Psychiatric and Substance Use Disorder Bed Capacity, Need, and Shortage Estimates in California

Merced, San Joaquin, and Stanislaus Counties

Summary

Psychiatric and substance use disorder (SUD) treatment beds are essential infrastructure for managing the clinical and psychosocial problems associated with behavioral health disorders. The levels of care for psychiatric beds range from acute psychiatric hospitals to community residential facilities. SUD treatment beds range from facilities offering short-term withdrawal-management services to others offering longer-duration residential detoxification services. Patient placement into different settings depends on the facility’s alignment with patient needs. For example, some patients may have high-acuity, short-term needs; other patients may require longer-term accommodation and recurrent, episodic care.

General assessment of California and other regions of the United States demarcated need for additional beds in psychiatric and SUD treatment facilities. This report provides estimates of psychiatric inpatient and SUD treatment bed capacity and need in Merced, San Joaquin, and Stanislaus Counties. The analysis suggests that these counties have a shortage of psychiatric inpatient beds for adults, but it is difficult to determine whether this shortage is among either acute or subacute beds.

The three counties will need approximately 5 percent more adult psychiatric beds through 2026. The three counties had a modest surplus of SUD treatment beds for adults. However, there was a deficit of SUD treatment beds for children and adolescents. Several populations were disproportionately hard to place in psychiatric and SUD treatment beds. High-need patients in Merced, San Joaquin, and Stanislaus Counties may be underserved and in need of new facilities with beds that specifically address their needs.

KEY FINDINGS

- Merced, San Joaquin, and Stanislaus Counties have a shortage of psychiatric inpatient beds for adults, but it is difficult to determine whether this shortage is among either acute or subacute beds.
- The three counties will need approximately 5 percent more adult psychiatric beds through 2026.
- The three counties had a modest surplus of SUD treatment beds for adults. However, there was a deficit of SUD treatment beds for children and adolescents.
- Several populations were disproportionately hard to place in psychiatric and SUD treatment beds.
- High-need patients in Merced, San Joaquin, and Stanislaus Counties may be underserved and in need of new facilities with beds that specifically address their needs.
behavioral health beds, but the extent to which beds are available and accessible at each level of care is unknown. The northern San Joaquin Valley counties of Merced, San Joaquin, and Stanislaus have sought to quantify shortages in psychiatric and SUD treatment beds, in an effort to further California’s investment to expand the behavioral health care continuum and enhance infrastructure capacity. The current work builds off of two previous reports: first, a report that examined California’s statewide and regional adult psychiatric bed needs, and, second, a report that examined the specific adult and adolescent psychiatric and SUD bed need in Sacramento County. This report expands the service area under study to include multiple California counties within a geographic region.

This report estimated inpatient and residential psychiatric and SUD treatment bed capacity, need, and shortages at specific levels of care across Merced, San Joaquin, and Stanislaus Counties. Psychiatric beds were evaluated at three levels of care: acute, subacute, and community residential services. Acute care is directed toward stabilizing patients with the highest-acuity needs, typically provided in the shorter term (days to weeks). Subacute care is directed toward those with moderate- to high-acuity needs for a longer duration (multiple months). Community residential services are intended to address lower-acuity and longer-term care (often multiple years) that is focused on patient recovery. For SUD treatment services, we defined service categories based on the American Society of Addiction Medicine (ASAM) clinical guidelines. Specifically, we used the definitions for residential detoxification services (ASAM level 3.2); residential long-term treatment, which is typically more than 30 days (ASAM level 3.3); and residential short-term treatment, which is typically 30 days or fewer (ASAM level 3.5).

**Approach**

The geographic area under study included Merced, San Joaquin, and Stanislaus Counties, which we examined at the aggregate level. The populations of interest within these counties consisted of both adults and children. We aimed to conduct survey interviews with administrators at every psychiatric and SUD treatment facility in these counties that provided inpatient or residential services.

To estimate bed capacity, we combined several data sets from state agencies that are responsible for licensure of psychiatric or SUD treatment beds. Additionally, stakeholders from the counties’ Departments of Health Services provided up-to-date feedback to refine the list of closed and in-service facilities. The research team supplemented this information by administering a phone-based survey of all psychiatric and SUD treatment facilities across Merced, San Joaquin, and Stanislaus Counties to collect data on bed occupancy rates, waiting list volume, and requested transfers to higher and lower levels of care.

We triangulated estimates from several approaches to estimate psychiatric and SUD treatment bed need. First, we used the survey data to compute the number of beds required—at each level of care—to reduce bed occupancy rates in the region to 85 percent (a standard ceiling), as well as accommodate waiting list volume and requested transfers. Second, our research team conducted an environmental scan of both the academic and gray literature to identify normative and descriptive benchmarks for psychiatric and SUD treatment bed capacity and need. Using both sources of data, we were able to compare the bottom-up estimates of need, based on observed outcomes at facilities in the three counties, with the top-down estimates of need based on thresholds outlined by experts or otherwise established in various jurisdictions at local, national, and international levels.

Additionally, we conducted online forums with local stakeholders to get their perspectives on bed shortages in the region.

### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>ASAM</td>
<td>American Society of Addiction Medicine</td>
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<tr>
<td>LOCUS</td>
<td>Level of Care Utilization System</td>
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<tr>
<td>N-MHSS</td>
<td>National Mental Health Services Survey</td>
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<tr>
<td>SPD</td>
<td>serious psychological distress</td>
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<td>SUD</td>
<td>substance use disorder</td>
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<td>WM</td>
<td>withdrawal management</td>
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Key Findings

Psychiatric Bed Capacity
We estimated that Merced, San Joaquin, and Stanislaus Counties have a total of 186 adult beds at the acute level (15.7 per 100,000 adults) and 330 adult beds at the subacute level (27.8 per 100,000). At the community residential level, we estimated that the counties have a total of 467 adult beds (39.4 per 100,000). For children, we found 219 psychiatric beds (49.5 per 100,000) in total: 26 beds at the acute level (5.9 per 100,000 children), 12 beds at the subacute level (2.7 per 100,000 children), and 181 at the community residential level (40.9 per 100,000).

SUD Treatment Bed Capacity
We identified 392 adult beds in Merced, San Joaquin, and Stanislaus Counties. This included 83 available for clinically managed high-intensity residential services (7.0 per 100,000 adults; ASAM level 3.5), 210 available for clinically managed moderate- and low-intensity residential services (17.7 per 100,000 adults; ASAM level 3.3), and 51 available for clinically managed residential detoxification services (4.3 per 100,000 adults; ASAM level 3.2). We also estimated that there are zero child and adolescent SUD treatment beds.

Psychiatric Bed Need
From the facility survey responses, we estimated that Merced, San Joaquin, and Stanislaus Counties require 156 adult acute inpatient psychiatric beds (13.1 per 100,000 adults) and 505 at the subacute level (42.5 per 100,000 adults). At the community residential level, we estimated a need of 354 beds (29.9 per 100,000 adults). From our review of the literature, we estimated a need of 308 adult acute inpatient psychiatric beds (26.0 per 100,000 adults), 291 subacute beds (24.6 per 100,000 adults), and 265 community residential beds (22.3 per 100,000 adults). Although we did not have a sufficient number of responses to estimate child psychiatric bed need, our review of descriptive benchmarks of bed capacity indicated a range from 36 to 41 acute beds (8.1 to 9.2 per 100,000 children and adolescents), 34 to 39 subacute beds (7.7 to 8.7 per 100,000), and 116 to 196 community residential beds per 100,000 (26.3 to 44.3 per 100,000).

SUD Bed Need
From the facility survey responses, we estimated that Merced, San Joaquin, and Stanislaus Counties require between 325 to 362 adult SUD treatment beds (27.4 to 30.5 per 100,000 adults). There was greater demand for higher-intensity services: Beds for ASAM levels 3.5 and 3.3 had higher occupancy rates and more requests for transfers to higher levels of care than requests for transfers to lower levels of care. Our review of the literature showed that reference benchmarks for adult SUD treatment beds were considerably higher: about 507 to 548 beds (42.7 to 46.2 per 100,000 adults). Among children- and adolescent-servicing facilities, we did not receive enough responses to directly estimate SUD treatment bed needs. However, during our review of the literature, we found reference benchmarks of 43 to 69 SUD treatment beds (9.9 to 15.6 per 100,000 children and adolescents).

Psychiatric Bed Shortage
We estimated that Merced, San Joaquin, and Stanislaus Counties have a shortage of inpatient beds, although the specific level of care experiencing the shortage varied by data source. According to our survey data, there is a shortage of 175 subacute beds and a surplus of 30 acute beds. Likewise, using our expert consensus estimates, we estimated a shortage of 122 acute beds but a surplus of 30 subacute beds. Our results for community residential beds were consistent across sources: We estimated a surplus of between 113 and 202 beds. However, because of beds occupied by clients from outside Merced, San Joaquin, and Stanislaus Counties, these estimates may underestimate the magnitude of the shortage and overestimate the magnitude of the surplus. Using statewide and international reference points for child psychiatric beds, we observed modest shortfalls of acute and subacute beds, while community residential beds ranged from a 15-bed shortfall (using statewide reference points) to a 65-bed surplus (using international reference points).

SUD Treatment Bed Shortage
We estimated that Merced, San Joaquin, and Stanislaus Counties have a shortfall of 156 adult SUD
The most difficult-to-place populations at psychiatric facilities were individuals with dementia, nonambulatory individuals, and those who required oxygen. This is 13.2 beds per 100,000 adults shy of California’s average rate of 46.2 beds per 100,000 adults. This also represents a shortfall of 115 adult SUD beds when compared with the U.S. national average (9.7 beds per 100,000 adults shy of the national average of 42.7 beds per 100,000 adults). From the facility survey responses, we estimated a modest surplus; however, this direct estimate likely underestimates the magnitude of the shortage because of beds occupied by clients from outside Merced, San Joaquin, and Stanislaus Counties and because some facilities did not accept Medi-Cal patients. Both of these factors could be contributors to our results. Among children and adolescents, we found that the California and national benchmarks indicate a shortfall of 44 to 69 SUD treatment beds (9.9 and 15.6 per 100,000 children and adolescents, respectively).

**Hard-to-Place Populations**

Overall, we found that the most difficult-to-place populations at psychiatric facilities were individuals with dementia (21 percent of facilities accepted these individuals), nonambulatory individuals (25 percent), and those who required oxygen (25 percent). The most difficult-to-place populations at SUD treatment facilities were nonambulatory individuals (25 percent), individuals with a past sex offense (30 percent), individuals with dementia (30 percent), and individuals with traumatic brain injuries (30 percent).

**Out-of-Region Residents**

For adult psychiatric facilities, we found that out-of-region residents consisted of 36 percent of patients in acute facilities, 88 percent of patients in subacute facilities, and 34 percent of patients in community residential facilities. For SUD treatment facilities, the out-of-region estimates were 20 percent of patients in ASAM level 3.5, 18 percent in ASAM level 3.3, and 0 percent in ASAM level 3.2.

**Stakeholder Perspectives**

Stakeholders reported shortages for all levels of inpatient and residential care, especially for children. Consistent with the quantitative analysis, they reported difficulties placing various populations, especially individuals with co-occurring physical health conditions.

**Recommendations**

On the basis of these findings, we offer the following recommendations:

In terms of psychiatric beds, focus on addressing the shortage of inpatient beds, especially for hard-to-place populations—including those with dementia and traumatic brain injuries. The majority of psychiatric facilities surveyed in Merced, San Joaquin, and Stanislaus Counties do not accept patients with dementia and traumatic brain injuries. From our survey data, we estimated a shortage of 175 beds at the subacute level and a surplus of 30 beds at the acute level. However, using expert consensus estimates, we estimated a surplus of 39 beds at the subacute level and a shortage of 122 acute beds. The subacute facilities also had a 25 percent waiting list volume and an 88 percent occupancy rate of those who reside outside the region, while acute facilities had a 36 percent occupancy rate from those outside the region. One potential solution to this is to increase the number of beds at these higher levels of care by expanding infrastructure. However, this could lead to an overall surplus—including of unused infrastructure—if even more patients are transfer-
able from acute or subacute care to community residential care. Merced, San Joaquin, and Stanislaus may therefore want to consider alternatives that allow the county to shift the existing distribution of beds from lower to higher levels of care.

In terms of SUD treatment beds, focus on increasing beds that are available for Merced, San Joaquin, and Stanislaus County residents who are currently hard to place—including nonambulatory individuals. We observed that more than 15 percent of SUD treatment beds are occupied by residents from outside Merced, San Joaquin, and Stanislaus Counties; 20 percent of facilities did not accept patients insured by Medi-Cal; and 80 percent of facilities did not accept patients who were nonambulatory. This indicates that, although these facilities appear to have stable bed occupancy rates and short waiting list volumes, beds at these facilities are not available to many individuals in need of services. This observation is also liable to account for the difference in the estimated need for SUD treatment beds in Merced, San Joaquin, and Stanislaus Counties based on (1) observed outcomes from survey interviews and (2) the reference benchmarks of statewide and national bed capacity. If Merced, San Joaquin, and Stanislaus Counties were to anchor on reference benchmarks (which we believe to be more appropriate), this would indicate a shortage of more than 100 SUD treatment beds for adults and another 40–60 for children and adolescents. Any additional beds would need to be designed to ensure that they reach the high-needs populations that are currently being missed.

Track outcomes of investments in bed capacity over time, including bed occupancy rates, waiting list volume, and bottlenecks that inhibit transfers to higher and lower levels of care. Should the region increase their investments in these facilities, such as by expanding the number of beds, then the counties should monitor how these expansions are associated with changes in outcomes. More-complete data that empirically examine the relationship between changes in bed capacity and outcomes would provide more-valid estimates for future assessments of whether there are shortages in bed capacity and whether expanding the number of beds could alleviate this concern.

**Introduction**

**Function and Shortfall of Psychiatric Beds**

Psychiatric beds provide a fundamental service for populations affected by mental illness, including those experiencing mental health emergencies. Psychiatric beds accommodate a diverse range of patient subpopulations across multiple settings—including acute and subacute psychiatric facilities, as well as community residential treatment centers. Their functional role varies across the behavioral health care continuum. For example, 24-hour supervised acute care for crisis stabilization over brief intervals (one to two weeks, on average) is provided at hospitals and psychiatric health facilities. In contrast, subacute facilities—such as mental health rehabilitation centers or skilled nursing facilities—offer longer-term recovery-oriented services (for months at a time) that bridge the transition into community placement. Community residential facilities provide individuals with a homelike environment that supplies ongoing clinical and rehabilitative supports over an extended length of stay that may continue for years.

Psychiatric beds attempt to meet the needs of patients who require supervised care in secure environments. However, alternate mental health response avenues also route patients to treatment without overextending limited inpatient capacity. Upstream services provided in outpatient settings have the potential to reduce inpatient occupancy through early intervention that averts escalation of mental health crises. A decrease in the strain on psychiatric bed occupancy may be achieved by diverting patients from psychiatric hospitalization to crisis outreach programs and alternative service models. For example, San Joaquin County operates four mobile crisis units that provide emergency mental health response, while Merced and Stanislaus Counties dispatch mobile crisis support teams alongside law enforcement to triage persons in mental health crisis. Use of clinical guidelines, such as the standardized Level of Care Utilization System (LOCUS), can match an individual to an appropriate level of care based on patient factors, including illness and acuity. However, a shortage of psychiatric beds can
trigger bottlenecks at the levels of care indicated by LOCUS criteria. Specifically of concern are the dynamics of hard-to-place patients, who face a disconnect between treatment needs and corresponding bed availability.

The deinstitutionalization of psychiatric services caused cascading reductions in the number of psychiatric facilities and beds throughout California. The number of psychiatric beds in California declined by nearly 30 percent between 1995 and 2016. The transition from inpatient care to community-based mental health resources introduced an imbalance in institutional capacity to manage the clinical demands of persons with more-intensive needs, which disproportionately affected persons with serious mental illness (SMI). Insufficient mental health care infrastructure leaves vulnerable persons with SMI without recourse, pushing the criminal justice system and unhoused services to act as de facto substitutes for institutionalized psychiatric care. A shortage of alternative resources also results in the “boarding” of psychiatric patients in emergency department settings.

In the tricounty region of Merced, San Joaquin, and Stanislaus, the need for inpatient psychiatric beds is particularly pronounced. A 2022 RAND Corporation report estimated that, among California regions, the need for adult psychiatric beds was greatest in northern San Joaquin Valley. For every 100,000 adult residents, the region manages an estimated 9.1 acute bed capacity, 31.8 subacute beds, and 17.4 community residential beds—an approximate total shortfall of 17.5 acute beds and 5.5 residential beds per 100,000 adults. A separate report found that, at the acute level of care, regional shortages also compound the availability of child and adolescent inpatient beds. In that study, San Joaquin, Stanislaus, and Merced did not have a stock of child and adolescent acute psychiatric inpatient beds.

Function and Shortfall of Substance Use Disorder Treatment Beds

SUD treatment facilities may provide inpatient support for patients seeking recovery from SUDs or co-occurring mental illness and SUD. Services at these facilities may include the use of medications for opioid use disorder (opioid or alcohol agonist therapeutics combined with behavioral therapy), withdrawal or maintenance management, individual and group psychological support, mutual self-help, and peer therapeutic communities. The number of California SUD treatment facilities has grown since 2017, with notable increases in both residential facilities and hospital inpatient care. Residential SUD treatment services can include intensive care and support for individuals with severe and complex SUDs. Similar to the LOCUS for patients with mental health needs, SUD treatment providers often rely on the ASAM criteria to link patients with an appropriate level of care. However, in contrast with mental health facilities that are typically licensed to provide care at a single level, a given SUD treatment facility can provide services across multiple levels of care. Therefore, an adequate SUD treatment care continuum landscape implies that there are sufficient SUD treatment beds within facilities that provide a diverse range and intensity of services. It also implies that this system is extended to outpatient and community-based supports, such as counselors, social workers, peer supports, and physicians.

In many parts of California, SUD treatment beds are in short supply. Overall, California had 1,797 SUD treatment facilities in 2019, with a total capacity of 12,955 residential beds (roughly 33 beds per 100,000 individuals). However, there is wide geographic dispersion: 22 counties do not have any residential SUD treatment facilities, and 45 counties lack any residential beds for youth. A 2022 report by the California Health Care Foundation found that, on average, there were 3.5 residential detoxification beds (ASAM levels 3.2-WM [withdrawal management]) and 5.8 residential treatment (ASAM levels 3.1, 3.3, 3.5, and 3.2-WM) beds per 10,000 adults in California. This is an increase from 2015, when the state had roughly 5.4 beds per 10,000 adults. The San Joaquin Valley (Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties) collectively maintained 2.2 residential detoxification beds per 10,000 and 4.2 residential treatment beds per 10,000, according to 2021 Department of Health Care Services data. Stanislaus is the only county in the San Joaquin Valley region with hospital chemical dependency beds.
recovery beds for inpatient medical management. As of 2021, Merced County was relying on emergency departments for detoxification services because of programmatic issues in staffing withdrawal management facilities. Stanislaus, San Joaquin, and Merced are among the 34 California counties that have at least one licensed narcotic treatment program to provide opioid medication assisted treatment, detoxification services, or maintenance treatment services. Predominantly, SUD inpatient treatment programs service the adult population; there are disparately fewer youth treatment programs, which carry additional requirements for staffing ratios and longer lengths of stay.

Measuring Need for Psychiatric and SUD Treatment Beds

Estimating the psychiatric and SUD treatment beds need for Merced, San Joaquin, and Stanislaus Counties can provide decisionmakers with necessary information to address potential shortages at various levels of care, allowing them to prioritize investments in behavioral health infrastructure.

Quantifying need for psychiatric and SUD treatment beds is difficult. To calculate the need, there is no singular gold-standard approach, and local, regional, and state health systems are different. However, we have identified at least three common orientations for considering this problem:

- **Observed outcomes**: Estimation using an observed-outcomes approach examines variation in bed capacity throughout a geographic area to assess how the variation corresponds to an array of outcomes. Observed wait times, bed occupancy rates, remission rates, length of stay, and emergency department boarding are all examples of possible outcomes. The expectation is that geographic areas with higher bed capacity will exhibit improved outcomes. This result can be used to model the effects of expansion in geographic areas with lower bed capacity.
- **Expert consensus**: Deliberative consensus can be used to aid content experts to arrive at estimates of psychiatric and SUD treatment need. In a prior report, several authors of this report convened a technical expert panel that proposed a range of 25–30 acute psychiatric beds per 100,000 adults and 20–30 subacute beds per 100,000 adults. The result of this approach corresponds with other findings from similar exercises, both within the United States and internationally. Fewer studies contain estimates for children and adolescent psychiatric beds, as well as SUD treatment beds.
- **Reference approach**: The reference approach estimates bed need using the assumption that other jurisdictions (or countries) with similar health systems and demographic characteristics will need a similar number of beds. With this approach, alternative jurisdictions can be used as a reference point to determine the comparative level of infrastructure within a region of interest. Both the World Health Organization and the Organisation for Economic Co-operation and Development have employed this approach to engage in comparative health systems analysis.

In a previous publication, several authors of this report advocated for a synergistic approach using permutations of the above strategies. Subsequently, we produced an analysis of psychiatric and SUD beds in Sacramento County that triangulated all three approaches, depending on the availability and quality of information. To augment the observed outcomes approach, we also quantified beds for hard-to-place populations—such as individuals with comorbid dementia or patients insured through Medi-Cal—as these can provide greater insight into barriers and scarcities for patient placement. As psychiatric beds are not interchangeable within and between service levels, local governments need situational awareness into how the needs of the community compare with service provision. Further, because of their geographic proximity, Merced, San Joaquin, and Stanislaus Counties can collaborate on behavioral health services to improve coordination of infrastructure development and programmatic planning.
State and Local Investments in Behavioral Health Infrastructure

California has made a concerted commitment to expanding the behavioral health infrastructure of the state. This includes bed capacity. Since 2004, the California Mental Health Services Act (MHSA) has allocated tax dollars to California counties to contribute to the enhancement of infrastructure, as well as preventative and treatment services. California recently authorized the broader application of MHSA funds to include treatment and coordination of services for co-occurring SUD and mental health disorders, building toward a more integrated behavioral health care system. Merced, San Joaquin, and Stanislaus each receive MHSA program funding and have apportioned funds to expand mental health beds. The California Department of Health and Human Services in 2020 launched the Behavioral Health Task Force to advise Governor Gavin Newsom on efforts to reform behavioral health services throughout the state and to address mental health and SUD needs. The California State Assembly also passed legislation to fortify mental health parity (Senate Bill 855) and counter residential facility closures (Assembly Bill 2377). Effective as of 2021, Senate Bill 855 includes a requirement for commercial insurance plans to provide medically necessary treatments for all mental health conditions and SUDs, while Assembly Bill 2377 authorizes local governments to purchase psychiatric facilities to prevent closures. Additionally, the California Behavioral Health Continuum Infrastructure Program introduced $2.2 billion in grant funding to invest in acquisition or renovation of behavioral health facilities and mobile crises response. Through this program, Stanislaus County was awarded $33.3 million to enhance the provision of behavioral health resources and address service gaps among vulnerable populations.

Purpose of This Report

In this report, we provide an estimate of current psychiatric and SUD treatment bed capacity in Merced, San Joaquin, and Stanislaus Counties. We estimate the potential shortfall or surplus by comparing the measured bed needs with current bed estimates. Computations are performed separately for children and adults to create independent assessments for infrastructure that account for the separation between inpatient bed capacity that services both populations. We then project bed capacity needs over the next five years based on evolving demographic trends in the broader northern San Joaquin Valley region of the state. In addition, we engaged stakeholders in the counties to obtain their perspectives on issues related to bed capacity in the region.

We develop a series of recommendations that are based on the combined results. The recommendations include discussions on the expansion of behavioral health bed capacity to address existing gaps, and the recommendations are situated in the context of ongoing legislative efforts that establish a comprehensive continuum of care for behavioral health problems.

Methods

Population and Scope

Psychiatric Beds

All adults and children in the three counties were our population of interest. We assigned all locations that we identified as potentially having psychiatric beds in the counties within our scope of work (N = 305) to three levels of care, corresponding to a conceptual model established by the County Behavioral Health Directors Association of California. The levels of care were defined based on two axes: first, the acuity of needs being attended to, ranging from emergent crises to nonemergent, ongoing supports, and, second, the average length of stay, ranging from short term (days to weeks) to long term (months to years).

The first level of care is acute. Acute care is highly structured, medically monitored continuous inpatient care for individuals at heightened risk of harm to themselves or others, or who are otherwise unable to care for themselves. The second level of care is subacute. Subacute care may include 24/7 inpatient care that includes specialized programming in a controlled environment with a significant degree of supervision but with less intensive medical monitoring and intervention than acute care. Finally, the third level of care is residential. Residential care
is represented by nonhospital programs in which individuals live on the premises of a facility and are provided with consistent programming to promote interpersonal and independent living skills. Staff are also present 24/7. In Table 1, we include details for the types of facilities contained within each of the three levels of care. This information is based on facility licensure information. It is important to report that acute care included general hospitals with psychiatric wards. Acute care is not restricted to facilities that circumscribed their services to psychiatric patients.

**SUD Treatment Beds**

We classified the levels of care for SUD treatment facilities in the three counties (N = 12) according to the forms of treatment offered at the facility as opposed to the type of facility. The different forms of treatment ranged from long-term to more-rapid detoxification services. The levels of care were based on the ASAM’s guidelines. It is also important to note that the three levels of care that we use in this report are conceptually very different from those described among psychiatric facilities. Specifically, the three levels of care for SUD treatment services are ASAM level 3 inpatient and residential services. In addition, any given facility may provide several levels of service (e.g., ASAM levels 3.1, 3.2, 3.5, and 3.7).

Regarding SUD treatment facilities, the highest treatment level of care was high-intensity residential treatment (ASAM level 3.5). The intermediate level of care was medium- to low-intensity residential treatment (ASAM level 3.3). Finally, the lowest level of care was for facilities offering residential detoxification (ASAM level 3.2.D). Table 2 contains the SUD treatment levels used in this study. ASAM level 2 (intensive outpatient or partial hospitalization, which does not involve overnight placements) and ASAM level 4 (intensive inpatient) were both excluded from this analysis.

There were several categories of beds that were outside of scope: beds for permanent supportive housing, beds in county jails, and beds in emergency

**TABLE 1**

Levels of Care and Corresponding Psychiatric Bed Infrastructure

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<th>Level of Care</th>
<th>Types of Facilities Included</th>
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<tr>
<td>Acute (level 3)</td>
<td>Acute psychiatric hospitals; psychiatric health facilities; general acute care hospitals with psychiatric wards; acute beds at state hospitals; crisis residential facilities</td>
</tr>
<tr>
<td>Subacute (level 2)</td>
<td>General or specialized subacute facilities; mental health rehabilitation centers; skilled nursing facilities with specialized treatment programs; institutions for mental disease; subacute beds at state hospitals</td>
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<tr>
<td>Residential (level 1)</td>
<td>Adult residential treatment facilities; enhanced or augmented “board and care” facilities; social rehabilitation facilities</td>
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</table>

NOTE: For a definition of psychiatric health facilities, see California Department of Health Care Services, “Psychiatric Health Facilities,” webpage, last updated May 4, 2021c. For a definition of institutions for mental disease, see California Department of Health Care Services, “Institution for Mental Diseases List. California Department of Health Care Services,” webpage, last updated August 19, 2021e.

**TABLE 2**

Treatment Levels Corresponding to SUD Treatment Facilities

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<th>Treatment Level</th>
<th>Types of Treatment Included</th>
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<tr>
<td>Residential short-term treatment (ASAM level 3.5)</td>
<td>Clinically managed high-intensity residential treatment, typically 30 days or less, similar to ASAM level 3.5</td>
</tr>
<tr>
<td>Residential long-term treatment (ASAM level 3.3)</td>
<td>Clinically managed medium- or low-intensity residential treatment, typically more than 30 days, similar to ASAM level 3.3</td>
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<tr>
<td>Residential detoxification (ASAM level 3.2.D)</td>
<td>Clinically managed residential detoxification or social detoxification, similar to ASAM level 3.2.D</td>
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departments. These beds were excluded from the analysis because they are not exclusive to populations with mental health conditions and SUDs.

**Procedures**

**Estimation of Capacity**

To calculate the number of psychiatric beds, we downloaded California licensure data. Specifically, we utilized public data sets from the California Health and Human Services Agency, California Department of State Hospitals, California Department of Health Care Services, and California Department of Social Services. To calculate the number of SUD beds we acquired California licensure data from the Department of Health Care Services. Each of the psychiatric and SUD bed data sets were then merged into a master file.

We contacted the department of health services in each of the three counties in May 2022. We sent an inventory of facilities within each county for validation and adjustments. We prioritized the revisions detailed by the department’s point of contact over the licensure data when there were discrepancies.

**Estimation of Need, Approach 1: Survey of Psychiatric and SUD Treatment Facilities**

To complete the observed outcomes approach outlined in the introduction, we contacted every psychiatric and SUD treatment facility in our inventory for the three counties. We asked the facility directors about their current bed occupancy, average length of stay, waiting list volume, and the number of patients that facility directors recommended for transfer to a higher or lower level of care. If we failed to reach the director for the facility, we made up to three additional (four total) call attempts to all facilities with psychiatric beds in our inventory and four additional (five total) call attempts to all facilities with SUD beds in our inventory. We imputed estimates based on median values within a facility type for those we failed to contact, adjusting for total number of beds. As we had a small sample size (two out of the ten acute facilities in this region), we also incorporated weighted values from other counties into our estimates. The research team attempted to call facilities in May and June 2022.

**Estimation of Need, Approach 2: Expert Consensus**

The second approach used by the research team was an environmental scan for expert consensus estimates on psychiatric and SUD treatment bed needs, as reported in the peer-reviewed and gray literature. In Table 3, we report the set of terms we used in our searches. A Boolean search procedure was used to link terms within and between each domain. Our search was restricted to PubMed and Google Scholar from January 2005 to May 2022.

**Estimation of Need, Approach 3: Reference Cases**

The third approach for triangulating our estimates was to identify prevalence estimates for bed capacity in other jurisdictions—regionally, nationally, and internationally. These estimates were used as a comparison to the bed capacity for the three counties.

**Projection of Need**

In a separate analysis, we projected the change in the need for beds between 2021 and 2026. To create

| TABLE 3 |
| Environmental Scan of Normative Estimates for Bed Need |

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<thead>
<tr>
<th>Domain 1: Topical Terms</th>
<th>Domain 2: Analytic Terms</th>
<th>Domain 3: Normative Terms</th>
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<tbody>
<tr>
<td>“Behavioral health” OR “behavioral healthcare” OR “behavioral disorders”</td>
<td>“Shortage” OR “gap” OR “shortfall OR deficit”</td>
<td>“Expert” OR “leader” OR “specialist” OR “authority” OR “researcher”</td>
</tr>
<tr>
<td>“Mental health” OR “mental healthcare” OR “mental disorders”</td>
<td>“Need” OR “demand” OR “benchmark”</td>
<td>“Panel” OR “consensus” OR “convening” OR “deliberation” OR “summit” OR “opinion”</td>
</tr>
<tr>
<td>“Substance use” OR “substance abuse” OR “substance misuse”</td>
<td>“Capacity” OR “supply” OR “availability”</td>
<td>“Levels of care” OR “care continuum” OR “continuum of care” OR “hierarchy”</td>
</tr>
</tbody>
</table>
these estimates, we used data on population growth, as well as demographic shifts in the age, sex, and race/ethnicity composition of California. We used data from the U.S. Census Bureau to complete this analysis. For a full description of the analysis please see the “Analysis” section.

Measures

Psychiatric beds were defined as beds within psychiatric facilities with the primary purpose of serving individuals with psychiatric disorders. Psychiatric disorders included but were not limited to schizophrenia, bipolar disorder, psychosis not otherwise specified, major depressive disorder, and anxiety disorders. Beds that were primarily used for individuals with developmental disorders, intellectual disabilities, or neurodegenerative disorders were not included. The only exception was if the beds were for individuals with comorbid physical and mental health conditions.

SUD treatment beds were defined as beds within SUD treatment facilities. The primary purpose of the beds was alcohol and other drug treatment and recovery services. Beds may be used for detoxification, withdrawal management, medication services, and crisis intervention, as well as short- and long-term recovery.

Bed capacity was defined as the total number of psychiatric or SUD treatment beds within a facility. Across the three counties, we summed the entire number of beds in facilities within a specified level. The number of beds was standardized per 100,000 population of the counties. The population estimates were downloaded from the U.S. Census Bureau.

Bed need was defined as the total number of beds within a level of care required to meet demand for beds. The demand for beds is the quantity requested by consumers. According to the literature, the optimal bed occupancy rate is typically set around 85 percent. This occupancy rate allows for a facility to accommodate high-acuity patients who require more staffing resources. Going above the 85 percent threshold could strain a facility’s workforce, making the facility unable to accommodate variation in demand over time. Many individuals do not seek psychiatric or SUD treatment for a myriad of factors. Some examples include stigma, financial barriers, limited access, and limited knowledge about possible benefits. In need estimation approaches 1 and 3 (see above), we do not include individuals who do not acquire treatment but who do need it. However, individuals who do not acquire treatment but who do need it are included in need estimation approach 2.

Analysis

As a first step, we conducted descriptive analyses to summarize the number of psychiatric and SUD treatment beds by the levels of care within the scope of our analysis. Specifically, we quantified total bed capacity, as well as capacity per 100,000 population, alongside measures of dispersion (e.g., standard deviation, range). For SUD treatment beds, we also focused on total bed capacity combined across levels of care, as any given bed within a facility can often serve patients with needs corresponding to multiple levels of care.

As a second step, we estimated bed need based on the information obtained from our telephone survey, including utilized bed capacity, waiting list volume, average length of stay, and requested transfers to higher and lower levels of care. Specifically, the formula for psychiatric bed need, Equation 1, was:

$$\sum_{f=1}^{n} \left( \frac{UC_{f}}{0.85} + W_{f} - H_{f} - K_{f} \right)$$

where $f$ represents a facility within a level of care ($l$), $UC$ represents utilized psychiatric bed capacity for a facility (i.e., proportion of beds occupied), $W$ represents waiting list volume, $H$ represents requested bed transfers to a higher level of care, and $K$ represents requested bed transfers to a lower level of care. Three levels of care are represented (1, 2, 3), with 1 indicating the lowest (e.g., community residential or residential detoxification) and 3 indicating the highest (e.g., acute or high-intensity residential treatment). For the lowest level of care, the term $[l-1]$ is fixed to 0 because there is no lower level of care within the continuum; for the highest level of care, the term $[l+1]$ is likewise set to 0 because there is no higher level of care. For nonrespondent facilities, we imputed
missing values based on median respondent values, weighted according to facility size as defined by the number of psychiatric beds.

Descriptively speaking, the first half of Equation 1 sums bed need across all facilities within a level of care based on utilized capacity relative to a benchmark of 85 percent utilized capacity. Then, it adds wait-listed individuals and subtracts individuals currently occupying beds whose administrators wish to transfer to a higher or lower level of care. The second half of the equation reallocates these requested transfers to appropriate higher and lower levels of care.

Equation 1 modified to compute SUD treatment need, as reflected in Equations 2a and 2b:

\[
\sum_{i=1}^{n} \left( \frac{UC_{fl}}{0.85} + W_{fl} \right)
\]

\[
\sum_{i=1}^{n} \left( \frac{UC_{fl}}{0.85} + W_{fl} - H_{fl} - K_{fl} \right)
\]

Note that Equation 2a, which represents our primary estimate for SUD treatment bed need, does not include transfers to higher and lower levels of care. The reason for this (as noted above) is that residential SUD treatment facilities are collectively represented within a single band of ASAM criteria (level 3); therefore, transfer to a higher or lower level of care is likely to represent a transfer to services outside the scope of our analysis—such as partial hospitalization or intensive inpatient care. If these services are limited in Merced, San Joaquin, and Stanislaus Counties, the implication is that patients will ultimately remain in residential facilities providing ASAM level 3 services, although the intensity of these services may vary (e.g., ASAM level 3.1 to ASAM level 3.7). Equation 2a assumes that this is the case, resulting in a greater level of need. Equation 2b represents a scenario in which this infrastructure is in fact present, allowing transfers to occur and resulting in a lower level of need for ASAM level 3 beds.

As a third step, we estimated the difference between total bed capacity and bed need throughout Merced, San Joaquin, and Stanislaus Counties using Equations 1, 2a, and 2b. Note that, as outlined in the “Results” section below, these computations were possible only for facilities that provided services to adults; facilities providing services to children were too few to report on using an observed-outcomes approach. As a secondary gap analysis, we compared capacity with need, as represented by expert consensus and prior literature. Lastly, we projected psychiatric bed need over five years (2021–2026) based on demographic and population trends at a regional level. This involved three steps. First, we utilized CHIS data from 2011 to 2018 (the most recently available year) to estimate the mean prevalence of serious psychological distress (SPD) among Californian adults over this period, according to three demographic categories: sex (female, male), race/ethnicity (Black, Hispanic, Asian, White non-Hispanic), and age group (under versus over age 65). Second, we used U.S. Census Bureau information to project regional demographic and population trends in the northern San Joaquin Valley from 2021 to 2026. This allowed us to compute the expected prevalence of SPD in 2026 based on evolving demographic trends. Third, we converted expected changes in prevalence of SPD over the five-year period to expected changes in utilization of psychiatric inpatient services.

Third, we quantified the percentage of facilities, at each level of care, reporting an inability or difficulty placing patients with certain demographic characteristics (e.g., BMI > 45 kg/m²), behavior patterns (e.g., history of arson), or concurrent diagnoses (e.g., eating disorder). This inventory of populations was based on formative interviews that members of the research team conducted with county behavioral health administrators throughout California. Additionally, we quantified the percentage of beds occupied, at each level of care, by residents from within versus outside Merced, San Joaquin, and Stanislaus Counties. As noted in the “Introduction” section, both hard-to-place and out-of-region residents represent complicating factors when considering strategic investments in infrastructure. On the one hand, if hard-to-place populations are resulting in bottlenecks at one or more levels of care, investments may need to be tailored to accommodate these individuals. On the other hand, if out-of-region residents are occupying beds that might otherwise serve individu-
als in the local community, new incentives or regulations may be necessary to counterbalance this trend.

**Results**

**Bed Capacity**

We estimate that, as of June 2022, there were 983 adult psychiatric beds in Merced, San Joaquin, and Stanislaus Counties across all 90 psychiatric facilities: 186 beds at the acute level, 330 beds at the subacute level, and 467 beds at the community residential level (see Table 4). Estimates were based on facility licensure information and supplemented by direct inputs from facility administrators and our points of contact for Merced, San Joaquin, and Stanislaus departments of health services.

Regarding child and adolescent psychiatric beds, we identified a total of 219 (49.5 per 100,000): 26 beds at the acute level (5.9 per 100,000), 12 at the subacute level (2.7 per 100,000), and 181 beds at the community residential level (40.9 per 100,000).

In terms of SUD treatment beds for adults, we estimated 392 beds across the 12 facilities, including 83 beds for clinically managed high-intensity residential services (level 3), 210 beds for clinically managed moderate- and low-intensity residential services (level 2), and 51 beds for clinically managed residential detoxification services (level 1).

**Bed Need**

**Survey Execution**

Callers reached out to every noncrisis psychiatric (\( n = 90 \)) and residential SUD treatment facility (\( n = 12 \)) in Merced, San Joaquin, and Stanislaus Counties, as indicated by available licensure data files. Our overall response rate (i.e., we successfully spoke to a facility administrator) was 56.9 percent. Nonresponses were primarily due to phone numbers within licensure databases that were not operable and unsuccessful transfers from receptionists to facility administrators. As noted in the “Methods” section, in the event of unsuccessful transfers or voicemails, we called each psychiatric facility three additional times and each SUD facility four additional times.

In terms of psychiatric facilities, we successfully contacted two out of five noncrisis facilities at the acute level of care (40 percent), all four facilities at the subacute level of care (100 percent), and 42 out of 81 facilities (52 percent) at the community residential level. Among facilities for which we were able to speak with a facility administrator, only facilities at

---

**TABLE 4**

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Population Served</th>
<th>Beds in Highest Level of Care (Level 3)</th>
<th>Beds in Intermediate Level of Care (Level 2)</th>
<th>Beds in Lowest Level of Care (Level 1)</th>
<th>Total Beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatric, adult</td>
<td>1,186,267 adults</td>
<td>15.7 per 100,000 (186 beds)</td>
<td>27.8 per 100,000 (330 beds)</td>
<td>39.4 per 100,000 (467 beds)</td>
<td>82.9 per 100,000 (983 beds)</td>
</tr>
<tr>
<td>Psychiatric, children and adolescents</td>
<td>442,603 children</td>
<td>5.9 per 100,000 (26 beds)</td>
<td>2.7 per 100,000 (12 beds)</td>
<td>40.9 per 100,000 (181 beds)</td>
<td>49.5 per 100,000 (219 beds)</td>
</tr>
<tr>
<td>SUD treatment, adult (^a)</td>
<td>1,186,267 adults</td>
<td>7.0 per 100,000 (83 beds)</td>
<td>17.7 per 100,000 (210 beds)</td>
<td>4.3 per 100,000 (51 beds)</td>
<td>33.0 per 100,000 (392 beds)</td>
</tr>
<tr>
<td>SUD treatment, children and adolescents</td>
<td>442,603 children</td>
<td>0.0 per 100,000 (0 beds)</td>
<td>0.0 per 100,000 (0 beds)</td>
<td>0.0 per 100,000 (0 beds)</td>
<td>0.0 per 100,000 (0 beds)</td>
</tr>
</tbody>
</table>

**NOTE:** Levels of care for psychiatric facilities are acute (level 3), subacute (level 2), and community residential (level 1). Levels of care for SUD treatment are ASAM level 3.5 (level 3), ASAM level 3.3 (level 2), and ASAM level 3.2-WM (level 1).

\(^a\) For two of the facilities, we had data with total bed numbers but not by level of care, so this row does not sum to the total.
the acute and community residential levels of care reported not offering psychiatric beds \( (n = 22) \). While we did not survey the five crisis residential facilities in this region, we classified them as acute level in our analysis, for a total of ten acute facilities.

In terms of SUD treatment facilities, we successfully contacted ten out of twelve \( (83\%) \). Of the ten, we found that four offered level 1 services for adults \( (\text{ASAM level 3.2-WM}) \), ten offered level 2 services for adults \( (\text{ASAM 3.3}) \), and four offered level 3 services for adults \( (\text{ASAM level 3.5}) \). No facilities offered services for children.

**Survey Response**

Participating facilities reported current bed occupancy rates, current waiting list volume, and whether facilities would transfer patients to a higher or lower level of care if able to do so. In Table 5, we report estimates for adult psychiatric and SUD treatment facilities. Of note, we found that occupancy rates at subacute psychiatric facilities were lower and waiting list rates were higher than among acute and community residential facilities. We also found that some SUD treatment facilities have beds that could be flexed to serve multiple ASAM levels of care \( (\text{e.g., levels 3.2, 3.3, and 3.5}) \). As a result, the denominator for bed occupancy rates at SUD treatment facilities consisted of all beds that could *theoretically* be used for a particular level of care. In some instances, these beds were unoccupied for that particular level of care but were occupied by someone receiving a different level of care. We therefore elected to also report total occupancy and waiting list volume, as well as transfer requests, among SUD treatment facilities. We were unable to report these estimates for child psychiatric and child SUD facilities, as the number of responses were too small for these estimates to be meaningfully interpreted.

**Adult Psychiatric Bed Need**

Using Equation 1 (see the “Methods” section), we estimated that Merced, San Joaquin, and Stanislaus Counties require 13.1 acute inpatient psychiatric beds per 100,000 adults (see Table 6). In absolute terms,
### Table 6
Needed Psychiatric Beds, Bed Days, and Beds per 100,000 Population

<table>
<thead>
<tr>
<th>Bed Category</th>
<th>Highest Level of Care (Level 3)</th>
<th>Intermediate Level of Care (Level 2)</th>
<th>Lowest Level of Care (Level 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beds</td>
<td>Bed Days</td>
<td>Beds per 100,000</td>
</tr>
<tr>
<td>Adult psychiatric beds</td>
<td>Estimate 1 (Equation 1) based on survey data</td>
<td>156</td>
<td>857</td>
</tr>
<tr>
<td></td>
<td>Estimate 2 based on expert consensus estimates(^a)</td>
<td>308</td>
<td>1,693</td>
</tr>
<tr>
<td>Child psychiatric beds</td>
<td>Estimate 1 based on California financial and utilization data(^b)</td>
<td>36</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Estimate 2 based on a survey of 28 European countries(^c)</td>
<td>41</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Estimate 3 based on N-MHSS data(^d)</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Estimate 4 based on N-MHSS data and assuming double counting(^e)</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

**NOTE:** NA = not available (using the particular estimate). Bed days are estimated as the reported mean length of stay times the number of beds.

\(^a\) McBain, Cantor, Eberhart, Crowley, and Estrada-Darley, 2022.
\(^b\) California Hospital Association, 2018.
\(^c\) Signorini et al., 2017.
\(^d\) Lynch, Teich, and Smith, 2017. This assumes no double counting of beds at acute and subacute levels of care.
\(^e\) Lynch, Teich, and Smith, 2017. This assumes that residential treatment facilities double count beds at acute and subacute levels of care.

This translates to 156 beds for adults. Additionally, we estimated that Merced, San Joaquin, and Stanislaus Counties require 42.5 subacute inpatient psychiatric beds per 100,000 adults (505 beds total). Lastly, we estimated that Merced, San Joaquin, and Stanislaus Counties require 29.9 community residential beds per 100,000 adults (354 beds total; Table 6, estimate 1).

These estimates differ from past estimates conveyed by content experts, who have typically projected a need of 25–30 beds per 100,000 adults at the acute level and 20–30 per 100,000 adults at the subacute level.\(^g\) In a recent statewide report, the authors of this report concluded that California as a whole requires 26.0 beds per 100,000 population at the acute level and 24.6 beds at the subacute level, both of which fall comfortably within the range offered by experts.\(^h\) The Merced, San Joaquin, and Stanislaus County estimate for acute beds is substantially lower than this estimate (13.1 versus 26.0 per 100,000 adults), while the estimate for subacute beds is higher (42.5 versus 24.6 per 100,000 adults). We have therefore treated the state-wide estimates of need as a reasonable alternative as indicated in Table 6 (estimate 2), alongside the state-level estimated need for community residential beds: 22.3 per 100,000 adults.

**Child Psychiatric Bed Need**

As noted above, we did not receive enough responses \((n = 1)\) across the three levels of care to model estimated need for child psychiatric beds. We therefore directed our attention to normative and reference benchmarks. After our environmental scan, we elected to draw from two data sets to provide lower-bound and higher-bound estimates. First, we identified the prevalence of acute child and adolescent psychiatric beds throughout California, using a 2018 report published by the California Hospital Association. This report analyzed financial and utilization data from the California Department of Health Care...
Access and Information to estimate a prevalence of 8.1 acute beds per 100,000 children and adolescents in 2016. The observed ratio of acute to subacute beds in California among adults was 1.06 to 1.00, and we applied this ratio to estimate the expected need for child psychiatric subacute beds: 7.7 per 100,000 children and adolescents. Due to significant differences in the service characteristics of community residential treatment facilities among adults versus children, we did not generate a comparable estimate of need for this level of care.

As an additional reference point, we reviewed a survey of 28 European countries, which offered a median number of inpatient (acute and subacute) child psychiatric beds—17.95 per 100,000 individuals. This figure is consistent with estimates from U.S. states, such as North Carolina, which recently reported 17.0 inpatient child psychiatric beds per 100,000 children and adolescents. Because of these findings, we specified a higher-bound range of 9.2 acute beds per 100,000 children and adolescents and 8.7 subacute beds per 100,000 children and adolescents, again relying on the ratio of 1.06 to 1.00. We also note from our review of the literature that estimates varied widely across geographic settings—for example, the United Kingdom has reported its inpatient child psychiatric beds as 3.40 per 100,000, while New York state has reported its capacity as 38.2 per 100,000.

For child and adolescent community residential treatment facility beds, we selected a reference estimate of 44.3 residential treatment facility beds per 100,000 children and adolescents (Table 6, estimate 3) based on a review by Sean Lynch and colleagues. The authors produced estimates of residential treatment facilities for children and adolescents throughout the United States, using National Mental Health Services Survey (N-MHSS) data, and they concluded that the United States has 6.96 beds per 1,000 children and adolescents with serious emotional disturbance. Because of a background prevalence estimate that 6.36 percent of children in the United States have a serious emotional disturbance, this translates to 44.3 beds per 100,000 children and adolescents overall. However, this figure might be considered a higher-end estimate for need in Merced, San Joaquin, and Stanislaus Counties, as it incorporates potential double counting of facilities that are considered acute or subacute but are not hospital-based—e.g., crisis residential programs. If we were to assume that there is double counting, this would introduce a lower-bound estimate of 26.3 residential treatment facility beds per 100,000 children and adolescents (Table 6, estimate 4).

**Adult SUD Treatment Bed Need**

Through Equation 2a (see “Methods”), we estimated that Merced, San Joaquin, and Stanislaus Counties require 30.5 SUD treatment beds per 100,000 adults. In absolute terms, this translates to 362 beds. Equation 2b, which assumes double counting of facilities across ASAM levels, derived a more modest estimated need of 27.4 SUD treatment beds per 100,000 adults, or 325 beds total. As indicated in Table 5, there appeared to be larger demand for more-intensive services: Beds representing ASAM levels 3.5 and 3.3 reported higher occupancy rates, and there were considerably more requests for transfers to higher levels of care at those levels than requests for transfers to lower levels of care.

As shown in Table 7, we generated two additional sets of estimates for adult SUD treatment bed need. We computed, on the basis of the 2015 National Survey of Substance Abuse Treatment Services, SUD treatment bed capacity for all 50 U.S. states (see the appendix for the complete U.S. inventory) to contextualize capacity in Merced, San Joaquin, and Stanislaus Counties relative to California and other states. If Merced, San Joaquin, and Stanislaus Counties were to use California as a benchmark (46.2 beds per 100,000 adults), they would require 548 beds to align themselves with this statewide capacity. By contrast, if Merced, San Joaquin, and Stanislaus strategized to align themselves with the U.S. median (42.7 beds per 100,000 adults), they would require 507 beds.

**Child SUD Treatment Bed Need**

As with child psychiatric facilities, we did not receive enough responses (n = 0) to directly model estimated need for child SUD treatment beds across all three levels of care. We therefore focused on a set of reference benchmarks similar to that which we used among adults. With measures in the 2015 National
TABLE 7

Needed SUD Treatment Beds, Bed Days, and Beds per 100,000 Population

<table>
<thead>
<tr>
<th>Bed Category</th>
<th>Beds</th>
<th>Bed Days</th>
<th>Beds per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult SUD treatment beds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimate 1 (Equation 2a): based on survey data, excluding transfers to other care levels</td>
<td>362</td>
<td>22,038</td>
<td>30.5</td>
</tr>
<tr>
<td>Estimate 2 (Equation 2b): based on survey data, including transfers to other care levels</td>
<td>325</td>
<td>19,756</td>
<td>27.4</td>
</tr>
<tr>
<td>Estimate 3: based on the National Survey of Substance Abuse Treatment Services and using California as a benchmark</td>
<td>548</td>
<td>33,327</td>
<td>46.2</td>
</tr>
<tr>
<td>Estimate 4: based on the National Survey of Substance Abuse Treatment Services and using the U.S. median as a benchmark</td>
<td>507</td>
<td>30,802</td>
<td>42.7</td>
</tr>
<tr>
<td>Child SUD treatment beds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimate 1: based on the National Survey of Substance Abuse Treatment Services and using California as a benchmark</td>
<td>43</td>
<td>2,665</td>
<td>9.9</td>
</tr>
<tr>
<td>Estimate 2: based on the National Survey of Substance Abuse Treatment Services and using the U.S. median as a benchmark</td>
<td>69</td>
<td>4,199</td>
<td>15.6</td>
</tr>
</tbody>
</table>

NOTE: Bed days for both children and adults are based on average length of stay (60.8 days) across all respondent facilities from administered survey interviews.

Survey of Substance Abuse Treatment Services, as reported by the Assistant Secretary for Planning and Evaluation, we computed SUD treatment bed capacity for all 50 U.S. states (see the appendix for the complete U.S. inventory). If Merced, San Joaquin, and Stanislaus Counties were to use California as a benchmark (9.9 beds per 100,000 children/adolescents), they would require 43 beds to align themselves with this statewide capacity (estimate 1). By contrast, if Merced, San Joaquin, and Stanislaus sought to align themselves with the U.S. median (15.6 per 100,000 children and adolescents), it would require 69 beds (estimate 2).

Gap Analysis

Psychiatric Beds

Using Equation 1, we estimated that Merced, San Joaquin, and Stanislaus Counties have surpluses of 30 beds at the acute level and 113 at the community residential level (Table 8, estimate 1). However, this model also estimated that Merced, San Joaquin, and Stanislaus have a shortage of 175 subacute beds. When using statewide psychiatric bed needs as a benchmark (estimate 2), we observed a larger surplus for community residential beds, a modest surplus (rather than a shortage) for subacute beds, and a shortage (rather than a surplus) of acute beds.

According to statewide and international reference points for child psychiatric beds, we observed modest shortages of both acute (10–15) and subacute (22–27) beds. There was a surplus at the community residential level of 65 beds when using estimate 3 but a shortfall of 15 beds when using estimate 4.

SUD Treatment Beds

Assuming that Merced, San Joaquin, and Stanislaus Counties are not positioned to further develop infrastructure and service lines that correspond to ASAM levels 2 and 4, responses from the facilities survey indicated a moderate surplus of 30 SUD treatment beds for adults (Table 9, estimate 1). If Merced, San Joaquin, and Stanislaus Counties were positioned to expand ASAM level 2 and 4 services, survey responses would indicate a greater surplus of 67 beds (Table 9, estimate 2). These findings differ considerably from state and national benchmarks for SUD treatment bed infrastructure. Relative to California’s average rate of 46.2 beds per 100,000 adults, Merced, San Joaquin, and Stanislaus have a shortfall of 156
## TABLE 8
Shortage of Psychiatric Beds and Beds per 100,000 Population

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Highest Level of Care (Level 3)</th>
<th>Intermediate Level of Care (Level 2)</th>
<th>Lowest Level of Care (Level 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beds per 100,000</td>
<td>Beds</td>
<td>Beds per 100,000</td>
</tr>
<tr>
<td>Adult psychiatric beds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimate 1 (Equation 1):</td>
<td>30</td>
<td>2.5</td>
<td>-175</td>
</tr>
<tr>
<td>Estimate 2: based on expert</td>
<td>-122</td>
<td>-10.3</td>
<td>39</td>
</tr>
<tr>
<td>consensus estimates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child psychiatric beds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimate 1: based on California financial and utilization data</td>
<td>-10</td>
<td>-2.3</td>
<td>-22</td>
</tr>
<tr>
<td>Estimate 2: based on a survey of 28 European countries</td>
<td>-15</td>
<td>-3.4</td>
<td>-27</td>
</tr>
<tr>
<td>Estimate 3: based on N-MHSS data</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Estimate 4: based on N-MHSS data and assuming double counting</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

**NOTE:** NA = not available (using the particular estimate). Values that are negative (red shading) represent shortfalls in the number of beds required to meet expected bed need. Values that are positive (green shading) represent surpluses in the number of beds required to meet expected bed need. Bed days are estimated as the reported mean length of stay multiplied by the number of beds.

a McBain, Cantor, Eberhart, Crowley, and Estrada-Darley, 2022.
b California Hospital Association, 2018.
c Signorini et al., 2017.
d Lynch, Teich, and Smith, 2017. This assumes that residential treatment facilities do not double count beds available at acute and subacute levels of care.
e Lynch, Teich, and Smith, 2017. This assumes that residential treatment facilities double count beds available at acute and subacute levels of care.

When compared with the national average rate of 42.7 beds per 100,000 adults, Merced, San Joaquin, and Stanislaus have a shortfall of 115 beds. When examining child SUD treatment beds, we found that Merced, San Joaquin, and Stanislaus Counties have a shortfall of 44 beds (9.9 beds per 100,000 children and adolescents) compared with the state-level average and 69 beds (15.6 beds per 100,000 children and adolescents) compared with the national average.

**Secondary Analyses: Projected Need for Hard-to-Place and Out-of-Region Populations**

**Projected Need for Psychiatric Beds**

Using CHIS data from 2011 to 2018, we were able to examine prevalence of SPD across three demographic categories: age, sex, and race/ethnicity. Throughout the state of California, we found that prevalence of SPD was higher among females than males (9.9 percent versus 7.3 percent), those under than over age 65 (10.0 percent versus 5.9 percent), among Hispanic than non-Hispanic residents (9.4 percent versus 8.4 percent), and among Black than White residents (9.6 percent versus 8.4 percent). According to California’s Department of Finance, the population of the northern San Joaquin Valley is anticipated to grow by 4.8 percent from 2021 to 2026; it also predicts a demographic shift of 18.5 percent more adults over age 65. The region will also diversify slightly, with a 7.9 percent increase in Black residents and 6.6 percent increase in Hispanic residents. Because of these trends, we estimated that the need for adult psychiatric beds would increase by 5.2 percent from 2021 to 2026.
TABLE 9
Shortage of SUD Treatment Beds, Bed Days, and Beds per 100,000 Population

<table>
<thead>
<tr>
<th>Bed Category</th>
<th>Beds</th>
<th>Bed Days</th>
<th>Beds per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult SUD treatment beds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimate 1 (Equation 2a): based on survey data, excluding transfers to other care levels</td>
<td>30</td>
<td>1,800</td>
<td>2.5</td>
</tr>
<tr>
<td>Estimate 2 (Equation 2b): based on survey data, including transfers to other care levels</td>
<td>67</td>
<td>4,081</td>
<td>5.7</td>
</tr>
<tr>
<td>Estimate 3: based on the National Survey of Substance Abuse Treatment Services and using California as a benchmarka</td>
<td>–156</td>
<td>–9,490</td>
<td>–13.2</td>
</tr>
<tr>
<td>Estimate 4: based on the National Survey of Substance Abuse Treatment Services and using the U.S. median as a benchmarka</td>
<td>–115</td>
<td>–6,965</td>
<td>–9.7</td>
</tr>
<tr>
<td>Child SUD treatment beds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimate 1: based on the National Survey of Substance Abuse Treatment Services and using California as a benchmarka</td>
<td>–44</td>
<td>–2,665</td>
<td>–9.9</td>
</tr>
<tr>
<td>Estimate 2: based on the National Survey of Substance Abuse Treatment Services and using the U.S. median as a benchmarka</td>
<td>–69</td>
<td>–4,199</td>
<td>–15.6</td>
</tr>
</tbody>
</table>

NOTE: Bed days for both children and adults are based on average length of stay (60.8 days) across all respondent facilities from administered survey interviews. Values that are negative (red shading) represent shortfalls in the number of beds required to meet expected bed need. Values that are positive (green shading) represent surpluses in the number of beds required to meet expected bed need.

a Bouchery, 2018.

Hard-to-Place Populations
All facility directors with whom we spoke reported on hard-to-place populations, in response to the prompt: “Does your facility place individuals who have . . .” Each facility director was asked about the list of populations outlined in Table 10. Because the number of responses from administrators at child and adolescent facilities was so limited, we elected to combine administrator responses for children and adults.

Overall, we found that the most difficult-to-place populations at psychiatric facilities were individuals with dementia (21 percent), nonambulatory individuals (25 percent), and those who required oxygen (25 percent). The most difficult-to-place populations at SUD treatment facilities were nonambulatory individuals (20 percent), individuals with a past sex offense (30 percent), individuals with dementia (30 percent), and individuals with traumatic brain injury (30 percent).

Out-of-Region Residents
Lastly, we asked facility directors to report the percentage of individuals who were residents from outside Merced, San Joaquin, and Stanislaus Counties. This analysis was limited to facilities placing adults, as we lacked sufficient data to include facilities placing children. Among psychiatric facilities, we found that 36.2 percent of patients in acute facilities (n = 2 facility administrator respondents), 87.6 percent of patients in subacute facilities (n = 4 respondents), and 34.0 percent of patients in community residential facilities (n = 36 respondents) were from out of the region. Among SUD treatment facilities, we found that 20.0 percent of individuals receiving ASAM level 3.5 services (n = 4 respondents), 18.4 percent of individuals receiving ASAM level 3.3 services (n = 9 respondents), and 0 percent of individuals receiving ASAM level 3.2 services (n = 4 respondents) were from out of the region.

Stakeholder Engagement
How Stakeholders Were Engaged
In June 2022, a RAND team led two virtual public forums on stakeholder perspectives on psychiatric and SUD bed infrastructure needs in the Merced,
### TABLE 10
Percentage of Psychiatric and SUD Facilities Able to Place Specific Populations

<table>
<thead>
<tr>
<th>Population Characteristic</th>
<th>Highest Level of Care</th>
<th>Intermediate Level of Care</th>
<th>Lowest Level of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Psychiatric Facilities</td>
<td>SUD Facilities</td>
<td>Psychiatric Facilities</td>
</tr>
<tr>
<td>Co-occurring conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dementia</td>
<td>0% (2)</td>
<td>40% (5)</td>
<td>25% (4)</td>
</tr>
<tr>
<td>Traumatic brain injury</td>
<td>0% (2)</td>
<td>40% (5)</td>
<td>50% (4)</td>
</tr>
<tr>
<td>Eating disorder</td>
<td>0% (2)</td>
<td>60% (5)</td>
<td>50% (4)</td>
</tr>
<tr>
<td>Co-occurring intellectual disability</td>
<td>0% (2)</td>
<td>40% (5)</td>
<td>25% (4)</td>
</tr>
<tr>
<td>Co-occurring SUD or mental illness(^a)</td>
<td>50% (2)</td>
<td>80% (5)</td>
<td>100% (4)</td>
</tr>
<tr>
<td>Co-occurring health issues</td>
<td>50% (2)</td>
<td>80% (5)</td>
<td>100% (4)</td>
</tr>
<tr>
<td>Justice system involvement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arson conviction</td>
<td>100% (2)</td>
<td>80% (5)</td>
<td>100% (4)</td>
</tr>
<tr>
<td>Sex offense conviction</td>
<td>100% (2)</td>
<td>40% (5)</td>
<td>50% (4)</td>
</tr>
<tr>
<td>Other forensic category(^b)</td>
<td>100% (2)</td>
<td>80% (5)</td>
<td>75% (4)</td>
</tr>
<tr>
<td>Incompetent to stand trial</td>
<td>50% (2)</td>
<td>60% (5)</td>
<td>75% (4)</td>
</tr>
<tr>
<td>History of violence</td>
<td>100% (2)</td>
<td>100% (5)</td>
<td>75% (4)</td>
</tr>
<tr>
<td>Murphy’s conservatee(^c)</td>
<td>50% (2)</td>
<td>NA</td>
<td>100% (4)</td>
</tr>
<tr>
<td>Other characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large size (BMI &gt; 45kg/m(^2))</td>
<td>100% (2)</td>
<td>100% (5)</td>
<td>50% (4)</td>
</tr>
<tr>
<td>Requiring oxygen</td>
<td>50% (2)</td>
<td>100% (5)</td>
<td>25% (4)</td>
</tr>
<tr>
<td>Nonambulatory</td>
<td>100% (2)</td>
<td>20% (5)</td>
<td>50% (4)</td>
</tr>
<tr>
<td>COVID-19 positive</td>
<td>100% (2)</td>
<td>60% (5)</td>
<td>50% (4)</td>
</tr>
<tr>
<td>Monolingual, Spanish speaking</td>
<td>100% (2)</td>
<td>80% (5)</td>
<td>100% (4)</td>
</tr>
<tr>
<td>Monolingual, non-English other(^d)</td>
<td>100% (2)</td>
<td>80% (5)</td>
<td>75% (4)</td>
</tr>
<tr>
<td>Insured by Medi-Cal</td>
<td>100% (2)</td>
<td>80% (5)</td>
<td>75% (4)</td>
</tr>
</tbody>
</table>

*NOTE: Parenthetical values represent the denominator (number of respondents) for each estimate. NA = not available.*

\(^a\) SUD was about asked at psychiatric facilities. Mental illness was asked about at SUD treatment facilities.

\(^b\) This category includes forensic cases other than a conviction of arson or sexual assault.

\(^c\) Murphy’s conservatees are individuals who have a conservator with the authority to place that individual in a state hospital or psychiatric facility involuntarily.

\(^d\) These are monolingual individuals who speak a language other than English or Spanish, such as Arabic, Mandarin, or Filipino.

San Joaquin, and Stanislaus Counties, as a complement to the quantitative analyses. RAND facilitated the discussion, and each county invited key stakeholders, including hospital and health system partners, to attend. The forums were scheduled for one hour and occurred over Zoom. A total of 20 stakeholders attended. The first forum had six attendees and no breakout rooms. The second forum had 14 attendees and, after a general introduction, split into two breakout rooms, one composed of individuals primarily interested in adult psychiatric beds and one more focused on child beds. Each breakout room was attended by two RAND staff—a lead facilitator and a
notetaker. The forums were also attended by county representatives, who introduced the RAND study.

RAND provided an overview of the problem, then guided discussion on what levels of care stakeholders perceive shortages, which populations are difficult to place in inpatient and residential care, and other considerations affecting bed shortages in the region.

Summary of Stakeholder Comments

At Which Levels of Care Are There Shortages?

Stakeholders perceived regional shortages at every level of inpatient and residential care, reporting that there is “not enough of anything” and that “it’s a no-win blockage in every direction or scenario.”

However, they particularly emphasized the shortage of community residential care—enhanced board and care facilities that can serve as a step down from hospital care. They reported that a lack of step-down options posthospitalization results in individuals utilizing services they no longer need because they are unable to transition back to independent living in the community and there are no in-between settings available.

Stakeholders also particularly emphasized the lack of local psychiatric beds for children and the importance of investing in adolescent care. They reported that oftentimes children wait in the emergency departments for days for a psychiatric bed, which is challenging for the children who cannot get the care they need, their caregivers, and emergency department staff. If children do eventually get a psychiatric bed, it might be in Sacramento or somewhere else hundreds of miles away. As one stakeholder said, “It is traumatic to children and their families when they have to be hospitalized and separated from their families so far from home at one of the most trying times in their lives.”

Some stakeholders pointed to the need for a new level of care: sobering centers in which people who are acutely intoxicated can have a safe place to stay for under 24 hours, without needing to go to the emergency department.

Which Populations Are Challenging to Place?

Stakeholders identified various hard-to-place populations:

- **Individuals with both mental health and physical health needs.** Stakeholders reported that there is a regional shortage of both acute care and community residential care for patients with co-occurring mental health and physical health needs. As a result, patients with complex needs may be sent to Sacramento and the Bay Area because there are not enough suitable beds in their own region. One stakeholder reported that sometimes patients whose mental health needs could be treated in community residential care are treated in a higher, more restrictive level of care than necessary because residential care is unable to handle their co-occurring physical health needs.

- **Geriatric population.** Older adults were perceived as a particularly challenging population to place. This is largely due to their high likelihood of having co-occurring physical health conditions, such as Parkinson’s disease or issues with ambulation. However, insurance status issues (described below) and licensing regulations also contributed to the difficulty placing older adults. Stakeholders reported that individuals “age out” of community residential mental health facilities when they reach age 60, as they are not licensed for older adult care. Conversely, nursing homes will not accept individuals with mental health needs. Therefore, individuals over age 60 with longer-term mental health needs often have no place to go. One stakeholder also reported some “finger-pointing” issues for patients with both mental health needs and dementia, with uncertainty regarding the type of placement that should accept them.

- **Individuals who do not have Medi-Cal insurance.** Related to the difficulties in placing geriatric individuals, stakeholder reported that patients who have Medicare but not Medi-Cal are difficult to place in mental health care. Additionally, one stakeholder
Stakeholders’ comments pointed to widespread shortages at all levels of care. They suggested that facilities are not equipped to provide multifaceted, whole-person care to complex patients with mental health and other needs.

observed that it is difficult to place children who have private health insurance in inpatient and residential care.

- Forensic- and criminal justice–involved individuals. Many stakeholders indicated that the reentry population is difficult to place in facilities.

- Children with SUD. Stakeholders reported that there is no residential or inpatient SUD care for adolescents in Stanislaus County and likely none in Merced or San Joaquin either. They reported that children are typically taken to Bakersfield or other far-away counties when they need to be hospitalized for SUD. Within this already hard-to-place population, one stakeholder reported that some children are especially hard to place in SUD facilities, including children already in short-term residential therapeutic programs, aggressive children, children with co-occurring problems (such as eating disorders and self-injury), and children experiencing gender dysphoria.

- Those who are actively using substances, especially homeless individuals. Stakeholders indicated that individuals who use substances and are not abstinent are difficult to place, because substances are not allowed on the premises. Some stakeholders saw individuals experiencing homelessness who are using substances as particularly difficult to place.

What Other Issues Affect Bed Availability in the Region?

Stakeholders identified ways in which policies, regulations, and other barriers contribute to issues accessing care:

- Bottlenecks in crisis stabilization and acute emergency care. One stakeholder pointed out that the regulations that require crisis stabilization units to discharge patients in under 24 hours do not line up with policies requiring a 72-hour hold and do not allow adequate time to stabilize patients. Another stakeholder reported a bottleneck where patients sit in emergency departments for hours awaiting the necessary testing to be cleared for mental health care.

- Policies that prioritize conserved and justice-involved patients. One stakeholder pointed out that policies that prioritize conserved patients and inmates cause inpatient capacity to fill up, leaving little room for other patients.

- COVID-19 pandemic. Stakeholders reported that COVID-19 has complicated placements because many placements will not take patients with COVID-19, and those that do have to take lower numbers of patients in order for those who test positive to isolate. There have also been times when entire hospital units are forced to shut down due to COVID-19, with grave effects on capacity to serve both adolescents and adults.
Overall, stakeholders’ comments pointed to widespread shortages at all levels of care. Further, they suggested that facilities are not equipped to provide multifaceted, whole-person care to complex patients with mental health and other needs.

**Discussion and Recommendations**

**Understanding the Shortages and Surpluses of Psychiatric Beds**

**Among Adults**

We estimate that Merced, San Joaquin, and Stanislaus Counties have a shortage of inpatient beds, but it is difficult to determine whether this shortage is among either acute or subacute beds. Using survey data, we estimated a shortfall of 175 adult subacute beds yet a surplus of 30 acute beds. By contrast, using expert consensus estimates, we estimated there to be a shortage of 122 adult acute beds but a surplus of 39 subacute beds. We also estimate that the counties appeared to have a surplus of adult community residential beds across both estimation methods.

The differences between our acute and subacute estimates by survey and expert consensus methods may be attributable to unique challenges with placing certain populations in this region. Across all co-occurring conditions that were surveyed, subacute facilities reported a higher rate of placing individuals with these conditions compared with acute care facilities. In particular, all four of the subacute facilities reported being able to place individuals with co-occurring health issues, including SUD. By contrast, only one acute care facility reported being able to do so. The lack of options for patients with co-occurring health issues at the acute level may increase the expressed demand for subacute facilities in the region, even if an acute facility may be more appropriate for the patients’ own health needs.

The higher rate of out-of-region residents using subacute facilities in Merced, San Joaquin, and Stanislaus Counties compared with acute facilities may also explain the differences between our survey data and expert consensus estimates. Although we did not directly incorporate the out-of-region rates in our shortage calculations, the greater proportion of out-of-region residents among subacute facilities may be driving its high waiting list rate (25 percent) and the high transfer request rates from acute facilities to lower levels of care (51 percent). Both of these factors (i.e., waiting lists and transfer requests) were incorporated in our calculation of shortage estimates using survey data. As our method using expert consensus estimates was based on bed need at the state level, we were not able to consider differences between need and utilization from within versus outside the region using this estimation method.

In terms of projected bed need, we concluded that Merced, San Joaquin, and Stanislaus Counties will need approximately 5 percent more adult psychiatric beds over the next five years (through 2026). This shift is predominately due to overall population growth over this period. To a lesser extent, increasing racial/ethnic diversity will also contribute, as epidemiological data throughout California indicate that Hispanic and Black residents have modestly higher rates of serious psychological distress—and, by extension, use of inpatient psychiatric services—compared with their White counterparts.

**Among Children and Adolescents**

We estimate, using secondary data from California, other parts of the United States, and other parts of the world, that children and adolescents in Merced, San Joaquin, and Stanislaus Counties are experiencing modest shortages of acute (estimate 1: ten beds; estimate 2: 15 beds) and subacute beds (estimate 1: 22 beds; estimate 2: 27 beds). Beds at the community residential level were estimated between a surplus of 65 beds (estimate 3) to a shortage of 15 beds (estimate 4).

Compared with estimates of need for adult psychiatric beds, which were predominately normative in nature (meaning that they were based on an analysis of what should be the case), estimates for children and adolescents were based on descriptive benchmarks from other settings. It is an open question whether greater bed capacity in these settings has translated to successfully meeting population needs. However, Merced, San Joaquin, and Stanislaus Counties could
consider these benchmarks as a first step in realizing broader coverage for children and adolescents.

**Understanding the Shortages and Surpluses of SUD Treatment Beds Among Adults**

We estimated, using survey responses from SUD treatment facilities, that Merced, San Joaquin, and Stanislaus Counties had a modest surplus of beds for adults: If patients were unable to be easily transferred to higher or lower levels of care (ASAM level 2 or 4 services), the counties would have a surplus of 30 beds; otherwise, if transfers could happen effectively, the county would have a surplus of 67 beds. Among the ten facilities with whom we conducted interviews, the average bed occupancy rate was 66.0 percent, well under the standard threshold of 85 percent bed occupancy—implying that facilities are operating below expected levels. However, we did observe longer waiting lists for lower-level residential detoxification services, where about one in ten patients was on a waiting list.

Interestingly, when we compared Merced, San Joaquin, and Stanislaus Counties’ SUD treatment bed capacity for adults with both California and the United States more generally, we found that Merced, San Joaquin, and Stanislaus had considerably lower capacity. Using the state of California as a reference point, we would have expected Merced, San Joaquin, and Stanislaus Counties to have 156 more SUD treatment beds than they currently have; using median bed capacity in the United States as a reference point, we would have expected Merced, San Joaquin, and Stanislaus Counties to have 115 additional SUD treatment beds for adults. One possibility is that rates of SUDs among adults in Merced, San Joaquin, and Stanislaus Counties are lower than elsewhere, leading facilities to effectively balance supply and demand. However, California data on emergency department visits for alcohol and other drug diagnoses suggest that rates of SUDs in Merced, San Joaquin, and Stanislaus are in line with the rest of the state. An alternative and potentially more concerning interpretation is that these facilities maintain stable bed occupancy rates by excluding high-need populations that might otherwise overwhelm their system—such as those with co-occurring conditions and justice system involvement. We observed that fewer than half of SUD treatment facilities reported accepting patients with dementia, traumatic brain injury, a co-occurring intellectual disability, or a prior sex offense conviction.

**Among Children and Adolescents**

Similar to psychiatric beds for children and adolescents, the limited number of facilities and survey responses required us to focus on secondary estimates of need based on descriptive benchmarks—in California and nationally. Relative to statewide coverage for child and adolescent SUD treatment beds, we found that Merced, San Joaquin, and Stanislaus Counties have a deficit of roughly 44 beds. Compared with national coverage, Merced, San Joaquin, and Stanislaus Counties have a deficit of 69 beds.

**Identifying Hard-to-Place and Out-of-Region Populations**

We found that several populations were disproportionately hard to place in psychiatric and SUD treatment beds throughout Merced, San Joaquin, and Stanislaus Counties. The majority of psychiatric facilities stated that they were unable to place individuals with dementia, traumatic brain injuries, eating disorders, or those who required oxygen. Likewise, the majority of SUD treatment facilities stated that they were unable to place individuals with dementia, traumatic brain injuries, intellectual disabilities, or a prior sex offense conviction, as well as those who were incompetent to stand trial or those who are nonambulatory. These observations mean that it is likely that individuals may find themselves stuck in one level of care when they would be more appropriately served in a different level of care or entirely denied services.

Survey respondents reported a sizable proportion of patients at their facilities who were not residents of Merced, San Joaquin, and Stanislaus Counties. Among psychiatric facilities, acute and community residential facilities reported that approximately 35 percent of patients were from outside Merced, San Joaquin, and Stanislaus, while subacute facilities
reported 88 percent to be from outside Merced, San Joaquin, and Stanislaus. Given this, it is likely that placements from outside Merced, San Joaquin, and Stanislaus are driving higher bed occupancy rates, although the survey may reflect underreporting and misreporting as a function of social desirability bias.84 This proportion is smaller for SUD treatment facilities, where between 18 and 20 percent of residents receiving ASAM level 3.3 and 3.5 services were from outside Merced, San Joaquin, and Stanislaus Counties. Combined with frequent exclusions of clients with co-occurring conditions, justice involvement, and other characteristics, this suggests that high-need patients in Merced, San Joaquin, and Stanislaus Counties may be underserved and in need of new facilities with beds that specifically address their needs.

Recommendations

Drawing on the findings described above, we offer three recommendations to Merced, San Joaquin, and Stanislaus Counties.

1. In terms of psychiatric beds, focus on addressing the shortage of inpatient beds and for hard-to-place populations—including those with dementia and traumatic brain injuries. The majority of psychiatric facilities that we surveyed in Merced, San Joaquin, and Stanislaus Counties do not accept patients with dementia and traumatic brain injuries. Regardless of our estimation method, we identify that there is a shortage of inpatient beds in this region. In particular, we estimate a shortage of 175 beds at the subacute level and a surplus of 30 beds at the acute level using our survey data. However, using the expert consensus, we estimate a surplus of 39 beds at the subacute level and a shortage of 122 acute beds. Moreover, approximately 36 percent of individuals residing in acute facilities and 88 percent of individuals residing in subacute facilities were from outside the region, with subacute facilities having a waiting list of approximately 25 percent of their volume. Despite occupancies of above 80 percent, these results suggest that acute and subacute facilities may not be available to many high-need individuals who reside in Merced, San Joaquin, and Stanislaus. One potential short-term solution to this is to increase the number of inpatient beds at either the acute or subacute care level by expanding infrastructure. Investments in new infrastructure should consider such factors as construction costs, geographic proximity to populous areas, and equity considerations regarding the types of communities most likely to be served.85

It is possible that removing the bottleneck of transfer requests from acute to subacute care (either through expansion of infrastructure or through making beds more broadly available to hard-to-place populations) could lead to unsustainably low bed occupancy rates at the acute care level. Merced, San Joaquin, and Stanislaus may therefore want to consider the potential to convert existing beds to meet needs at these lower levels of care. This has been accomplished in other settings, both within and outside the United States,86 including using swing bed models;87 however, whether this approach is realistic in the region would depend on several factors, including how its infrastructure is arranged. Whether such investments bear fruit would also depend on the flexibility of this infrastructure to place populations that currently are turned away from many psychiatric facilities, including those with comorbid dementia; not a single facility expressed an ability to accommodate such patients.

2. In terms of SUD treatment beds, focus on beds that are available for Merced, San Joaquin, and Stanislaus County residents who are currently hard to place—including nonambulatory individuals. From the sizable number of survey responses from administrators at SUD treatment facilities, we learned that over 15 percent of beds are occupied by residents from outside Merced, San Joaquin, and Stanislaus Counties; 20 percent of facilities did not accept patients insured by Medi-Cal; and 80 percent of facilities did not accept patients who are nonambulatory. Despite an average occupancy rate of 66 percent and short waiting list volumes, beds at these facilities may not be available to many high-need individuals who reside in Merced, San Joaquin, and Stanislaus Counties. This observation may also account for the difference in the estimated need for SUD treatment beds in Merced, San Joaquin, and Stanislaus Counties based on (1) observed outcomes from survey interviews and (2) the reference benchmarks of statewide and national bed capacity. Although it is not uncommon
for regional health facilities to place individuals from multiple counties, there still may be jockeying for a limited number of spaces.

If Merced, San Joaquin, and Stanislaus Counties were to anchor on either of these reference benchmarks (which we believe to be appropriate), this would indicate a shortage of more than 100 SUD treatment beds for adults and another 40–60 for children and adolescents. However, the county would need to make sure that these beds are reaching target populations and that these investments are yielding expected system-level outcomes—including that bed occupancy rates and service utilization are high enough to justify their continued operation.

3. **Track outcomes of investments in bed capacity over time, including bed occupancy rates, waiting list volume, and bottlenecks that inhibit transfers to higher and lower levels of care.** Our first two recommendations are based on estimates that were derived from incomplete data. In particular, there was an absence of literature on normative estimates of need for services among children and adolescents. Although we were able to identify substantially more primary and secondary data on psychiatric and SUD treatment beds for adults, the nonresponsiveness of numerous facilities and missing data remains a concern.

By contrast, more-complete data that empirically examine the relationship between changes in bed capacity and changes in other outcomes would provide a more valid estimate for future assessments of whether there are shortages in bed capacity and if expanding the number of beds can alleviate this concern. Should the region increase its investments in these facilities, such as by expanding the number of beds, then the counties should monitor how these expansions are associated with changes in outcomes that suggest whether the supply is meeting bed need. Some of these metrics include bed occupancy rates, wait list volume, and bottlenecks that inhibit transfers to higher and lower levels of care.

**Limitations**

There are several limitations to our analysis. To begin, we encountered various issues in using state licensing data. The state’s data did not contain all the information needed to categorize providers at levels of care or to discriminate between adult and child beds. We used input from behavioral health leadership at the participating counties and data from facility administrators to enhance the licensure data. Our surveys of facility administrators revealed additional issues with the state licensure data, such as closed facilities and facilities that do not in fact have any psychiatric or SUD beds, suggesting that the licensure data are not kept up-to-date to accurately reflect the conditions on the ground.

Our first estimates of regional bed need, using the survey results, were limited by not incorporating the estimates of occupants who were residents from outside the region. As we did not have comparative estimates of residents from the region who were seeking care outside it, we did not have a full account of the relative outflow and inflow of patients. If the beds that out-of-region occupants are using would otherwise be vacant, then our first estimate of need would be higher than the true need rate in the population in this region.

Other limitations of the survey data were the sample size, response rate, and social desirability bias. The relatively small number of facilities also limited our ability to make accurate estimates, especially for facilities serving children and adolescents and acute psychiatric facilities. Also, to make a more positive impression, respondents may have overstated the availability of beds and their willingness to accommodate certain populations or may have underreported the number of beds occupied by residents from outside the region. We addressed these limitations by triangulating estimates with additional data points.

**Conclusions**

We estimate that Merced, San Joaquin, and Stanislaus Counties may require greater bed capacity for inpatient psychiatric and SUD treatment beds. In our survey results, we identified this need for inpatient psychiatric beds at the subacute level, where we estimated a shortage of 175 beds, whereas there was a surplus of 30 acute beds. By contrast, our estimates based on expert consensus identified a need of 122 beds at the acute level but a surplus of 39 subacute beds. For SUD treatment beds, our survey results
suggest a modest surplus of beds, while our estimates based on content experts suggest a modest shortage. Our survey results also identified a pronounced urgency for those who are nonambulatory. Although the quality of data was challenging, we were able to triangulate a broad array of estimates to arrive at these conclusions. We hope that this information will guide future investments in infrastructure throughout Merced, San Joaquin, and Stanislaus Counties, and that—with higher-resolution information available over time—these counties will be able to observe how these investments lead to improved patient outcomes.

Appendix. SUD Treatment Bed Availability and Service Utilization, by U.S. State

Table A.1 provides an overview of SUD treatment bed availability and service utilization throughout the United States. In the report, we use bed availability (beds per 100,000) in California and bed availability across all states as reference points.

### TABLE A.1
SUD Treatment Bed Availability and Service Utilization, by U.S. State

<table>
<thead>
<tr>
<th>State</th>
<th>Adults (18+ years)</th>
<th>Children and Adolescents (under 18 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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SOURCE: Bouchery, 2018; U.S. Census Bureau, 2021b.
NOTE: NA = not available.
Notes


2 California Department of Health Care Services, “DHCS Level of Care Designation,” webpage, last modified March 9, 2022.

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31 California Health Care Foundation, 2022.


33 California Health Care Foundation, 2022.


36 Bouchery, 2018.


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About This Report

This report is intended to provide an evaluation of bed needs for psychiatric and substance use disorder treatment for the California counties of Merced, San Joaquin, and Stanislaus in 2022. As in other states, these counties have confronted numerous challenges with behavioral health service delivery, including inpatient care for adults and adolescents. To strategically build capacity, the three counties sought to understand the gap between capacity and need for beds—at different levels of care and across select neighboring regions. This report examines bed shortfalls and surplus by triangulating estimates through multiple modeling methodologies.

Funding

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CalMHSA

The California Mental Health Services Authority (CalMHSA) is an organization of county governments working to improve mental health outcomes for individuals, families, and communities. Prevention and early intervention programs implemented by CalMHSA are funded by counties through the voter-approved Mental Health Services Act (Prop. 63). Prop. 63 provides the funding and framework needed to expand mental health services to previously underserved populations and all of California’s diverse communities.