have no guarantee they’re going into primary care, and it’s going to be at least seven years.”⁶²

Cultural Competency

Cultural competency is a direct challenge to the idea of “one size fits all” and is especially critical in serving the increasing ethnic, racial, and cultural diversity in California’s population. Although definitions of “cultural competency” vary, the term was initially defined

⁶² <https://www.chcf.org/publication/cure-californias-doctor-shortage/>

by mental health researchers more than a decade ago as “a set of congruent behaviors, attitudes, and policies that come together in a system, agency or amongst professionals and enables that system, agency or those professionals to work effectively in cross-cultural situations.”⁶³ Cultural competency is not only cultural awareness and sensitivity, but it requires us to take a step further by taking this awareness and sensitivity and applying them effectively in cross-cultural situations.

In the healthcare field, training on cultural competency increases cultural awareness skills to clinical and administrative staff. Training can provide a way to mitigate complications that can arise from cultural mismatches and can result when a patient and staff do not share a common subculture and mutual understanding of each other’s health and other beliefs. Even within racial or ethnic groups, diversity exists. The complexity of cultures and subcultures dictates that cultural competency training be provided for all health staff from all racial and ethnic backgrounds.

The racial and ethnic demographics of California’s physicians differs greatly from that of the state’s general population. Compared to the state population, the physician population was composed of a higher percentage of Asians (28 percent of physicians and 14 percent of the population). The percentage of Latino physicians was 33 percentage points lower than that of the Latino state population (5 percent of physicians versus 38 percent of the population). African Americans accounted for 6 percent of the population but 3 percent of physicians.⁶⁴ By 2030, the majority of Californians are expected to be people of color. Research has demonstrated that patient-physician concordance of race, language, and social characteristics strengthen the patient-physician relationship through higher levels of trust and satisfaction during office visits and greater use of preventive services.⁶⁵ As people of color are currently not well represented in health care professions, this growing diversity makes cultural competency much more important.

Cultural competency among health care providers has the potential to improve the health outcomes of ethnic minority populations in California. Research has shown that some health disparities are further exacerbated by a lack of cultural awareness, cultural sensitivity, and cultural competency within health facilities.

Research further reveals that implicit bias contributes to wider disparities. For example, although maternal mortality and morbidity rates in California have decreased by 54% in the past

⁶³ Cross TL, Bazron BJ, Dennis KW, Isaacs MR. Towards a Culturally Competent System of Care: A Monograph on Effective Services for Minority Children Who Are Severely Emotionally Disturbed. Washington, DC: CASSP Technical Assistance Center, Georgetown University Child Development Center; 1989.

⁶⁴ <https://www.chcf.org/wp-content/uploads/2018/06/CAPhysicianSupply2018.pdf>

⁶⁵ Street, Richard & O'Malley, Kimberly & Cooper, Lisa & Haidet, Paul. (2008). Understanding Concordance in Patient-Physician Relationships: Personal and Ethnic Dimensions of Shared Identity. *Annals of family medicine*. 6. 198-205. 10.1370/afm.821.

decade, rates for Black women remain at three to four times higher than maternal mortality rates of other ethnic and racial groups. This disparity cannot be explained by the expected social determinants of health -- access to care, socioeconomic status, education level, risky behavior, etc. In fact, research has shown that Black women with a college degree have worse birth outcomes than white women with less than a high school diploma. Evidence points to implicit bias as the leading cause of this disparity. A 2016 study by University of Virginia researchers found that white medical students believed biological myths about racial differences in patients, including that Black patients have fewer sensitive nerve endings, are able to tolerate more pain and have thicker skin than their white counterparts. Although not all cases of bias are as blatant as the ones in the study, even the unconscious biases can be detrimental to the treatment and health outcomes of patients. Bias can lead to an over -or under - prescription of pain medication, unnecessary C-sections, ignoring alarming symptoms and instead of blaming them on the patient's weight or age, all of which can have lethal consequences.

Although it is hard in today's political and social environment to accept one's potential for bias, every single person holds some biases. As these biases are usually unconscious, they might not reflect the conscious and explicit beliefs of the individual. However, when an individual, such as a health care provider, is tasked with making decisions that are the difference between life and death for another person, then arguably, it is essential that the individual is aware of their biases. At a minimum, awareness causes the provider to recognize and mitigate their biases before those beliefs influence actions; and at a maximum, awareness allows the provider to take the steps to unlearn these unconscious beliefs. This means that implicit bias and cultural competency trainings lead directly to better patient care and better health outcomes.

Other Barriers to Care

California's undocumented adult immigrant population has limited options for accessing care and face various barriers to care. Undocumented adults comprise the largest share of the state's uninsured residents. Insurance coverage provides multiple benefits for individuals, communities, and the state. Coverage means peace of mind and financial security so that a medical emergency does not mean bankruptcy for an individual or a family. Coverage also means that emergency room (ER) is not flooded with individuals who are forced to wait until their conditions reach an unbearable state so that they are eligible for emergency treatment. Treating preventable conditions at the ER instead of detecting and curbing them through regular screening and preventative treatments place the costs of these treatments on the state and taxpayer dollars. As California considers healthcare a right for all, it is critical that the state explore avenues to expand health care coverage to all, regardless of immigration status.

To that end, the Legislature approved and Governor Gavin Newsom signed legislation to make California the first state to provide health care coverage to young undocumented adults ages 19 to 25 who meet the Medi-Cal income threshold. The measure provided \$98 million to benefit almost 100,000 people.

California's undocumented immigrants use a patchwork of health care options to receive care but some are unenrolling from available coverage due to fear over immigration enforcement. Low-income children and pregnant residents are eligible for Medi-Cal regardless of immigration status. Some counties also provide undocumented immigrants programs for those who cannot afford medical care. Additional options for undocumented immigrants include community clinics, rural health clinics, emergency rooms, or a limited version of Medi-Cal for medical emergencies. Clinics provide primary care services like screenings, physicals, and chronic disease management and prescription medications. Lack of accessible care leads to untreated illnesses that might eventually become catastrophic for both the individual and their communities.

However, coverage alone is not enough. Oftentimes, patient care access issues are not about simply getting a foot in the door, but rather getting a foot in the right door. The complex eligibility and enrollment processes, as well as a fractured delivery system, can act as barriers to enroll in and navigate health coverage. While it is essential for healthcare organizations to reduce obstacles barring patients from gaining and maintaining access, it is equally important for organizations to make sure patients are getting to the right type of facility. Even when a patient has access to a provider and can schedule an appointment, transportation barriers often can keep patients from seeing their clinicians. Patients who are physically unable to drive, who face financial barriers, or who otherwise cannot obtain transportation or time off from work to go a clinic often go without care. Community-based health navigators and enrollers can help alleviate these barriers. California's Budget Act of 2019 provided funding for health navigators and enrollers.

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