Solving Psychiatric and Substance Use Disorder Treatment Bed Shortages

How Many Beds to Build and Where to Build Them
Rates of suicide and overdose deaths peaked during the coronavirus disease 2019 pandemic and have remained high, leading government officials to declare a mental health crisis in the United States. More people than ever are seeking treatment, yet gauging need and responding to demand—by adjusting treatment supply accordingly—remains difficult for providers, treatment facilities, and policymakers. Inadequate supplies of treatment beds can lead to “boarding” in emergency departments, detention in correctional facilities, and use of unhoused services. At the same time, the Biden-Harris administration’s focus on addressing mental health needs in the United States, recent grants in 2022 and 2023 to fund behavioral health services, and the availability of billions of dollars in opioid settlement funds have presented a unique opportunity to consider how best to expand treatment options.

Amid this backdrop, RAND researchers developed a new framework—using multiple sources of information—to estimate the need for psychiatric and substance use disorder (SUD) treatment beds. They applied this framework to a statewide analysis in California and, subsequently, three regions within the state (Figure 1). This research brief details the challenges with measuring behavioral health treatment bed shortages and the approach that RAND researchers took across four studies to address these challenges, which could be employed more broadly to determine future investments in bed infrastructure.
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Policymakers determining budget allocations for psychiatric and SUD treatment services require evidence on the magnitude and distribution of needs to help inform their investments. This information includes investments in residential or inpatient psychiatric and SUD beds, which vary based on level of care (Table 1). Psychiatric facilities provide treatment services for a specific level of care, whereas SUD treatment facilities often serve multiple levels of need at once.

A major hurdle in solving this problem is a poor understanding of the extent of potential bed shortages at local and state levels. No standard measure of need exists for these types of treatment beds, and information on psychiatric or SUD treatment bed capacity is often unavailable below the state level. Surveys have quantified the prevalence of mental health conditions and SUDs, but not all individuals with these diagnoses need a treatment bed.

State and local governments need detailed estimates that identify which localities are experiencing the greatest shortages or surpluses, which types of treatment beds are required, and which populations require beds. Quantification of this information can inform decisionmakers on where to allocate resources to expand bed capacity to meet current and projected needs.

### TABLE 1

**Conditions, Levels of Care, and Descriptions**

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>LEVEL OF CARE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>Psychiatric</td>
<td>Acute</td>
<td>Crisis stabilization for a short period, located at hospitals or psychiatric health facilities</td>
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<tr>
<td></td>
<td>Subacute</td>
<td>Longer-term recovery-oriented services with intensive supervision, often at institutions for mental disease, mental health rehabilitation centers, and skilled nursing facilities with specialized treatment programs</td>
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<tr>
<td></td>
<td>Community residential</td>
<td>Homelike environment that offers more independence, with stays potentially lasting for several years, often at enhanced or augmented board and care facilities</td>
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<tr>
<td>SUD</td>
<td>Clinically managed residential services</td>
<td>Intensive care to stabilize and maintain SUD symptoms with the goal of recovery</td>
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Counting Treatment Beds Is Not Enough

Subtracting total bed capacity from total bed need to assess the shortage is insufficient: This method obscures important differences in levels of care. Instead, estimates need to be generated at each level of care to determine bottlenecks that may keep a patient stuck in one level of care when a higher or lower level of care may be more appropriate.

Similarly, overall service utilization may gloss over unique challenges among subpopulations. Many facilities do not accept individuals with prior involvement in the criminal justice system, those with such physical health comorbidities as dementia, and those who either are enrolled in Medicaid or are uninsured. Calculations of supply and demand for a given level of care should be complemented with analyses that consider patient eligibility to avoid incorrect conclusions.

RAND’s Approach to Solving the Problem

In response to these challenges, RAND researchers developed an approach to identifying bed shortages using methods that triangulate numerous data sources. First, they calculated an estimate of capacity using publicly available licensure data from state regulatory agencies. Because licensure data are routinely out of date, the research team also surveyed facility administrators to confirm or revise total bed capacity estimates.

Researchers also assessed occupancy rates, average length of stay, wait list volume, the number of patients who need to be transferred to a higher or lower level of care, and the types of subpopulations served at the facility. By combining these variables, the research team generated an estimate of need at each level of care. This method can more accurately capture need at each level of care—and with greater specificity to the locality of interest—than utilization rates alone.

The research team complemented its observation-based estimates for acute and subacute adult psychiatric bed need with estimates based on expert consensus. For populations and conditions in which expert consensus estimates were less readily available, such as for child and adolescent psychiatric beds, the research team instead used reference estimates of optimal bed capacity from other municipalities. Each estimate of need (i.e., observed outcomes, expert consensus, or reference estimates) was separately subtracted from observed bed capacity to derive an estimate of the shortage or surplus. When different estimates of need produced similar results, confidence in the validity of each estimate increased.
Findings and How They Can Inform Policy

In the statewide analysis, RAND researchers found that there was a shortfall of psychiatric beds at all three levels of care; the largest shortage was at the community residential level (Figure 2). The community residential shortage also led to bottlenecks at the higher levels of care, especially for subacute facilities, which reported a desire to transfer up to one-third of their patients to a community residential level but were unable to do so because of lack of availability. One of the drivers of these shortages was that most facilities were not placing individuals with serious physical health conditions or those with prior involvement in the criminal justice system.

During the assessment of individual counties in California, another major bottleneck, which pertained to acute psychiatric facilities, became apparent: These facilities reported being unable to transfer up to one-half of their patients to the subacute level, despite subacute care being a more appropriate setting.

For SUD beds, results were consistent across counties: When the researchers analyzed counties based on reference cases, the counties appeared to have shortages; when they ana-
lyzed counties based on observed volume and bed occupancy rates, counties appeared to have surpluses. A likely reason for this discrepancy is that SUD facilities maintain a lower bed occupancy rate by excluding high-need populations that might otherwise overwhelm their systems, or they decline to take patients with types of insurance that do not offer strong reimbursement rates. Indeed, facility surveys revealed that many SUD treatment facilities did not accept patients with prior involvement in the criminal justice system, those with co-occurring health issues, and those enrolled in Medicaid. As a result, beds remained vacant even as community needs for these beds persisted.

The findings across these studies helped formulate policy recommendations for state and local governments. The statewide analysis suggested the need for increasing bed infrastructure at all levels of care, especially for community residential facilities. However, this recommendation cannot be generalized to every region in the state, because several of our county-specific analyses suggested that the greatest need for investment was at the subacute level of care. Again, this emphasizes the importance of local analyses, not just a statewide analysis.

Given surpluses in some areas and levels of care, one possibility for expanding bed capacity would be to convert existing beds to a different (higher or lower) level of care. Across all the studies, the results suggested a need to improve the eligibility of psychiatric and SUD treatment bed placement for hard-to-place populations. Since the publication of these studies, the state of California has begun the process of implementing these recommendations through its grants, legislation, and ballot initiatives.

Where to Go from Here

The methods used in these four studies represent progress in estimating psychiatric and SUD treatment bed shortages. Although this approach has been implemented only in California thus far, the paradigm could be replicated in any county or state aiming to generate a more accurate estimate of psychiatric or SUD treatment bed need. However, quantifying observed outcomes, such as wait times, bed occupancy levels, and requested transfers to higher and lower levels of care, may require primary data collection that includes administering surveys to individual treatment facilities.

An important caveat about the estimates in these studies is that they are for a single point in time. Future analyses should document changes at multiple time points to enhance the reliability of estimates. With such estimates in hand, policymakers could anticipate and avert shortages by expanding capacity in response to growing needs. Calculating bed shortages before and after expansion of psychiatric bed infrastructure could also help in determining whether increases in supply have adequately addressed population needs. Evaluations could also quantify the benefits of these investments on patient outcomes, including changes in rates of overdose, suicide, incarceration, and homelessness.
Notes


