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

Summary

Psychiatric and substance use disorder (SUD) treatment beds are essential infrastructure for meeting the needs of individuals with behavioral health conditions. However, not all psychiatric and SUD treatment beds are alike: They represent infrastructure within different types of facilities. For psychiatric beds, these vary from acute psychiatric hospitals to community residential facilities.1 For SUD treatment beds, these vary from facilities offering short-term withdrawal management services to others offering longer duration residential detoxification services.2 Different settings also serve clients with different needs. For example, some clients have high-acuity, short-term needs; others have longer-term needs and may return for care on multiple occasions.

KEY FINDINGS

- Although some treatment facilities appear to have stable bed occupancy rates and short waitlist volumes, their beds are not always available to individuals in need of services.

- In terms of psychiatric beds, need is particularly urgent at lower levels of care; for substance use disorder (SUD) treatment beds, urgency of need is most pronounced for Sacramento County residents who are insured by Medi-Cal.

- At SUD treatment facilities, more than one-quarter of beds were occupied by out-of-county patients.

- Using statewide or national benchmarks, Sacramento County would need more than 100 SUD treatment beds for adults and another 30 to 40 beds for children/adolescents.
Sacramento County, much like other counties throughout the United States, has been seeking to assess shortages in psychiatric and SUD treatment beds. This effort has been closely timed with California’s commitment to expand behavioral health infrastructure and bed capacity. Our previous study examined California’s statewide and regional psychiatric bed needs, but we did not examine need for specific counties, such as Sacramento County.

In this report, we estimated psychiatric bed and residential SUD treatment capacity, need, and shortages for various levels of care within Sacramento County. For our analysis of psychiatric beds, we included three levels of care: acute, subacute, and community residential services. Acute care is directed toward clients with the highest-acuity needs, is typically shorter term (days to weeks), and is intended to stabilize patients; subacute care is directed toward clients with moderate-to-high-acuity needs for a longer duration (multiple months); and community residential services are intended to address lower-acuity needs and longer-term care (often multiple years) that is focused on patient recovery. For our analysis of SUD treatment services, we used service categories as defined by the American Society of Addiction Medicine’s (ASAM’s) clinical guidelines. These included 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**

Our population of interest comprised all adults (18 years and older) and children/adolescents throughout Sacramento County. We therefore sought to conduct a phone-based survey with administrators at every psychiatric and SUD treatment facility in Sacramento County that provided inpatient services.

To estimate bed capacity, we synthesized an array of data sets from state agencies that are responsible for the licensure of psychiatric and SUD treatment beds into a list, which we updated based on feedback from the county’s Department of Health Services. To supplement this information, we administered a phone-based survey through which we contacted all psychiatric and SUD treatment facilities in Sacramento County to collect data bed occupancy rates, waitlist volume, and requested transfers to higher and lower levels of care.

To estimate psychiatric and SUD treatment bed need, we used triangulated estimates from multiple approaches. First, as noted above, we contacted psychiatric and residential SUD treatment facilities throughout the county and spoke with administrative leaders. Drawing on the information that we gathered, we were able to compute the number of beds required—at each level of care in Sacramento County—to reduce bed occupancy rates to 85 percent (a standard ceiling), as well as accommodate waitlist volume and requested transfers. Second, we conducted an environmental scan of academic and gray literature to identify normative and descriptive benchmarks for psychiatric and SUD treatment bed capacity and need. This allowed us to compare bottom-up estimates of need, based on observed outcomes at facilities in Sacramento County, with top-down estimates of need based on thresholds outlined by experts or otherwise established in various jurisdictions at local, national, and international levels.

**Key Findings**

**Psychiatric bed capacity.** We estimated that Sacramento County has a total of 593 adult beds at the
acute level (48.8 per 100,000 adults) and 82 adult beds at the subacute level (6.8 per 100,000). At the community residential level, we estimated that the county has a total of 262 adult beds (21.6 per 100,000). For children/adolescents, we found 147 psychiatric beds (39.7 per 100,000) in total: 113 beds at the acute level (30.5 per 100,000 children/adolescents), 0 at the subacute level, and 34 at the community residential level (9.2 per 100,000).

**SUD treatment bed capacity.** We identified 415 adult beds in Sacramento County: 238 beds available for clinically managed, high-intensity residential services (19.6 per 100,000 adults; ASAM level 3.5); 192 available for clinically managed, moderate- to low-intensity residential services (15.8 per 100,000 adults; ASAM level 3.3); and 79 available for clinically managed residential detoxification services (6.5 per 100,000 adults; ASAM level 3.2). We also estimated that there are 12 child/adolescent SUD treatment beds.

**Psychiatric bed need.** Using facility survey responses, we estimated that Sacramento County requires 251 adult acute inpatient psychiatric beds (20.7 per 100,000 adults) and 335 at the subacute level (27.6 per 100,000 adults). At the community residential level, we estimated a need of 302 beds (24.9 per 100,000 adults). Drawing on our review of the literature,6 we compared these estimates with a similarly reported need of 315 adult acute inpatient psychiatric beds (26.0 per 100,000 adults), 298 subacute beds (24.6 per 100,000 adults), and 271 community residential beds (22.3 per 100,000 adults). Although we did not have a sufficient number of survey responses to estimate child/adolescent psychiatric bed need, our review of descriptive benchmarks of bed capacity indicated a range from 30 to 34 acute beds (8.1 to 9.2 per 100,000 children/adolescents), 28 to 32 subacute beds (7.7 to 8.7 per 100,000 children/adolescents), and 98 to 164 community residential beds (26.3 to 44.3 per 100,000 children/adolescents).

**SUD treatment bed need.** Using facility survey responses, we estimated that Sacramento County requires 417 adult SUD treatment beds (34.7 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 there were more requests for transfers to higher levels of care compared with requests for transfers to lower levels of care. Drawing from our review of the literature, we found that reference benchmarks for adult SUD treatment beds were considerably higher: about 518 to 561 beds (42.7 to 46.2 per 100,000 adults). Among children/adolescent-servicing facilities, we did not receive enough survey responses to directly estimate SUD treatment bed needs. However, using our review of the literature, we found reference benchmarks of 37 to 58 SUD treatment beds (9.9 to 15.6 per 100,000 children/adolescents).

**Psychiatric bed shortage.** We estimated that Sacramento County has a surplus of 342 adult beds at the acute level. We also estimated that Sacramento County has a shortage of 253 subacute beds and 40 community residential beds. Using statewide and international reference points for child/adolescent psychiatric beds, we observed a similar—albeit smaller—surplus of acute beds; however, there was a shortfall of 28 to 32 beds at the subacute level and a considerably larger shortfall at the community residential level (between 64 and 130 beds).

**SUD treatment bed shortage.** We estimated that Sacramento County has a shortfall of 146 adult SUD beds. This is 12.0 beds per 100,000 adults shy of California’s average rate of 46.2 beds per 100,000 adults. This also represented a shortfall of 103 adult SUD beds compared with the U.S. national average (8.5 beds per 100,000 adults shy of the national average of 42.7 beds per 100,000 adults). Using facility survey responses, we estimated a considerably smaller shortage; however, this direct estimate likely underestimates the magnitude of the shortage because more than one-quarter of beds were occupied by clients from outside Sacramento County and more than one-half of facilities did not accept Medi-Cal patients. Both of these factors could be contributors to our results. Among child/adolescent SUD beds, we found that the California and national benchmarks indicated a shortfall of 25 to 46 beds (6.7 and 12.4 per 100,000 children/adolescents, respectively).

**Difficult-to-place populations.** Overall, we found that the most-difficult-to-place populations at psychiatric facilities were individuals with dementia (0 percent of facilities accepted such individuals), nonambulatory individuals (0 percent), and individuals who required oxygen (8 percent). The
most-difficult-to-place populations at SUD treatment facilities were individuals with a past sex offense (5 percent of facilities accepted such individuals), nonambulatory individuals (21 percent), and individuals with an arson conviction (21 percent).

Recommendations

Drawing on these findings, we offer the following three recommendations:

1. In terms of psychiatric beds, focus on addressing the shortage of beds at lower levels of care. Sacramento County appears to have sufficient acute psychiatric beds for adults and (potentially) children/adolescents. However, we estimated that the county requires about 300 additional beds at subacute and community residential levels for these populations. One potential solution to increase the number of beds at these lower levels of care might be to expand infrastructure. However, this could lead to an overall surplus—including of unused infrastructure—if even more patients were transferrable from acute to lower levels of care. Sacramento County may therefore want to consider alternatives that allow the county to shift the existing distribution of beds from higher to lower levels of care.

2. In terms of SUD treatment beds, focus on beds that are available for Sacramento County residents who are currently difficult to place—including Medi-Cal recipients. We observed that more than one-quarter of SUD treatment beds are occupied by residents from outside Sacramento County and that fewer than one-half of facilities accepted patients insured by Medi-Cal. This indicates that, although these facilities appear to have stable bed occupancy rates and short waitlist volumes, beds at these facilities are not available to many individuals in need of services. This observation may also account for the difference in the estimated need for SUD treatment beds in Sacramento County based on (1) observed outcomes from survey interviews and (2) the reference benchmarks of statewide and national bed capacity. If Sacramento County 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 30 to 40 beds for children/adolescents. Any additional beds would need to be designed to ensure that they reach the high-needs populations that are currently being missed.

3. Consider the comparative needs of children/adolescents and adults, as well as the comparative quality of underlying information for both. We found that bed shortages are considerably larger, in absolute terms, for adults compared with those for children/adolescents. However, in terms of standardized rates of need (i.e., need per 100,000 population), estimates are often comparable between age groups, which also suggests comparable shortages. We also note that the quality of available primary and secondary source information on bed need was much stronger for adults compared with that for children/adolescents; such consideration may factor into Sacramento County’s decision about which investments to prioritize.

Introduction

Function and Shortfall of Psychiatric Beds

Psychiatric beds represent structural resources for populations affected by mental illness, including individuals experiencing mental health emergencies.7 Psychiatric beds are embedded in a wide array of institutions—including acute and subacute psychiatric facilities and community residential treatment centers.8 They serve a variety of functions. For example, around-the-clock 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.9 Community residential
facilities provide individuals with a homelike environment but also provide ongoing clinical and social supports to meet needs that may persist for years.

Psychiatric beds constitute an important component of the mental health landscape. However, they should be viewed in the broader context of service delivery. For example, upstream services provided in outpatient settings have the potential to reduce inpatient occupancy by intervening before an emergency occurs. Additionally, decreased strain on inpatient occupancy can be achieved by diverting patients from psychiatric hospitalization to crisis outreach programs and alternative service models. In Sacramento County, such services include a mobile crisis unit and a crisis help line. There are also clinical guidelines that can match individuals’ needs to an appropriate level of care, such as the Level of Care Utilization System (LOCUS). However, a shortage of psychiatric beds can disrupt the flow of care that might otherwise meet LOCUS criteria.

Historically, California has experienced a reduction in psychiatric beds as part of an effort to deinstitutionalize psychiatric services. Between 1995 and 2016, psychiatric beds in California declined by nearly 30 percent. Organizational shifts from inpatient services to community-based resources produced the unintended consequence of curbing institutional capacity to respond to the needs of individuals requiring more-intensive behavioral health services, especially individuals with serious mental illness (SMI). Ultimately, insufficient mental health care infrastructure has shifted individuals with SMI out of institutionalized psychiatric care and into the custody of the criminal justice system and unhoused services system. These individuals may also be “boarded” in emergency department (ED) settings. For example, in early 2021, an estimated 1,600 adults in need of psychiatric beds were residing in county jails throughout California.

Function and Shortfall of SUD Treatment Beds

A separate set of facilities provides inpatient support for patients seeking recovery from SUDs. SUD treatment facilities provide services that may include evidence-based opioid agonist treatment, withdrawal or maintenance management, individual and group psychological support, mutual self-help, and peer therapeutic communities. Residential SUD treatment services, in particular, may provide intensive care and support for individuals with severe and complex SUDs. SUD treatment facilities often rely on ASAM criteria, which are similar to the LOCUS for patients with mental health needs, to link patients with an appropriate level of care. However, in contrast with mental health facilities that provide distinct levels of care, SUD treatment facilities provide various levels of care within a given facility. This is because individuals with SUDs often require a specific constellation of services for which the intensity varies, but the constellation itself is relatively consistent (although there may be exceptions). From this vantage point, an adequate care continuum within the SUD treatment landscape would provide a sufficient number of SUD treatment beds within facilities that offer various services that range in intensity, and this system would extend to outpatient
and community-based supports, such as counselors, social workers, peer supports, and physicians. Much like psychiatric beds, SUD treatment beds are in short supply in many parts of California. 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 variation: 22 counties do not have any residential SUD treatment facilities, and 45 counties lack any residential beds for children/adolescents. A 2018 report by the California Health Care Foundation found that, on average, there were 3.0 residential beds and 3.2 residential detoxification beds per 10,000 adults in California. In contrast, the state of California as a whole had 13,390 residential beds in 2015 (5.4 beds per 10,000 adults). The Sacramento area—which includes El Dorado, Placer, Sacramento, and Yolo counties—reported 2.4 residential and residential detoxification beds per 10,000 population, according to Department of Health Care Services (DHCS) data, which is considerably below the state median.

Measuring Need for Psychiatric and SUD Treatment Beds

Estimating the psychiatric and SUD treatment beds need in Sacramento County should serve two functions. First, when paired with estimates of the existing bed capacity, such estimates can help evaluators determine the magnitude of the surplus or shortfall, allowing policymakers to discuss investments to address any imbalances. Second, measured at multiple intervals, these estimates can provide an ongoing feedback mechanism for fine-tuning investments.

Calculating the need for psychiatric and SUD treatment beds is challenging. There are no gold standard approaches, and health systems are constructed differently at local, regional, and state levels. However, there are at least three common approaches for considering this problem:

1. **Observed outcomes.** The observed outcomes approach to estimation involves examining existing variation in bed capacity throughout a geographic area to assess how this variation corresponds to an array of outcomes. Example outcomes include observed wait times, bed occupancy rates, remission rates, length of stay, and ED boarding. The expectation is that geographic areas with higher bed capacity will generate better outcomes, and this can be used to model the effects of expansion in geographic areas with lower bed capacity.

2. **Expert consensus.** Through deliberative consensus, methods and content experts can arrive at estimates of psychiatric and SUD treatment need. For example, in a prior study, we convened a technical expert panel that proposed a range of 25 to 30 acute psychiatric beds per 100,000 adults and 20 to 30 subacute beds per 100,000 adults. These estimates also correspond with findings from similar exercises, both within the United States and internationally. Estimates for child/adolescent psychiatric beds, as well as SUD treatment beds, are less common.

3. **Reference approach.** In the absence of strong data on system performance or epidemiologic information, a reference approach estimates bed need based on the assumption that other jurisdictions (or countries) with similar health systems and demographic characteristics are liable to need a similar number of beds. Thus, alternative jurisdictions can be used as reference points or benchmarks to gauge the comparative level of infrastructure within a region of interest. The Organisation for Economic Co-operation and Development and the World Health Organization are two examples of institutions that have employed this approach to engage in comparative health systems analysis.

In a 2022 peer-reviewed journal article, we argued that the preferable approach is one that integrates at least two (if not all three) of the above approaches. In this report, we triangulate all three approaches, depending on the availability and quality of information. With regard to the observed outcomes approach, we also quantified difficult-to-place populations—such as individuals with comorbid dementia or patients insured through Medi-Cal—because these populations can create additional
obstacles that Sacramento County may need to consider. Likewise, we quantified beds occupied by residents from outside Sacramento County. From a local government perspective, it is important to determine whether ongoing services are actually satisfying the needs of individuals within the local community. In the event that this is not the case, Sacramento County may incorporate this information in their planning for new infrastructure.

State and Local Investments in Behavioral Health Infrastructure

California has committed to expanding behavioral health infrastructure, including bed capacity. In 2020, California Health and Human Services launched a Behavioral Health Task Force to advise Governor Gavin Newsom on efforts to reform behavioral health services throughout the state. Specific pieces of legislation—such as Senate Bill (SB) 855 and Assembly Bill (AB) 2377—have also provided a firm foundation for change. While SB 855 requires commercial insurance plans to provide medically necessary treatments for all mental health conditions and SUDs, AB 2377 authorizes local governments to purchase psychiatric facilities to prevent closures. AB 2265, passed in 2020, has also sought to increase access to treatments by allowing counties to use funding for mental health services to address not only mental health conditions but also SUDs, with a goal of enhancing care coordination and creating an integrated behavioral health care system.

Sacramento County has likewise pledged to improve its behavioral health continuum of care and to offer adult patients alternatives to hospitalization. Their crisis continuum initiative includes mobile crisis support teams; community-based services, such as 24/7 mental health urgent care; and inpatient discharges to appropriate levels of care. The county received approximately $6 million to develop three new crisis residential treatment programs, two of which have been operationalized despite setbacks introduced by the coronavirus disease 2019 (COVID-19) pandemic. Prior estimates from the Substance Abuse and Mental Health Services Administration-sponsored Crisis Now calculator suggest that additional infrastructure investments of about 200 psychiatric beds are needed to support the county’s 1.6 million residents.

Purpose of This Report

In this report, we provide an estimate of current psychiatric and SUD treatment bed capacity in Sacramento County. We then compare these measures to bed needs to derive the estimated shortfall. Computations are performed separately for children/adolescents versus adults to help Sacramento County plan for infrastructure that allows children/adolescents to be hospitalized separately from adults. Lastly, we project bed capacity needs from 2021 to 2026 based on evolving demographic trends in the broader Superior region of the state, of which Sacramento is the largest county.

Using the combined results, we offer three recommendations. These recommendations pertain to the expansion of bed capacity to address existing gaps, and they are situated in the context of continuing legislative efforts to establish a comprehensive continuum of behavioral health care services.

Methods

Population and Scope

Psychiatric beds. Our population of interest comprised all adults and children/adolescents in Sacramento County. We assigned all psychiatric facilities in the county (n = 54) to three levels of care—corresponding to a conceptual model established by the County Behavioral Health Directors Association of California. These levels were defined on two axes: (1) the acuity of needs being attended to, ranging from emergent crises to nonemergent, ongoing supports and (2) average length of stay, ranging from short term (days to weeks) to long term (months to years).

Acute care is defined as highly structured, 24/7 medically monitored inpatient care for individuals at heightened risk of harm to themselves or others, or who are otherwise unable to care for themselves; subacute care is defined as 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; and community residential services, which consist of 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, with staff present 24/7. Table 1 details the types of facilities that provide each of these levels of care, according to facility licensure information. Note that acute care facilities included general hospitals with psychiatric wards, not just facilities that restricted their services to psychiatric patients.

**SUD treatment beds.** For SUD treatment facilities in the county \((n = 26)\), we classified level of care based on the forms of treatment offered at the facility as opposed to the type of facility—ranging from long-term to more-rapid detoxification services. Specifically, we based the levels of care using ASAM clinical guidelines. We note that these levels of care are conceptually very different from those described among psychiatric facilities: All three levels of care for SUD treatment services fall under ASAM’s “level 3” inpatient/residential services, and any given facility may provide multiple tiers of service (e.g., 3.1, 3.2, 3.5, or 3.7). In other words, a single facility can provide multiple levels of care; this is (generally) not true for psychiatric facilities.

With regard to SUD treatment facilities, the highest treatment level in our sample was high-intensity residential treatment (ASAM level 3.5), the intermediate level was medium- to low-intensity residential treatment (ASAM level 3.3), and the lowest level pertained to facilities offering residential detoxification (ASAM level 3.2.D). In Table 2, we show the types of SUD treatment included in each ASAM level of care assessed in this study. Out-of-scope levels for our analysis included ASAM level 2 (intensive outpatient/partial hospitalization, which does not involve overnight placements); and ASAM level 4 (intensive inpatient).48 Specific bed categories were deemed outside the scope of our analysis. We omitted beds within permanent supportive housing, county jails, and EDs. These categories are seldom included in estimates because they are not exclusive to populations with mental health conditions and SUDs, although it may be the case that individuals with mental health conditions and SUDs occupy these bed types.

### TABLE 1
Levels of Care and Corresponding Psychiatric Bed Infrastructure

<table>
<thead>
<tr>
<th>Level of Care</th>
<th>Types of Facilities Included</th>
</tr>
</thead>
</table>
| **Acute (level 3)** | • Acute psychiatric hospitals  
• Psychiatric health facilities  
• General acute care hospitals with psychiatric wards  
• Acute beds at state hospitals  
• Crisis residential facilities |
| **Subacute (level 2)** | • 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 |
| **Community residential (level 1)** | • Adult residential treatment facilities  
• Enhanced or augmented “board and care” facilities  
• Social rehabilitation facilities |

**NOTE:** In this table, we refer to psychiatric health facilities and institutions for mental disease as defined by the California DHCS (California DHCS, “Psychiatric Health Facilities,” webpage, last modified on May 4, 2021c; California DHCS, “Facilities and Programs Defined as Institutions for Mental Diseases [IMDs]: 2021–Q1,” Sacramento, Calif., August 18, 2021e).
As a validation of facility licensure data, we contacted the Department of Health Services in Sacramento County in January 2022, providing them with an inventory of facilities within their county and soliciting revisions. Where discrepancies arose, we prioritized the revisions detailed by the department’s point of contact.

**Estimation of Need**

**Approach 1: Survey of psychiatric and SUD treatment facilities.** We contacted every psychiatric and SUD treatment facility in Sacramento County in an attempt to speak with facility directors about bed occupancy, average length of stay, waitlist volume, and the number of patients that they recommended for transfer to a higher or lower level of care (or else in need of more- or less-intensive services than they typically provided). In the event that we were unable to reach an administrative leader at a particular facility, we made up to four additional attempted contacts per facility (five total). For facilities that we were unable to reach (n = 16), we imputed estimates based on median values within the facility type, adjusting for the total number of beds. We conducted this phone-based survey in January and February 2022.

**Approach 2: Expert consensus.** In parallel with the survey efforts, we performed an environmental scan for expert consensus estimates on psychiatric and SUD treatment disorder bed needs reported in the peer-reviewed and gray literature. To accomplish this, we focused on the structured set of terms outlined in Table 3. Using a Boolean search procedure to link terms within each domain (e.g., using OR statements) and between domains (e.g., using AND statements), we examined PubMed and Google Scholar from 2005 to 2021 for normative estimates.

**Approach 3: Reference cases.** In the event that we were unable to find expert consensus estimates on need, we broadened our search criteria to include prevalence estimates for bed capacity in other jurisdictions—regionally, nationally, and internationally. This allowed us to situate the bed capacity of Sacramento County relative to other systems. As we described in the “Measuring Need for Psychiatric and SUD Treatment Beds” section, although these estimates are not normative, they nevertheless provide comparative benchmarks—for example, comparing bed capacity in Sacramento County to the mean or median bed capacity values in California, the United States, or European countries.

**Projection of Need**

In addition to estimating the 2021 need for beds, we projected changes in psychiatric bed need from 2021

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**TABLE 2**

<table>
<thead>
<tr>
<th>Treatment Level</th>
<th>Type of Treatment Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential short-term treatment (level 3)</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 (level 2)</td>
<td>Clinically managed medium- or low-intensity residential treatment, typically more than 30 days, similar to ASAM level 3.3.</td>
</tr>
<tr>
<td>Residential detoxification (level 1)</td>
<td>Clinically managed residential detoxification or social detoxification, similar to ASAM level 3.2.D.</td>
</tr>
</tbody>
</table>

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**TABLE 3**

<table>
<thead>
<tr>
<th>Domain 1: Topical Terms</th>
<th>Domain 2: Analytic Terms</th>
<th>Domain 3: Normative Terms</th>
</tr>
</thead>
<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>
to 2026. These estimates drew from expected trends in population growth and demographic shifts in the age, sex, and racial/ethnic composition of the state according to U.S. Census Bureau information as of 2021. The “Analysis” section below provides a fuller description of the computations involved.

Measures

Psychiatric beds. We defined psychiatric beds as beds within psychiatric facilities that have the primary purpose of serving individuals with psychiatric disorders—not limited to but including schizophrenia, bipolar disorder, psychosis not otherwise specified, major depressive disorder, and anxiety disorders. We did not include beds that were primarily intended for individuals with developmental disorders, intellectual disabilities, or neurodegenerative disorders unless such beds were identified for individuals with comorbid physical and mental health conditions. As noted above, the psychiatric facilities from which we drew these estimates were restricted to those outlined in Table 1.

SUD treatment beds. We defined SUD treatment beds as beds within SUD treatment facilities that have the primary purpose of alcohol and other drug treatment and recovery services. Such services may include detoxification, withdrawal management, medication services, crisis intervention, as well as short- and long-term recovery.

Bed capacity. We defined bed capacity as the total number of psychiatric or SUD treatment beds within a facility. This figure was summed across facilities within a specified level of care within Sacramento County. We standardized estimates at the population level as the number of beds per 100,000 population. Population estimates were taken from the U.S. Census Bureau for 2021 (and 2026 for projections).

Bed need. We defined bed need as the total number of beds within a level of care required to meet demand for beds, where demand represents the quantity of a service requested by consumers. Optimal bed occupancy rates are typically set around 85 percent to accommodate patients with high-acute needs who require more staffing resources. Although past research has occasionally concluded optimal occupancy rates that are below 85 percent, 85 percent represents a conservative threshold, above which facilities would be expected to incur strain on their workforce and be unable to accommodate variation in demand over time (e.g., as the result of a surge). We note that many individuals who might benefit from overnight residence at a psychiatric or SUD treatment facility do not always seek care—because of stigma, financial barriers, limited access, and/or limited knowledge about possible benefits.

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 because any given bed within a facility can often serve patients with needs that correspond to multiple levels of care.

As a second step, we estimated bed need based on the information obtained from our survey, including utilized bed capacity, waitlist 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

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

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 waitlist 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); $l$ indicates the lowest (e.g., community residential or residen-
tial detoxification) and 3 indicates 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 of utilized capacity. Then, it adds waitlisted individuals and subtracts individuals who currently occupy beds whose administrators wish to transfer to a higher or lower level of care. The second half of Equation 1 reallocates these requested transfers to appropriate higher and lower levels of care.

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

\[
\sum_{f=l}^{n} \left( \frac{UC_{f}}{0.85} + W_{f} \right)
\]

\[
\sum_{f=l}^{n} \left( \frac{UC_{f}}{0.85} + W_{f} - H_{f} - K_{f} \right).
\]

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 such services are limited in Sacramento County, this implies 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 rosier 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 Sacramento County based on Equations 1, 2a, and 2b. Note that, as outlined in the “Results” section below, these computations were only possible for facilities that provided services to adults; facilities providing services to children/adolescents were too few and far between to report on observed outcomes. As a secondary gap analysis, we compared capacity with need as represented by expert consensus and prior literature. Lastly, we projected psychiatric bed need from 2021 to 2026 based on demographic and population trends at a regional level. This involved three steps. First, we used California Health Interview Survey (CHIS) data from 2011 to 2018 (the most recently available years at the time of our analysis) 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 Superior region from 2021 to 2026. This allowed us to compute the expected prevalence of SPD in 2026, based on evolving trends. Third, we converted expected changes in prevalence of SPD over the five-year period to expected changes in utilization of psychiatric inpatient services.

Lastly, we quantified the percentage of facilities, at each level of care, reporting an inability or difficulty in placing patients with certain demographic characteristics (e.g., BMI > 45 kg/m2), behavior patterns (e.g., arson conviction), or concurrent diagnoses (e.g., eating disorder). This inventory of populations was based on the phone-based survey that we 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 Sacramento County. As noted in the “Introduction” section, both difficult-to-place and out-of-county residents represent complicating factors when considering strategic
investments in infrastructure. On the one hand, if difficult-to-place populations create bottlenecks at one or more levels of care, investments may need to be tailored to accommodate such individuals. On the other hand, if out-of-county residents are occupying beds that might otherwise serve individuals in the local community, new incentives or regulations may be necessary to counterbalance this trend.

Results

Bed Capacity

Adult psychiatric beds. We estimated that, as of January 2022, there were 937 psychiatric beds in Sacramento County across all 54 psychiatric facilities. This included 593 beds at the acute level, 82 beds at the subacute level, and 262 beds at the community residential level (see Table 4 and Figure 1). Estimates were based on facility licensure information and supplemented by direct inputs from facility administrators and our point of contact at the Department of Health Services in Sacramento County. Compared with feedback that we received from facility administrators, licensure data appeared to have overestimated psychiatric bed capacity by approximately 23 percent (as a result of closures).

Child/adolescent psychiatric beds. Regarding child/adolescent psychiatric beds, we identified a total of 147 (39.7 per 100,000). This included 113 beds at the acute level (30.5 per 100,000), 0 at the subacute level, and 34 beds at the community residential level (9.2 per 100,000). Corrections from facility administrators resulted in a 45 percent downward adjustment from the information available in licensure data. This was mostly attributed to several short-term residential treatment programs that reported not having psychiatric beds at their facility.

Adult SUD treatment beds. In terms of SUD treatment beds for adults, we estimated 415 beds across the 26 facilities in the county, including 238 beds for clinically managed high-intensity residential services (level 3), 192 beds for clinically managed moderate- or low-intensity residential services (level 2), and 79 beds for clinically managed residential detoxification services (level 1). This capacity represented a 15-percent downward adjustment from information contained in licensure data.

Child/adolescent SUD treatment beds. In terms of SUD treatment beds for children/adolescents, we estimated 12 beds across the three categories; as reported, all these beds were assigned to intermediate level of care (ASAM 3.3).

Bed Need

Survey execution. We reached out to every psychiatric (n = 54) and residential SUD treatment facility (n = 26) in Sacramento County, as indicated by available licensure data files. Our overall response rate (i.e., we spoke to a facility administrator) was 72.5 percent. Nonresponses were primarily due to invalid phone numbers.
FIGURE 1
Geographic Distribution of Psychiatric and SUD Treatment Services

SOURCE: Map data from Esri, HERE, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong). © OpenStreetMap contributors and the GIS User Community.
NOTE: All psychiatric facilities in Sacramento County are represented as red bubbles; larger bubbles represent facilities that contain more beds. All SUD treatment facilities in Sacramento County are represented as blue bubbles; larger bubbles represent facilities that contain more beds.
within licensure databases 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 facility up to four additional times.

In terms of psychiatric facilities, we successfully contacted three of 12 facilities at the acute level of care (25 percent), one of two facilities at the subacute level of care (50 percent), and 32 of 40 facilities (80 percent) at the community residential level. Among facilities for which we were able to speak with a facility administrator, only facilities at the community residential level of care reported not offering psychiatric beds (n = 19).

In terms of SUD treatment facilities, we successfully contacted 19 of 26 (73 percent). Of those 19 facilities, we found that nine offered level 1 services for adults (ASAM level 3.2.D), nine offered level 2 services for adults (ASAM level 3.3), and 13 offered level 3 services for adults (ASAM level 3.5). Only one facility offered services for children/adolescents, and they were level 2 services (ASAM level 3.3).

Survey response. Participant facilities reported current bed occupancy rates, current waitlist volume, and whether facilities would transfer patients to a higher or lower level of care if they were able to do so. In Table 5, we report estimates for adult psychiatric and SUD treatment facilities. Of note, we found that occupancy and waitlist rates at acute psychiatric facilities for adults were lower than those among subacute and community residential facilities. We also found that most SUD treatment beds could be flexed to serve multiple ASAM levels of care (e.g., 3.2, 3.3, and 3.5). As a result, the denominator for bed occupancy rates at SUD treatment facilities included 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 a client receiving a different level of care. We therefore elected to report total occupancy and waitlist volume, as well as transfer requests, among

### TABLE 5
Descriptive Characteristics of Adult Psychiatric and SUD Treatment Facilities

<table>
<thead>
<tr>
<th>Facility Characteristics</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>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average n</td>
<td>Average n</td>
<td>Average n</td>
<td>Average n</td>
</tr>
<tr>
<td>Psychiatric facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bed occupancy rate(^a)</td>
<td>70.7% 3</td>
<td>94.4% 1</td>
<td>92.7% 4</td>
<td>NA</td>
</tr>
<tr>
<td>Waitlist volume(^b)</td>
<td>0.0% 3</td>
<td>7.4% 1</td>
<td>4.9% 4</td>
<td>NA</td>
</tr>
<tr>
<td>Transfer requests,(^c) higher level of care</td>
<td>NA NA</td>
<td>0.0% 1</td>
<td>2.6% 4</td>
<td>NA</td>
</tr>
<tr>
<td>Transfer requests,(^c) lower level of care</td>
<td>41.4% 2</td>
<td>13.7% 1</td>
<td>0.0% 4</td>
<td>NA</td>
</tr>
<tr>
<td>SUD treatment facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bed occupancy rate(^a)</td>
<td>60.5% 13</td>
<td>60.9% 9</td>
<td>55.7% 9</td>
<td>83.5% 18</td>
</tr>
<tr>
<td>Waitlist volume(^b)</td>
<td>0.6% 8</td>
<td>0.0% 8</td>
<td>10.1% 9</td>
<td>2.8% 15</td>
</tr>
<tr>
<td>Transfer requests,(^c) higher level of care</td>
<td>7.9% 11</td>
<td>4.1% 6</td>
<td>11.0% 8</td>
<td>8.6% 14</td>
</tr>
<tr>
<td>Transfer requests,(^c) lower level of care</td>
<td>2.1% 11</td>
<td>0.7% 7</td>
<td>13.7% 8</td>
<td>4.6% 18</td>
</tr>
</tbody>
</table>

NOTE: NA = not applicable. Averages represent median values, and n’s represent sample sizes for survey responses. In some instances, facilities were able to provide certain estimates but not others.

\(^a\) Bed occupancy rate is calculated as the percentage of beds occupied at the facility on the night prior to the date of our phone-based survey.

\(^b\) Waitlist volume is represented as a percentage of total beds at the facility.

\(^c\) Transfer requests are represented as a percentage of total beds at the facility. Among psychiatric facilities, transfers from acute care to a higher level of care are not applicable because acute is the highest level of care available. Among SUD treatment facilities, all levels of care are within ASAM level 3; therefore, we elected to compute total values and individual values.
SUD treatment facilities. We were unable to report estimates for child/adolescent psychiatric and child/adolescent SUD facilities, because the number of responses from these types of facilities were too small for the estimates to be meaningfully interpreted.

**Adult psychiatric bed need.** Using Equation 1 (see the “Methods” section), we estimated that Sacramento County requires 20.7 acute inpatient psychiatric beds per 100,000 adults (see Table 6). In absolute terms, this translates to 251 beds for adults. Additionally, we estimated that Sacramento County requires 27.6 subacute inpatient psychiatric beds per 100,000 adults (335 beds total). Lastly, we estimated that Sacramento County requires 24.9 community residential beds per 100,000 adults (302 beds total).

These estimates differ modestly from past estimates conveyed by subject-matter experts, who have typically projected a need of 25 to 30 beds per 100,000 adults at the acute level and 20 to 30 beds per 100,000 adults at the subacute level. In a recent statewide study, we 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. The Sacramento County estimate for acute beds is modestly lower than this estimate (20.7 versus 26.0 per 100,000 adults), while the estimate for subacute beds is modestly higher (27.6 versus 24.6 per 100,000 adults). Therefore, we have treated the statewide estimates of need as a reasonable alternative (see Table 6, estimate 2), alongside the state-level estimated need for community residential beds of 22.3 per 100,000 adults.

**Child/adolescent psychiatric bed need.** As noted above, we did not receive a sufficient number of responses ($n = 5$) across the three levels of care to model estimated need for child/adolescent psychiatric beds. We therefore directed our attention to normative and reference benchmarks. Drawing on our findings from our environmental scan, we selected two data sets from which to pull our lower-bound and higher-bound estimates. First, for the lower-bound estimates, we identified the prevalence of acute child/adolescent psychiatric beds throughout California based on a 2018 report published by the California Hospital Association. This figure was 8.1 acute beds per 100,000 children/adolescents in 2016. We applied the observed ratio of acute to subacute beds in California to estimate the expected need for child/adolescent psychiatric beds. A table is provided to summarize the estimated psychiatric bed need for both adults and children.
psychiatric subacute beds: 7.7 per 100,000 children/adolescents. Because of 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/adolescent psychiatric beds as 18.0 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/adolescent psychiatric beds per 100,000 children/adolescents. Using these findings, we specified a higher-bound estimate of 9.2 acute beds per 100,000 children/adolescents and 8.7 subacute beds per 100,000 children/adolescents, again relying on a ratio of 1.06 acute beds for every 1.00 subacute adult bed. We also note from our review of the literature that estimates varied widely across geographic settings—for example, the United Kingdom has reported their inpatient child/adolescent psychiatric beds as 3.4 per 100,000 while New York has reported its capacity as 38.2 per 100,000.

For child/adolescent community residential treatment facility beds, we selected a reference estimate of 44.3 residential treatment facility beds per 100,000 children/adolescents (Table 6, estimate 3) based on a 2017 review by Lynch and colleagues. The authors produced estimates of residential treatment facilities for children/adolescents throughout the United States, using National Mental Health Services Survey data, and they concluded that the United States has 3.4 per 100,000 while New York has reported its capacity as 38.2 per 100,000.

Child/adolescent SUD treatment bed need. Similar to our analysis of child/adolescent psychiatric facilities, we did not receive enough responses (n = 1) to directly model estimated need for child/adolescent SUD treatment beds across all three levels of care. Therefore, we consulted a set of reference benchmarks like those that we used for adult SUD treatment facilities. According to the U.S. inventory that we computed (see the appendix), if Sacramento County were to use California as its benchmark (9.9 beds per 100,000 children/adolescents), it would require 37 beds to align its capacity with statewide capacity (Table 7, estimate 1). By contrast, if Sacramento County were to choose to align its capacity with the U.S. median (42.7 beds per 100,000 adults), this would require 518 beds.

Adult SUD treatment bed need. Using Equation 2a (see the “Methods” section), we estimated that Sacramento County requires 34.7 SUD treatment beds per 100,000 adults. In absolute terms, this translates to 417 beds. Equation 2b, which assumes double counting of facilities across ASAM levels, derived a more modest estimated need of 30.0 SUD treatment beds per 100,000 adults, or 365 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 compared with 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. Using measures from the 2015 National Survey of Substance Abuse Treatment Services, including the Affordable Care Act (ACA we computed SUD treatment bed capacity for all 50 U.S. states (see the appendix for the complete U.S. inventory) to contextualize Sacramento County’s capacity relative to California and other states. If Sacramento County were to use California as a benchmark (46.2 beds per 100,000 adults), it would require 561 beds to align itself with this statewide capacity. By contrast, if Sacramento County were to choose to align its capacity with the U.S. median (42.7 beds per 100,000 adults), this would require 518 beds.
U.S. median (15.6 per 100,000 children/adolescents), it would require 58 beds (Table 7, estimate 2).

**Gap Analysis**

**Psychiatric beds.** Using Equation 1, we estimated that Sacramento County has a surplus of 342 beds at the acute level (see Table 8). However, this model also estimates that Sacramento County has a shortage of 253 subacute beds and 40 community residential beds. When using statewide psychiatric bed needs as a benchmark (Table 8, estimate 2), we observed similar results: a surplus of acute beds, a shortage of subacute beds, and a considerably smaller shortage of community residential beds.

Using statewide and international reference points for child/adolescent psychiatric beds, we observed a similar—albeit smaller—surplus of acute beds; however, there was a shortfall of 28 to 32 beds at the subacute level, and a considerably larger shortfall at the community residential level in the range of 64 (Table 8, estimate 3) to 130 (Table 8, estimate 4) beds.

**SUD treatment beds.** Assuming that Sacramento County is not positioned to further develop infrastructure and service lines that correspond to ASAM levels 2 and 4 services, survey responses would indicate a potential surplus of existing beds (estimate 2). These findings differ considerably from statewide and national benchmarks for SUD treatment bed infrastructure. Relative to California’s average rate of 46.2 beds per 100,000 adults (estimate 3), Sacramento County has a shortfall of 146 beds. When compared with the national average rate of 42.7 beds per 100,000 adults (estimate 4), Sacramento County has a shortfall of 103 beds.

When examining child/adolescent SUD treatment beds, we found that Sacramento County has a shortfall of 25 beds (6.7 beds per 100,000 children/adolescents) compared with the state-level average and 46 beds (12.4 beds per 100,000 children/adolescents) compared with the national average.

**Secondary Analyses: Projected Need and Difficult-to-Place and Out-of-County Populations**

**Projected need for psychiatric beds.** Using CHIS data from 2011 to 2018, we were able to examine prevalence of SPD across three different 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), among individuals under versus over age 65 (10.0 percent versus 5.9 percent),
### 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 (Eq. 2a)</td>
<td>–2</td>
<td>–5</td>
<td>–0.2</td>
</tr>
<tr>
<td>Estimate 2 (Eq. 2b)</td>
<td>50</td>
<td>119</td>
<td>4.1</td>
</tr>
<tr>
<td>Estimate 3</td>
<td>–146</td>
<td>–344</td>
<td>–12.0</td>
</tr>
<tr>
<td>Estimate 4</td>
<td>–103</td>
<td>–244</td>
<td>–8.5</td>
</tr>
<tr>
<td>Child/adolescent SUD treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>beds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimate 1</td>
<td>–25</td>
<td>–58</td>
<td>–6.7</td>
</tr>
<tr>
<td>Estimate 2</td>
<td>–46</td>
<td>–108</td>
<td>–12.4</td>
</tr>
</tbody>
</table>

**SOURCE:** Unless otherwise indicated, all estimates are derived from 2015 National Survey of Substance Abuse Treatment Services (Bouchery, 2018).

**NOTE:** Negative values in red represent shortfalls in the number of beds required to meet expected bed need. Positive values represent surpluses in the number of beds required to meet expected bed need. Bed days estimated as reported mean length of stay multiplied by number of beds.
among Hispanic versus non-Hispanic residents (9.4 percent versus 8.4 percent), and among Black versus White residents (9.6 percent versus 8.4 percent). According to California’s Department of Finance, the adult population of Superior region (inclusive of Sacramento County) is anticipated to grow by 3.9 percent from 2021 to 2026, while shifting demographically with an increase of 2.9 percent of adults aged 65. The region will also diversify slightly, with a 0.3-percent increase in Black residents and a 0.8-percent increase in Hispanic residents. Drawing on the balance of these trends, we estimated that the need for adult psychiatric beds would increase only by 2.9 percent from 2021 to 2026.

Difficult-to-place populations. All facility directors with whom we spoke reported on difficult-to-place populations in response to the following prompt: “Does your facility place individuals who have . . .?” Each facility director was then asked about a list of population characteristics shown in Table 10. Because the number of responses from administrators at child/adolescent facilities was so limited, we elected to combine administrator responses for children/adolescents and adults on this subject.

Overall, we found that the most difficult-to-place populations at psychiatric facilities were individuals with dementia (0 percent), nonambulatory individuals (0 percent), and individuals who required oxygen (8 percent). The most difficult-to-place populations at SUD treatment facilities were individuals with a past sex offense (5 percent), nonambulatory individuals (21 percent), and individuals with an arson conviction (21 percent). We also observed that a minority of SUD treatment facilities reported accepting Medi-Cal patients.

Out-of-county residents. Lastly, we asked facility directors to report the percentage of individuals who reside outside Sacramento County. This analysis was limited to facilities that place adults, because we lacked sufficient data to include facilities that place children/adolescents. Among psychiatric facilities, we found that out-of-county residents represented 0 percent of patients in acute facilities (n = 3 facility administrator respondents), 27.5 percent of patients in subacute facilities (n = 1 respondent), and 2.6 percent of patients in community residential facilities (n = 4 respondents). Among SUD treatment facilities, we found that 26.4 percent of individuals receiving ASAM level 3.5 services (n = 12 respondents), 25.6 percent of individuals receiving ASAM level 3.3 services (n = 8 respondents), and 6.9 percent of individuals receiving ASAM level 3.2 services (n = 9 respondents) reside outside Sacramento County.

Discussion and Recommendations

Understanding the Shortage of Psychiatric Beds

Shortage among adult beds. We estimated that Sacramento County has a shortfall of approximately 230 adult subacute beds (estimate 1, 253 beds; estimate 2, 216 beds) for psychiatric care and 25 adult community residential beds (estimate 1, 40 beds; estimate 2, 9 beds). By contrast, the county appears to have a surplus of about 300 acute psychiatric beds for adults (estimate 1, 342 beds; estimate 2, 278 beds). These observations are supported by responses from facility administrators to our phone-based survey. Acute psychiatric facilities reported, on average, a 71-percent bed occupancy rate, which is below a typical target occupancy rate of 85 percent. Additionally, facilities reported no patients on waitlists, and they expressed a desire to transfer more than 40 percent of their patients to a lower level of care if they were able. However, facilities offering lower levels of care (subacute, community residential) reported bed occupancy rates of more than 90 percent and standing waitlists for prospective patients. Thus, it is very likely that patients become stuck in acute psychiatric facilities.

We suspect that an additional reason for the surplus of acute beds in Sacramento County is the fact that two facilities recently opened in December 2021. Collectively, the two facilities have more than 130 beds. One of the facilities reported that, while they have more than 100 beds, they are not operating at full capacity. We expect that our results would change if these facilities were not opened during our analysis. Future work should determine whether the introduction of these two acute psychiatric facilities
# 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 (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>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% (6)</td>
<td>69% (13)</td>
<td>0% (1)</td>
</tr>
<tr>
<td>Traumatic brain injury</td>
<td>33% (6)</td>
<td>77% (13)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Eating disorder</td>
<td>33% (6)</td>
<td>69% (13)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Co-occurring ID(^a)</td>
<td>50% (6)</td>
<td>85% (13)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Co-occurring SUD or MI(^b)</td>
<td>0% (6)</td>
<td>100% (13)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Co-occurring health issues</td>
<td>33% (6)</td>
<td>92% (13)</td>
<td>0% (1)</td>
</tr>
<tr>
<td>Justice system involvement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arson conviction</td>
<td>33% (6)</td>
<td>33% (12)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Sex offense conviction</td>
<td>33% (6)</td>
<td>8% (12)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Other forensic category(^c)</td>
<td>33% (6)</td>
<td>83% (12)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Incompetent to stand trial</td>
<td>17% (6)</td>
<td>80% (10)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>History of violence</td>
<td>50% (6)</td>
<td>62% (13)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Murphy’s conservatees(^d)</td>
<td>33% (6)</td>
<td>NA</td>
<td>100% (1)</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>50% (6)</td>
<td>92% (13)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Requiring oxygen</td>
<td>17% (6)</td>
<td>46% (13)</td>
<td>0% (1)</td>
</tr>
<tr>
<td>Nonambulatory</td>
<td>0% (6)</td>
<td>15% (13)</td>
<td>0% (1)</td>
</tr>
<tr>
<td>COVID-19 positive</td>
<td>17% (6)</td>
<td>15% (13)</td>
<td>0% (1)</td>
</tr>
<tr>
<td>Monolingual, Spanish-speaking</td>
<td>83% (6)</td>
<td>58% (12)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Monolingual, non-English-speaking (other)(^e)</td>
<td>50% (6)</td>
<td>27% (11)</td>
<td>100% (1)</td>
</tr>
<tr>
<td>Insured by Medi-Cal</td>
<td>50% (6)</td>
<td>38% (13)</td>
<td>100% (1)</td>
</tr>
</tbody>
</table>

NOTE: Parenthetical values represent the denominator (number of respondents) for each percentage. ID = intellectual disability; MI = mental illness.
\(^a\) Asked of psychiatric facility administrators.
\(^b\) Asked of SUD treatment facility administrators.
\(^c\) Other forensic category includes forensic cases other than a conviction of arson or sexual assault.
\(^d\) Murphy’s conservatees are individuals who have a conservator with the authority to place that individual in a state hospital or psychiatric facility involuntarily.
\(^e\) Monolingual individuals who speak a language other than English or Spanish, such as Arabic, Mandarin, or Filipino.
changes the need for psychiatric beds at the acute level over time.

Estimates of psychiatric bed need were similar when comparing both sets of estimates—i.e., estimates based on observed outcomes from facility administrator interviews and those based on estimates derived from our earlier statewide report, which included the input of a technical expert panel. Therefore, we have greater confidence in the reliability of these estimates compared with estimates in other categories for which we had limited primary and secondary data (particularly for child/adolescent psychiatric and SUD beds).

In terms of projected bed need, we concluded that Sacramento County will need just shy of 3 percent more adult psychiatric beds from 2021 to 2026. This shift is predominately due to overall population growth over this period. To a lesser extent, increasing racial/ethnic diversity will also contribute because epidemiological data throughout California indicate that Hispanic and Black residents have modestly higher rates of SPD—and, by extension, use of inpatient psychiatric services—compared with their White counterparts.

**Shortage among child/adolescent beds.** Based on secondary data from California, other parts of the United States, and internationally, it appears that children/adolescents in Sacramento County are in a similar situation to adults: Namely, there is a surplus of approximately 80 beds at the acute level (estimate 1, 83 beds; estimate 2, 79 beds). However, this is offset by a shortage of about 30 beds at the subacute level (estimate 1, 28 beds; estimate 2, 32 beds) and 100 beds at the community residential level (estimate 1, 64; estimate 2, 130).

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/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, Sacramento County could consider these benchmarks as a first step in realizing broader coverage for children/adolescents.

We note that the structure of community-based residential services for children/adolescents differs meaningfully from those for adults. Specifically, Sacramento County contains multiple crisis residential facilities for young persons, and these facilities could be conceived as providing acute care (because they offer emergency services) or community-based care (because they are alternatives to hospital-based services). We elected to classify these facilities in the acute care category. If they were instead classified as community residential care, the surplus of acute psychiatric beds would shrink, as would the shortage of community-based beds. However, even if one were to collapse psychiatric beds for children/adolescents across all levels of care, we would still find a shortage of roughly 10 to 80 beds, depending on which benchmarks were prioritized.

**Understanding the Shortage of SUD Treatment Beds**

**Shortage among adult beds.** Using survey responses from SUD treatment facilities, we estimated that Sacramento County has a relatively adequate number of beds for adults: If patients were unable to be easily transferred to higher or lower levels of care (i.e., ASAM level 2 or 4 services), the county would be short by roughly two beds; otherwise, if transfers could happen effectively, the county would have a surplus of beds. Among the 18 facilities that we surveyed, the average bed occupancy rate was 83.5 percent, almost meeting the standard threshold of 85-percent bed occupancy—implying that facilities are operating at expected levels. However, we did observe longer waitlists for lower level, community residential detoxification services, where about one in ten patients were on a waitlist.

Interestingly, when we compared Sacramento County SUD treatment bed capacity for adults with the capacity in both California and in the United States more generally, we found that Sacramento County had considerably lower capacity. Using California as a reference point, we would have expected Sacramento County to have 146 more SUD treatment beds than it currently has; using U.S. median bed capacity as a reference point, we would have
expected Sacramento County to have 103 additional SUD treatment beds for adults than it does. One possibility for this shortage is that rates of SUDs among adults in Sacramento County are lower than they are elsewhere, leading facilities to effectively balance supply and demand. However, California data on ED visits for alcohol and other drug diagnoses suggest that rates of SUDs in Sacramento County are in line with the rest of the state. An alternative and potentially more concerning interpretation of this shortage is that these facilities maintain stable bed occupancy rates by excluding a high-needs segment of the population that might otherwise overwhelm their system—namely, patients insured by Medi-Cal. We observed that fewer than one-half of SUD treatment facilities reported accepting Medi-Cal as a form of insurance.

**Shortage among child/adolescent beds.** Similar to psychiatric beds for children/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/adolescent SUD treatment beds, we found that Sacramento County has a deficit of roughly 25 beds; compared with national coverage, Sacramento County has a deficit of 46 beds.

### Identifying Difficult-to-Place and Out-of-County Populations

We found that several populations were disproportionately difficult to place in psychiatric and SUD treatment beds throughout Sacramento County. A majority of psychiatric facilities stated that they were unable to place individuals with dementia, nonambulatory individuals, individuals who require oxygen, individuals with co-occurring health issues, individuals with an arson or sex offense conviction, and individuals who are COVID-19 positive. Likewise, a majority of SUD treatment facilities stated that they were unable to place individuals with a prior arson or sex offense conviction, nonambulatory individuals, individuals who require oxygen, individuals who are COVID-19 positive, individuals who speak a language other than English or Spanish exclusively, and individuals who are insured by or are seeking payment through Medi-Cal. Based on these observations, it is likely that such individuals may find themselves stuck in an inappropriate level of care or entirely denied services.

Survey respondents generally stated that patients at their facilities were, by and large, residents of Sacramento County. Among psychiatric facilities, fewer than 5 percent of patients reside outside Sacramento County, although the one survey respondent representing a subacute facility stated that more than one-quarter of its patients (27.5 percent) reside outside Sacramento County. Given this finding, it is unlikely that placements from outside Sacramento County are driving higher bed occupancy rates, although the survey results may reflect underreporting and misreporting as a function of social desirability bias. This narrative differs for SUD treatment facilities, in which one-quarter of clients (25 percent) receiving ASAM level 3.3 and 3.5 services reside outside Sacramento County. The frequent exclusion of clients seeking to pay through Medi-Cal insurance suggests that high-needs Medi-Cal recipients in Sacramento County may be underserved and in need of beds that specifically address their needs.
Recommendations

Drawing on the findings described above, we offer three recommendations to Sacramento County and CalMHSA.

1. Focus on Addressing the Shortage of Psychiatric Beds at Lower Levels of Care and for Difficult-to-Place Populations—including Those with Comorbid Dementia

Sacramento County appears to have a surplus of acute psychiatric beds for adults and (potentially) children/adolescents that is largely offset by a shortage of beds at subacute and community residential facilities. One potential short-term solution to this might be to increase the number of beds at lower levels of care by expanding infrastructure. Figure 1 provides the geographic layout of existing infrastructure. Investments in new infrastructure should consider such factors as construction costs, geographic proximity to populous areas, and equity regarding the types of communities that most likely need to be served.

It is possible that removing the bottleneck of transfers from higher to lower levels of care (either through expansion of infrastructure or through making beds at lower levels of care more broadly available to difficult-to-place populations) could lead to unsustainably low bed occupancy rates at the acute care level. Sacramento County may therefore want to consider the potential to convert existing beds to meet the needs at these lower levels of care. This has been accomplished in other settings, both within and outside the United States, including by using swing bed models; however, whether this approach is realistic in Sacramento County would depend on several factors, such as 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 individuals with comorbid dementia—not a single facility expressed an ability to accommodate such patients.

2. Focus on SUD Treatment Beds That Are Available for Sacramento County Residents Who Are Currently Difficult to Place—including Medi-Cal Recipients

Survey responses from 13 administrators of SUD treatment facilities indicated that more than one-quarter of beds are occupied by patients who reside outside Sacramento County and that fewer than one-half of surveyed facilities accept patients insured by Medi-Cal. These findings suggest that, although these facilities appear to have acceptable bed occupancy rates of around 84 percent and short waitlist volumes, their beds are not available to many high-needs individuals who reside in Sacramento County. This observation may also account for the difference in the estimated need for SUD treatment beds in Sacramento County based on (1) observed outcomes from facility survey responses 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, this practice may result in patients jockeying for a limited number of spaces.

If Sacramento County were to anchor on either of these reference benchmarks, this would indicate a shortage of more than 100 SUD treatment beds for adults and another 30 to 40 beds for children/adolescents. However, the county would need to make sure that these beds are reaching target populations and that these investments are yielding expected systems-level outcomes—including that bed occupancy rates and service utilization are high enough to justify facilities’ continued operation.

3. Consider the Comparative Needs of Children/Adolescents and Adults, as well as the Comparative Quality of Underlying Information for Both

We found that bed shortages are considerably larger, in absolute terms, for adults compared with children/adolescents. However, as standardized rates of need, these estimates are often comparable. For example, Table 9 indicates that there is a shortfall of approximately 100 to 150 SUD treatment beds for adults compared with a shortfall of 30 to 40 beds for children/adolescents. However, the child/adolescent population...
is much smaller than that of adults in Sacramento County. Once this underlying information is factored into the equation, the gap is relatively similar: There are about 6.7 to 12.4 additional beds needed per 100,000 children/adolescents and 8.5 to 12.0 additional beds needed per 100,000 adults.

As stated in the “Results” section, we were able to identify substantially more primary and secondary data on psychiatric and SUD treatment beds for adults compared with children. In fact, the absence of literature on normative estimates of need for services among children/adolescents is unsettling. Thus, Sacramento County should place greater confidence in the estimates that we report on adults, which may help inform the path that it pursues for making additional investments in infrastructure. Given the tenuousness of information availability on children/adolescents, we also recommend that—if Sacramento County were to expand bed capacity—the county should track outcomes of these investments over time, including bed occupancy rates, waitlist volume, and bottlenecks that inhibit transfers to higher and lower levels of care.

Limitations

We note several study limitations. First, our analysis was limited by the quality of state licensing data. Licensing data did not contain all of the information that we required to categorize providers or to discern the number of beds reserved for adults versus children/adolescents. Therefore, we relied on supportive engagement with Sacramento County’s Department of Health Services, as well as the feedback that we received from facility administrators. When confirming the presence of beds in each facility, we encountered other issues: The location was closed, or it did not have any beds. These issues suggest that licensure data may be outdated and require more frequent revision.

Second, our estimates of psychiatric and SUD treatment bed need relied on information from a relatively small number of facilities—from psychiatric inpatient facilities, in particular. In the case of facilities that supported children/adolescents, these numbers were so small, we did not feel comfortable relying on them as the basis for our estimates. For facilities that supported adults, we received a larger number of estimates; however, the reliability of these estimates could be improved—for example, by requiring or requesting facility administrators to report relevant statistics to the Department of Health Services on a regular basis.

Lastly, our analysis is subject to potential sources of bias—in particular, social desirability bias. Survey respondents who may have wanted to be perceived favorably or to avoid potential challenges may have overstated the availability of beds for difficult-to-place populations or underreported the number of beds occupied by patients who reside outside Sacramento County. To avoid recall bias, we asked survey respondents to report on current information, such as bed occupancy on the night prior to our call rather than reporting on a longer time period.

Conclusions

We estimate that Sacramento County requires greater capacity for both psychiatric and SUD treatment beds. In terms of psychiatric beds, this need is particularly urgent at lower levels of care (subacute, community residential); for SUD treatment beds, urgency of need is most pronounced for Sacramento County residents who are insured by Medi-Cal. 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 Sacramento County, and that—with higher-quality information available over time—Sacramento County 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 with which we compare Sacramento County.

<table>
<thead>
<tr>
<th>State</th>
<th>Population (2015)</th>
<th>Total Admissions</th>
<th>Beds per 100,000</th>
<th>Population (2015)</th>
<th>Total Admissions</th>
<th>Beds per 100,000</th>
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</thead>
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<td>25.0</td>
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<td>1,621,528</td>
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<td>9,116,418</td>
<td>771</td>
<td>9.9</td>
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<td>4,102,989</td>
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<td>Total Admissions</td>
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<td>44</td>
<td>37.1</td>
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SOURCE: Bouchery, 2018; U.S. Census Bureau, 2021b.
NOTE: NA = not available.
Notes


3. Sacramento County Mental Health Board, Performance of the Sacramento County Mental Health System, Sacramento, Calif.: Department of Health Services, October 2019; Technical Assistance Collaborative and Human Services Research Institute, California Mental Health and Substance Use System Needs Assessment, Sacramento, Calif.: Department of Health Care Services, February 2012.


6. See the “Estimation of Need: Approach 2” section for a description of our environmental scan. Overall, we likely reviewed about 200 articles, of which we selected a small number as the basis for our analysis and the findings summarized here. Specific articles selected for our comparisons are cited in the “Results” section.


9. W. Holt, Mental Health in California: For Too Many, Care Not There, Oakland, Calif.: California Health Care Foundation, March 2018a; J. E. Sherin, Addressing the Shortage of Mental Health Hospital Beds: Board of Supervisors Motion Response, Los Angeles: County of Los Angeles Department of Mental Health, 2019.


22. Reif et al., 2014.


27 W. Holt, Substance Use in California: A Look at Addiction and Treatment, Oakland, Calif.: California Health Care Foundation, October 2018b.


29 Holt, 2018b.

30 McBain, Cantor, and Eberhart, 2022.


37 McBain, Cantor, and Eberhart, 2022.


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About This Report

This report is intended to provide an evaluation of Sacramento County’s psychiatric and substance use disorder treatment bed needs in 2022. Sacramento County, like many U.S. counties and states, has confronted numerous challenges with service delivery, including inpatient care. To strategically build capacity, Sacramento County has sought to understand the gap between capacity and need for beds—at different levels of care. In this report, we examine this issue from multiple vantage points.

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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.