

**California Behavioral Health Care Adequacy Standards Analysis**

**Brendan Bloss**

**January 29, 2026**

## **Executive Summary:**

Millions of Californians cannot get the appropriate behavioral health care they need due to spiraling health care costs and an insufficient number of providers. Healthcare spending has increased by 30% from 2015 to 2020 reaching \$405 billion (Chen, 2025). Rising health care costs have disproportionally impacted people of lower socioeconomic status and republican backed mega bill H.R.1 is going to cut healthcare spending which will worsen this problem. Outside of spiraling healthcare costs, many key compliance areas related to behavioral health care do not sufficiently meet behavioral health care adequacy standards. A compliance area is a regulatory evaluation category that determines if a healthcare plan meets the required access standards. These evaluation categories may include time or distance, timely access, or capacity and composition standards. These are important measures because they allow analysts to see which areas are the weakest link in access to behavioral health care.

This project will analyze how the overall percentage of adequacy standards met changed each fiscal year from 2021 – 2024 for both urban and rural counties, as well as for each behavioral health service type. This will allow analysts to see if access to behavioral health services has improved or worsened over time. Urban and rural areas have their own unique challenges when it comes to behavioral health care access, so comparing both areas over time will give good insights. Moreover, knowing which behavioral health services have improved and gotten worse will allow stakeholders to target improving a specific service area.

The main goal of this project is to research inefficiencies and inequalities in regard to California's behavioral health care system. Compliance areas that do not adequately meet behavioral health care standards will be analyzed for both rural and urban counties as well as statewide. This will allow stakeholders to target improvements in specific areas of the state. Service types such as opioid treatment, residential, or outpatient treatment will be analyzed between youth (< 21 years old) and adult (21+) beneficiaries to see which group has better access to these services. Access to the different behavioral health services will also be compared between urban and rural counties to see if services meet adequacy standards more often in rural or urban counties.

Researching inequalities between population groups when it comes to access to specific behavioral health services will allow analysts to see if one population group is better served than the other. Furthermore, it is important that teens and young adults have sufficient access to behavioral health services so they can succeed and have a good quality of life as an adult after receiving care. Therefore, researching adequacy standards for compliance areas and behavioral health service types across rural and urban counties as well as for each population group will give lawmakers insights into how they can improve equality and access to behavioral health services.

**Description of dataset:**

The behavior health network adequacy dataset captures county submitted adequacy compliance data in all 58 counties across California. The purpose of the dataset is to see whether behavioral health care plans provide equitable, sufficient, and accessible care to beneficiaries in each county by evaluating whether health plans meet standards for areas such as timely access, geographic availability (time or distance), provider capacity, and service composition. The data is sourced from information submitted by county behavioral health plans and the California Department of Health Care Services, which are part of the annual network adequacy certification process required by federal Medicaid rules and California law. The data covers all 58 counties in California and is updated annually, reflecting the most recent certification years submissions and compliance results.

Link to dataset:

[https://healthdata.gov/State/Behavioral-Health-Network-Adequacy/fegv-im75/about\\_data](https://healthdata.gov/State/Behavioral-Health-Network-Adequacy/fegv-im75/about_data)

**Problem:**

The main problem facing Californian's when it comes to health care access is the cost of health care and insurance. As of 2020, health care spending in California has reached \$405 billion (Chen, 2025). As a result, millions of Californians cannot afford the care they need and more than half delay or skip getting care due to spiraling costs (Stremikis & Teare, 2025). When it comes to analyzing the cost problem, factors that are increasing the cost of healthcare must be analyzed. Healthcare systems are very complex and are often inefficient because different hospitals, doctors, and insurance companies use different computer systems for clinical data, billing, and administrative tasks (Stremikis & Teare, 2025). This results in nearly \$21 billion lost each year from hiring more people to handle paperwork and staff in different parts of the system spending extra time reentering the same information (Stremikis & Teare, 2025). This money does not go towards providing care for patients, making this a significant problem in healthcare. As a result, patients have longer wait times for appointments and doctors have to spend more time communicating with insurance companies to see which treatments are covered under insurance, delaying treatments (Stremikis & Teare, 2025). This ties into Behavioral Health Network Adequacy dataset because rising costs may cause behavioral treatment to become less accessible to beneficiaries due to increased premium costs.

Another problem in California's healthcare system is a lack of competition in rural areas which also increases prices. There may only be one major hospital system or where one health insurance company dominates. As a result, there is no competition between insurance companies and between health networks. This causes prices to increase without improvement in care and

patients have fewer options while paying more for health care access (Stremikis & Teare, 2025). Although this dataset focuses on behavioral health, other health conditions that can be detected and treated early on such as prediabetes, early stages of heart disease, and regular cancer screenings are being put off, and become bigger problems that are more expensive and difficult to treat (Stremikis & Teare, 2025). The same is true when it comes to seeking mental health treatment. Long wait times and expensive treatments make seeking help unattainable for many.

The biggest root cause of the problem is that becoming a licensed therapist is a long and expensive process causing shortages of providers across the state. Becoming a licensed therapist requires a master's degree, becoming a psychiatrist requires a medical degree, and becoming a psychologist requires a doctorate degree (Echelman, 2025). Students often have to work hundreds of hours in unpaid internships as a graduation requirement, and a master's program can easily cost over \$60,000 (Echelman, 2025). When it comes to figuring out why there are long wait times and provider shortages across the state, it is important to know the root causes such as the time and expenses needed to become a behavioral health professional. With a high barrier of entry to become a licensed therapist or psychologist, shortages in mental health professionals will continue to increase. The next section emphasizes the importance of these problems and policies that aim to make healthcare more accessible to California residents.

### **Project Importance:**

This project is important because demand for mental health services has increased dramatically since the COVID-19 pandemic while supply for behavioral health care providers has not kept up. Potential cuts to federal health care spending may exacerbate this problem. Policy makers in California have taken big steps to improve access to healthcare and mental health treatment to millions of lower income residents over the past 15 years. The states average uninsured rate has dropped from roughly 25% in 2009 to less than 10% as of 2024 (Nanguneri & Momin, 2024). However, the republican backed mega bill H.R.1 is enacting huge healthcare cuts with more than \$1 trillion cut nationwide from Medicaid, Medicare, and ACA marketplace exchanges over the next decade. This mega bill is threatening to reduce healthcare access for millions across the state and undo over a decade's worth of work to make healthcare more accessible (California Budget & Policy Center). Nearly a third of California's residents under the age of 65 rely on Medi-Cal which is a state funded program that provides low-cost health care to lower income individuals, but federal cuts are putting coverage at risk, as an estimated 34 million California residents may lose coverage (California Budget & Policy Center). California's poverty rate continues to be among the highest in the nation and cuts to Medi-Cal will worsen poverty which is why it is important to analyze which counties and regions are meeting compliance standards with behavioral health care. Medi-Cal has proven to decrease poverty rates in California as the supplemental poverty measure of 17.7% is lower than the health-inclusive poverty measure at 18.8% measured over a 3-year period from 2022 - 2024 (California Budget & Policy Center).

Health care costs continue to increase while more behavioral health care providers are needed, and funding for affordable healthcare programs is in jeopardy, making this a complex challenge.

Healthcare accessibility is especially problematic in rural areas of the state as nearly two-thirds of hospitals that serve rural communities are located more than 35 miles from another medical facility and are operating at a loss (Coyle, 2024). This causes staffing shortages, less nurses and practicing physicians, leading to long wait times for appointments (Coyle, 2024). This problem is even worse when it comes to seeking mental health treatment because there is a major ongoing shortage of mental health professionals in rural counties and nearly a third of Californians are living in an area with an insufficient ratio of providers to patients (Echelman, 2025). Moreover, roughly 50% of the counties in California have a shortage of mental health providers (Echelman, 2025). This causes residents who live in rural areas to potentially be turned down when it comes to seeking behavioral health treatment if their problem is not severe (Echelman, 2025).

Furthermore, many hospitals and treatment facilities in rural areas cannot afford to continue operating and are forced to shut down, increasing the distance to the nearest medical facility significantly for residents in rural areas (Coyle, 2024). This is a significant factor that contributes to Californians in rural areas not having adequate access to behavioral health services. This problem is exacerbated by the aging population of psychologists and mental health professionals who are nearing retirement, as roughly 40% of psychologists and therapists in California are over the age of 50 (Echelman, 2025). Therefore, finding ways to incentivize becoming a licensed therapist or psychiatrist must be examined.

Using the Behavioral Health Network Adequacy dataset, this project will analyze which behavioral healthcare access standards are not met in each county, and which standards are being enforced statewide and in each county. Counties in rural areas may not meet the set standards for timely access, geographic availability (time or distance), provider capacity, and service composition and may be classified as “conditional pass” under findings, which means it did not fully comply with the standard but is temporarily acceptable.

#### **Data Attributes and Definitions:**

<b>Variable</b>	<b>Definition</b>	<b>Data type</b>	<b>Outliers</b>	<b>Unknown Values</b>
County	County of network adequacy compliance data	Categorical	None	None
Region	Region of network adequacy compliance data.	Categorical	None	None
Fiscal year	Fiscal year of network adequacy compliance data	Continuous	None	None
Original plan type	The behavioral health delivery system whose network adequacy is being assessed.	Categorical	None	None

Base plan	Same as original plan type (SMHS = MHP and SUDS = DMC-ODS)	Categorical	None	None
Data type	Dimension of behavioral health network adequacy being evaluated.	Categorical	None	None
Compliance Area	Regulatory evaluation category that represents the final determination of whether a health plan meets the required access standards based on results from the other adequacy measures.	Categorical	None	None
Full Compliance Name	Identifies the specific regulatory requirement or standard being evaluated within a compliance area.	Categorical	None	None
Service Type	Type of service being administered (outpatient, non-psychiatry, psychiatry, residential)	Categorical	None	24%
Urgency Type	Whether the case required urgent care or not.	Categorical	None	67%
Follow up	Measures whether a behavioral health plan has taken required action after an issue, change, or conditional finding was identified, and if those findings were reviewed.	Categorical	None	96%
Beneficiary	Whether the patient was categorized as youth (< 21) or adult (21+).	Categorical	None	23%
Beneficiary age	Age range of beneficiary (0 - 20 or 21+)	Categorical	None	23%
Finding	Records the outcome of the evaluation for a specific requirement. Indicates how the plan or county performed on the standard identified by data type and compliance name.	Categorical	None	None
Total FTE's required	Total count of full-time equivalent employees an organization has. Calculated by combining full time staff with part time staff hours. A company must offer health insurance coverage under the ACA if it has 50 or more FTE's. Refers to health care providers within the beneficiaries network.	Continuous		96%
Total FTE's Reported	Converts total number of hours worked by employees into equivalent number of full time employees. Refers to health care providers within the beneficiaries network.	Continuous		96%

Number of providers	Number health providers a plan has available to serve members in a specific county.	Continuous		97%
Expected Utilization	Measures the anticipated demand for health services among beneficiaries in a specific county	Continuous		98%
Request to First Encounter Appointment Offer Date Percentage	Measures how quickly beneficiaries are offered an appointment after requesting care, expressed as a percentage that meets the required standard.	continuous		72%
Description (text)	Explains the finding	Categorical		90%
Alternative Access Standards (AAS)	Measures whether a health plan is using and has approval to use an alternative way of providing access to health services when standard network adequacy requirements cannot be met.	Categorical		99%

#### Notes:

For original plan type, MHP and DMC-ODS refer to two distinct Medi-Cal delivery systems which provide different services and are governed by different rules.

- MHP covers mental health services such as inpatient and outpatient mental health care, psychiatric services, therapy and counseling, and crisis intervention.
- DMC-ODS covers substance use disorder services such as outpatient treatment, residential treatment, and opioid treatment programs.

#### **Data Cleaning:**

Added “census\_designation” column which classifies if a county is considered an urban or rural county. Deleted integration column, zip code column, and age label. There were no values in the entire integration column, and the age label column is redundant. Next 17 duplicate rows were deleted. Four outliers were detected in that Los Angeles County had a significantly higher number of total FTE’s reported and total FTEs required as well as expected utilization, and providers per county compared to other counties. Since Los Angeles County is the most populated county in California and in the entire United States as a matter of fact, this data is kept in for analysis. There was one error in this dataset as Fresno and Santa Cruz County had 0 FTEs reported. This data may have been unavailable, but it is unknown why these urban counties have 0 reported FTEs. After data cleaning, the dataset is left with 6,115 rows and 22 columns.

## Descriptive Statistics

Mean and median measures per county.

	Total FTE Reported	Total FTE Required	Number of Providers	Expected Utilization
Mean	405.2	284.9	54.4	4,909.4
Standard_dev	955.6	659.1	72.37	6,695
Median	134	83	40	3,789
Max	6,923	4,641	411	37,934
Min	0	0	10	300

## Exploratory Data Analysis:

The counties that have the top 5 conditional pass counts are Inyo, Trinity, Fresno, Stanislaus, and Yolo Counties. These Counties have a high count of standards that are not fully met but are accepted temporarily, or have another standard that makes up for other standards that are not met.

	County_Name	Census_Designation	total_conditional_pass
1	Inyo	Rural	50
2	Trinity	Rural	42
3	Fresno	Urban	41
4	Stanislaus	Urban	40
5	Yolo	Urban	39

## **Why does Inyo County have the highest count of total conditional pass?**

All 9 compliance areas for Inyo County have a pass percentage that is below 60%. Furthermore, 0% of grievances & appeals, mandatory provider types, proper contract validation, and significant change met adequacy standards. This means that there is an insufficient amount of behavioral health services available, an insufficient number of contracted providers within the network, and behavioral healthcare plans are unable to handle change when there is a major network change. Moreover, the MHP plan has a high count of conditional pass meaning that this plan that covers mental health services does not fully meet adequacy standards. Lastly, all service types (psychiatry, non-psychiatry, and outpatient) have a pass rate that is no more than 50%, so Inyo County does not have sufficient access to mental health services. These insights apply to other rural counties that have a high count of conditional pass findings.

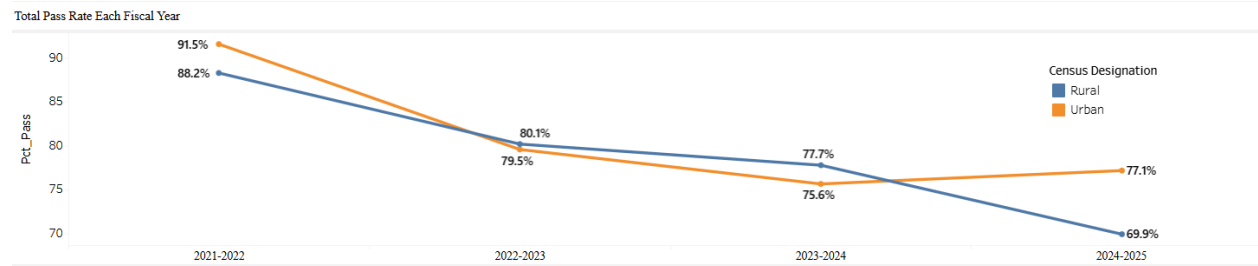
	Original_Plan_Type	count
1	MHP	70
2	DMC-ODS	19

	Service_Type	total_cases	Pass_cases	percent_pass
1	Outpatient	16	8	50.000000000000
2	Psychiatry	30	12	40.000000000000
3	Non-Psychiatry	14	3	21.430000000000



	Compliance_Area	total_cases	(No column name)	pass_pct
1	Grievances & Appeals	2	0	0.000000000000
2	Mandatory Provider Types	2	0	0.000000000000
3	Provider Contract Validation	4	0	0.000000000000
4	Significant Change	1	0	0.000000000000
5	Timely Access	28	6	21.430000000000
6	Time or Distance	16	8	50.000000000000
7	Continuity of Care	2	1	50.000000000000
8	Capacity and Composition	16	9	56.250000000000
9	Language Assistance Capabilities	7	4	57.140000000000

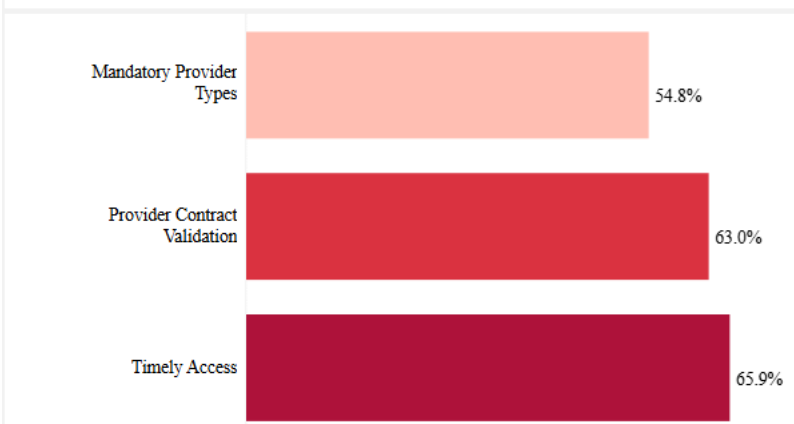
California's Behavioral Health Network has consistently gotten worse over time in both rural and urban regions.



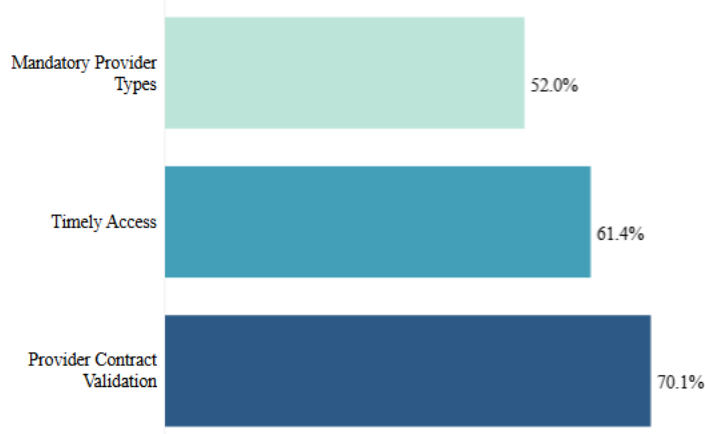
Although it is starting to plateau and slightly rebound in urban areas, the behavioral health network adequacy continues to worsen in rural areas. 88.2% of behavioral health adequacy standards were met in rural counties in the fiscal year 2021 – 2022 and as of 2024 – 2025, only 69.9% of behavioral health standards were met in rural counties. This trend highlights the occurrence of hospitals operating at a loss in rural areas and an insufficient number of health providers as only one health network may dominate an entire region, leading to longer wait times and a higher cost of treatment.

Overall, the bottom 3 compliance areas that have the lowest percentage of adequacy standards met in both rural and urban areas are mandatory provider types, timely access, and proper contract validation.

Bottom 3 Compliance Areas In Rural Counties by Pass Rate



Bottom 3 Compliance Areas In Urban Counties by Pass Rate



Statewide, there are long wait times for appointments as only 61.4 and 65.9 percent of timely access standards were met in urban counties and rural counties respectively. This highlights the fact that there is an insufficient number of providers to meet demand across California.

Interestingly, only 52% of urban counties met the standard for mandatory provider types which is slightly lower than rural counties at 54%. Mandatory provider types are not just the overall count of providers, but the kinds of behavioral health providers beneficiaries have access to, ensuring they have access to a full range of behavioral health services. Statewide, many Californians do not have access to the full range of behavioral health services which is why mandatory provider types have a low percentage of counties meeting adequacy standards. Proper contract validation is a big problem in rural counties and less of a problem in urban counties. Having a sufficient number of contracted behavioral health providers is becoming increasingly problematic in rural counties because hospitals are operating at a loss and losing staff at the same time. Furthermore, rural counties have a lower population density and a limited number of behavioral health treatment facilities which is another reason for rural counties to only meet the standard for proper contract validation 63% of the time.

### **Data Modeling:**

For this dataset, a random forest model will be used to predict the finding (pass or conditional pass) based on the input variables. A random forest model uses multiple decision trees to make predictions. Since random forest models use multiple decision trees to make a prediction, there is a lower chance that the model overfits. Furthermore, the California Behavioral Health Network Adequacy Standards dataset has a lot of categorical variables, so a random forest model would work well with this dataset as random forest models work well with categorical data.

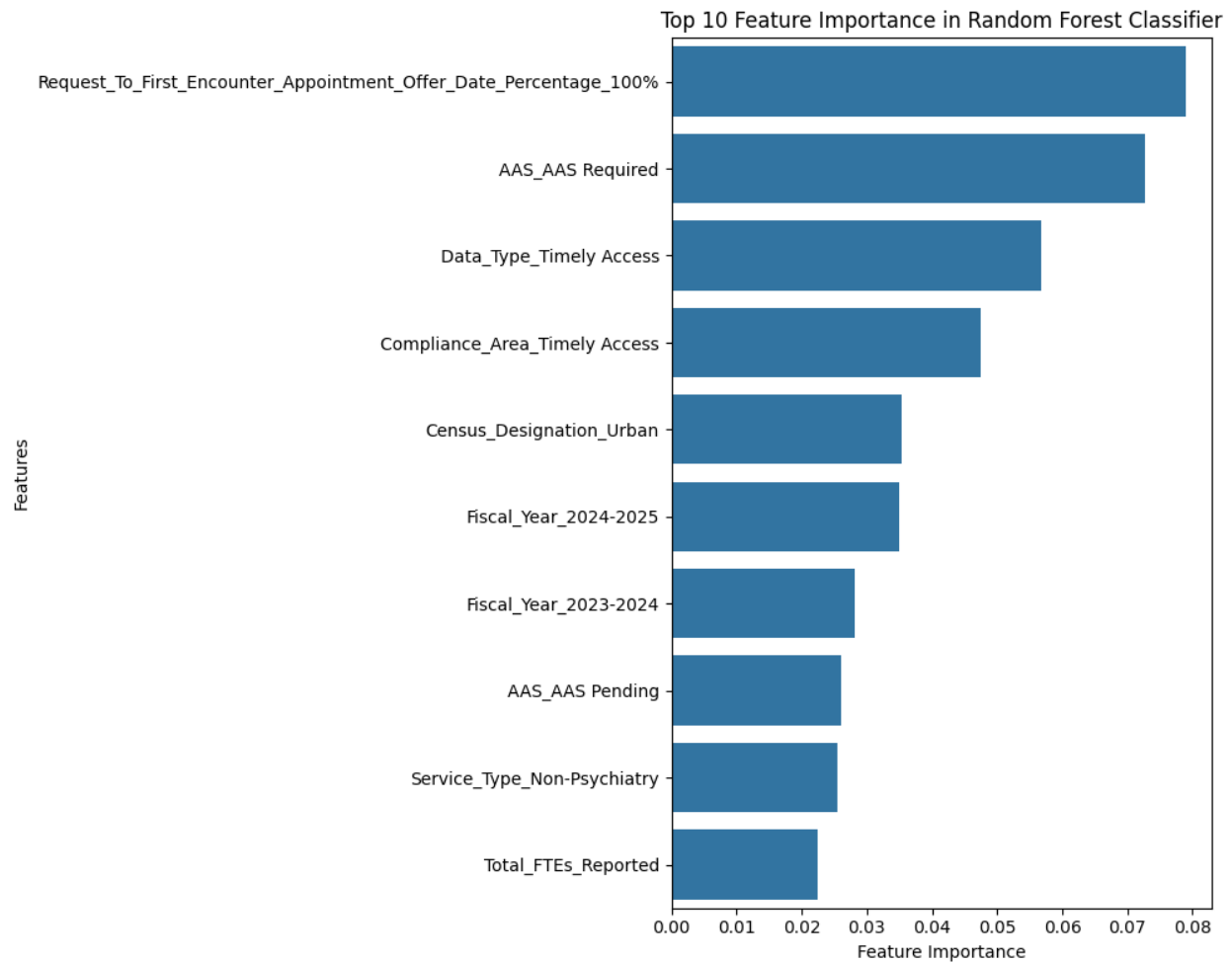
The model used an 80/20 train/test split meaning 80% of the data was used for training and the remaining 20% was used for testing on unseen data. This test split minimizes the risk of

overfitting without sacrificing the model's accuracy. The number of estimators was set to 100 meaning there were a total of 100 decision trees in the random forest model. A higher number of trees results in greater accuracy up to a certain point before there are diminishing returns.

Random\_state = 42 ensures that the test results are reproducible as setting the random state to a specific integer guarantees that the exact same sequence of random numbers are generated each time. After experimenting with max\_features, max\_features was set to "sqrt". This is the number of features to consider at each split and it increases the model's accuracy by controlling randomness. Other parameters that were adjusted were "min samples split" and "min samples leaf". Min\_samples\_split was set to 20. This means that there are a minimum of 20 samples needed to split a node, and it increases the model's accuracy by preventing the model from learning from overly specific, non-generalizable patterns which leads to overfitting.

Min\_samples\_leaf was set to 2. This means that there are a minimum of two samples required at each leaf node. This increases the model's accuracy by avoiding single sample leaves which may cause overfitting.

According to the random forest model, the attribute that had the biggest influence on whether a row received a "pass" finding or "conditional pass" finding was request to first encounter appointment offer date = 100% followed by AAS required. The model had an accuracy score of 86.2%, so it is an overall reliable model. Furthermore, the model had an average precision score of 0.84 and recall score of 0.71. This means that the model correctly predicted positive instances (pass) 84% of the time and it identified true positive instances 71% of the time. A higher precision score means that the model is more likely to predict the "conditional pass" than "pass" and have more false negatives than false positives. In the context of this dataset, it may be more beneficial for there to be a higher number of false negatives as it highlights the problem that many counties across California do not adequately meet the standards for behavioral health treatment. If there were more false positives, then the problems associated with California's behavioral health adequacy standards may go unnoticed. The random forest model predicted the 10 most important attributes in regard to whether a county met the adequacy standards, so policy makers know which standards to target when it comes to improving behavioral health care across the state.



### **Findings:**

After researching the problems related to California’s behavioral health care adequacy standards, the main findings are that there are long wait times for appointments statewide, many counties do not have an adequate number of providers for all behavioral health services, and an insufficient number of contracted behavioral healthcare providers, especially in rural counties. Interestingly, urban and rural counties had the same overall pass percentage for adequacy standards met, although the bottom 5 counties in regard to pass percentage were all rural counties. This ties to the statewide problem that there is an insufficient number of behavioral health care providers and healthcare in the state of California has become increasingly expensive causing many California’s to delay or skip getting treatment. Although there may be more providers in urban counties, the demand for healthcare providers is even greater in urban areas and the inability to afford health insurance is not just a problem exclusive to rural counties. Furthermore, having funding for healthcare significantly reduced will compound the existing problems mentioned above. The total percentage of “pass” findings has consistently decreased each fiscal year in both rural and urban counties highlighting the problem that access to affordable and timely treatment related to behavioral and mental health is becoming out of reach for many Californians. Timely

treatment is one of the main influences of whether a specific county adequately meets behavioral health care standards according to the random forest model. When requested appointments are scheduled on time, there is an 80% chance that the specific instance will receive a passing score for meeting adequacy standards. Therefore, decreasing wait times for requested appointments will increase the percentage of “pass” findings but attributes that increase wait times for appointments must be further evaluated. Similarly to timely access standards, time or distance to behavioral health treatment is a concern in rural counties.

In cases where alternate access standards (AAS) are required then the instance will be marked as “conditional pass” because adequacy standards are not being met and it must provide alternate access to health services. When AAS is approved then the instance is likely to be marked as “pass”. This is because it has approval to use an alternative access method that does sufficiently meet adequacy standards. Since rural counties have a low population density, alternate time or distance standards may be proposed since it is unrealistic to have a high count of behavioral health treatment facilities in counties that are sparsely populated. In cases where time or distance standards are not met, standards could be met with a 30 mile/60 minute standard or a 60 mile/90-minute standard for time or distance and receive a “conditional pass” grade. However, since there are fewer behavioral treatment facilities in rural counties, there is less competition and one network may dominate an entire region causing prices to increase significantly. Therefore, treatment options and behavioral health care should be more closely regulated in rural areas so insurance companies cannot charge premiums that are significantly higher than what they would be in areas with more competition.

Another trend is that youth (beneficiaries under the age of 21) score lower than adults for adequacy standards met in both urban and rural counties. Youth also score lower than adults in all six service types, especially residential treatment. There may be an insufficient number of providers to treat youth patients because capacity and composition is met for youth patients only 79% of the time and 90% of the time for adult patients. Furthermore, proper contract validation is met only 33% of the time for patients under the age of 21 and 86% of the time for adult patients. This means that there is an insufficient number of in-network providers who are contracted and able to provide services to their youth beneficiaries. This highlights the need to provide more resources toward helping teens and young adults with mental health problems and substance abuse problems. Finding providers that can treat youth patients and providing

	Beneficiary_Age	Compliance_Area	total_cases	pass_cases	percent_pass
1	Adult	Capacity and Composition	708	634	89.550000000000
2	Youth	Capacity and Composition	708	557	78.670000000000
3	Youth	Provider Contract Validation	63	21	33.330000000000
4	Adult	Provider Contract Validation	63	54	85.710000000000
5	Adult	Time or Distance	614	569	92.670000000000
6	Youth	Time or Distance	614	551	89.740000000000
7	Youth	Timely Access	985	624	63.350000000000
8	Adult	Timely Access	985	618	62.740000000000

affordable treatment options for youth patients will improve the pass rate for adequacy standards met for this population.

Solutions for increasing the number of behavioral health care providers are underway as a movement called “payment for placements” has seven chapters at California Universities (Echelman, 2025). This movement is made up of social work students across the country that are advocating for graduate students to be paid during their required internship hours (Echelman, 2025). Politicians have already started addressing this issue as “in 2021, California Governor Gavin Newsom launched a new initiative pumping \$4.4 billion into youth behavioral health, including \$700 million to train the next generation of providers” (Echelman, 2025). It is clear that policy makers have realized this is a significant issue and are attempting to make improvements in increasing the number of behavioral health care providers in California. Another proposed solution for increasing the number of behavioral health providers is by making it easier for out-of-state therapists to become licensed in California (Echelman, 2025). These proposed solutions may be effective in improving adequacy standards for capacity and composition, mandatory provider types, proper contract validation, as well as timely access if they can increase the number of behavioral health providers. The next step is to find solutions for the rising health care costs in which increasing the number of behavioral health providers is a good start for making behavioral health care more affordable.

### **Recommendations For Future Analysis**

It would be insightful to know how adequacy standards compare across different genders as well as across different races and ethnicities. Moreover, it would be helpful to know the median household income for each county as income may affect whether an instance receives a “pass” finding. However, in major cities, household income varies widely so it may not be a reliable attribute. Having outcomes for each gender will provide useful insights because analysts can see if women have better access to mental health care, or if they are more likely to reach out and utilize behavioral health services more often than men. It would also be helpful to know if there is a difference in adequacy standards for males and females across each service type to see if specific service types are more accessible to males or females.

Having data for different races and ethnicities can also be useful in identifying inequities across behavioral health care in California, especially when it comes to certain compliance areas. Compliance areas such as language assistance capabilities would be one of the best areas to assess across different ethnic groups to see if behavioral health providers can adequately communicate and effectively treat patients who do not speak fluent English. California is a very diverse state, so having a race or ethnicity attribute would be especially helpful in finding inequalities in California’s behavioral health care. This relates to the next area of further research which is median household income which can measure wealth inequality when it comes to seeking behavioral health treatment.

Although median household income per county may not be a reliable attribute, comparing the percentage of pass findings and conditional pass findings across ranges of annual income can be insightful. This will show if Medi-Cal is effective or not effective in delivering behavioral health treatment for people in low-income brackets. This could also allow analysts to see if a higher percentage of adequacy standards for lower income individuals differ between urban and rural counties. However, rural counties may have a lower cost of living than cities and suburban areas meaning spending power is different across rural and urban counties which is another reason why median household income may not be a reliable attribute for this dataset. In conclusion, areas for further analysis include comparing adequacy standards across both genders and different ethnicities to see which groups of people are underserved when it comes to access to behavioral health care.

## References

- Chen, L. J. (2025). The Problem With California's Plan to Contain Health Care Costs. *JAMA Health Forum*, 6(7), e253383–e253383.  
<https://doi.org/10.1001/jamahealthforum.2025.3383>
- Coyle, C. (2024, February 15). *Rural Health Care Access Is Statewide Concern* [Review of *Rural Health Care Access Is Statewide Concern*]. California Hospital Association.  
<https://calhospital.org/rural-health-care-access-is-statewide-concern/>
- Echelman, A. (2025, May 7). *Many Californians can't get mental health help. Is it too hard to become a therapist?* CalMatters. <https://calmatters.org/health/mental-health/2025/05/mental-health-providers-california/>
- Nanguneri, S., & Momin, A. (2024, September 4). *Health care in California: How the state made almost everyone eligible for coverage*. CalMatters; CalMatters.  
<https://calmatters.org/explainers/california-health-care-coverage/>
- Stemikis, K., & Teare, C. (2025, October 13). *The 25% Problem: Why Health Care Is So Expensive (And What We Can Do About It)* [Review of *The 25% Problem: Why Health Care Is So Expensive (And What We Can Do About It)*]. California Healthcare Foundation. <https://www.chcf.org/resource/why-health-care-is-so-expensive/>
- The State of Health Coverage in California: Progress, Disparities, and Policy Threats*. (2025). California Budget & Policy Center. <https://calbudgetcenter.org/resources/california-health-coverage-progress-disparities-and-policy-threats/>