

Hospital Capacity to Treat Mental Illness 1991-2005

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ACRONYMS

HSA	Health Service Agency
MISA	Mental illness or substance abuse
OOC	Out-of-County
OSHPD	Office of Statewide Health Planning and Development

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INTRODUCTION

In 1968, California began the national movement to deinstitutionalize the mentally ill by making it more difficult to hospitalize them involuntarily. Instead of treating them in state mental hospitals, they would be treated in community settings. Reality did not live up to the hopes of policymakers. California released the mentally ill but did not build community programs. The mentally ill who previously would have been sent to state hospitals had to fend for themselves, either on the streets, arrested and incarcerated for bizarre behavior the community is unwilling to tolerate, or in the nominal care of relatives ill-equipped to help them [1].

During the last 40 years, health providers learned a great deal about how to deliver recovery-oriented mental health care, improve service quality, achieve desired improvements in quality of life outcomes, and implement needed care systems in each community in America [3]. Today, our goal is a healthy life in the community for everyone.

As treatment knowledge increased, significant changes occurred in the number, capacity, structure, and operation of hospitals providing mental health services. Many people find services are inaccessible due to distance, cost, or coverage limitations. Others are able to access care, but services may not be evidence based; of the highest quality; respectful of the recipient's culture, race, and ethnicity; or recovery oriented [3].

We begin by briefly reviewing the history of hospital planning in California. Then we describe changes in the hospital infrastructure since California abandoned planning and evaluate the impact on utilization. The utilization analysis examines changes in patterns of admissions to appropriately licensed facilities and use of facilities out of the county (OOC) of residence. Our concerns about treating the mentally ill and substance abuse (MISA) population in appropriately licensed facilities and in their county of residence arise from equity as well as safety issues.

We concentrate the utilization analysis on the population age 15 to 44. At this life stage, MISA will have the most impact on family formation, family functioning, and intergenerational family health. Adults with psychiatric disorders or with co-occurring psychiatric disorders and substance abuse may be at least as likely, if not more likely, to be parents than other adults [4]. Depending on the level of severity, from two-thirds to about three-quarters of the mentally ill are parents. Having a MISA parent affects child development, and having two MISA parents greatly increases developmental risk. We close with a summary of our findings and recommendations.

Health Facilities Planning in California

In 1974, recognizing the rising costs of healthcare, fragmentation of health care delivery, and the nation's many unmet needs, Congress established a National Council on Health Planning and Development to develop national health planning guidelines [5]. This legislation authorized the Secretary of the Department of Health, Education, and Welfare to designate organizations in each area of the country to serve as the local Health Service Agency (HSA) [6].

Geographically, HSAs served a single county or cluster of contiguous counties that are relatively self-contained with respect to hospital care [7]. HSAs had quality, accessibility, continuity, and cost containment as their major goals [8]. Based on planning driven by local population health statistics, they had authority to recommend new programs that were needed and to stop expansions that were not needed. Focusing on its local area, each HSA would develop annual plans to improve health services, make grants to secure needed resources, approve or reject proposed funding for health programs, and evaluate the need for new or modernized health facilities. Every five years, HSA would evaluate the adequacy of health facilities in their area.

Paralleling the Federal effort, California established HSAs to advise about local health needs [9]. The newly formed Office of Statewide Health Planning and Development (OSHPD) had final decision-making authority. OSHPD described the review process as guiding the development of *needed* health facilities, services, and medical equipment while *preventing* the addition of unneeded or duplicative health facilities, services, and medical equipment [10].

After intense hospital industry lobbying, the California legislature suspended planning activities in 1983 and permitted hospitals to close or consolidate without state review effective January 1, 1987 [11]. Unlike 37 states that kept health planning in place [12], California deregulated its healthcare system, finding it "indispensable that providers of health care be free to engage in voluntary, cooperative efforts with consumers, government, or other providers of health care to fulfill the purposes of the health planning laws [13]." In 1993, California legislation authorized counties to eliminate or consolidate HSA boards [14]. The legislature repealed all provisions addressing hospital construction and health planning in 1995 [15].

In this planning vacuum, California experienced a significant increase in hospitals, particularly private for-profit psychiatric hospitals designed to serve the growing numbers of MISA who were not receiving community-based mental health services. During this time, many hospital consolidations, conversions, takeovers, and closures made it difficult to track what was happening at the community level [16-18]. The number of California hospitals peaked in 1990. The GAO later reported California had a net loss of 58 hospitals between 1990 and 2000, 6th highest in the nation for rural closures, and leading in urban closures with a net loss of 50 [19,20].

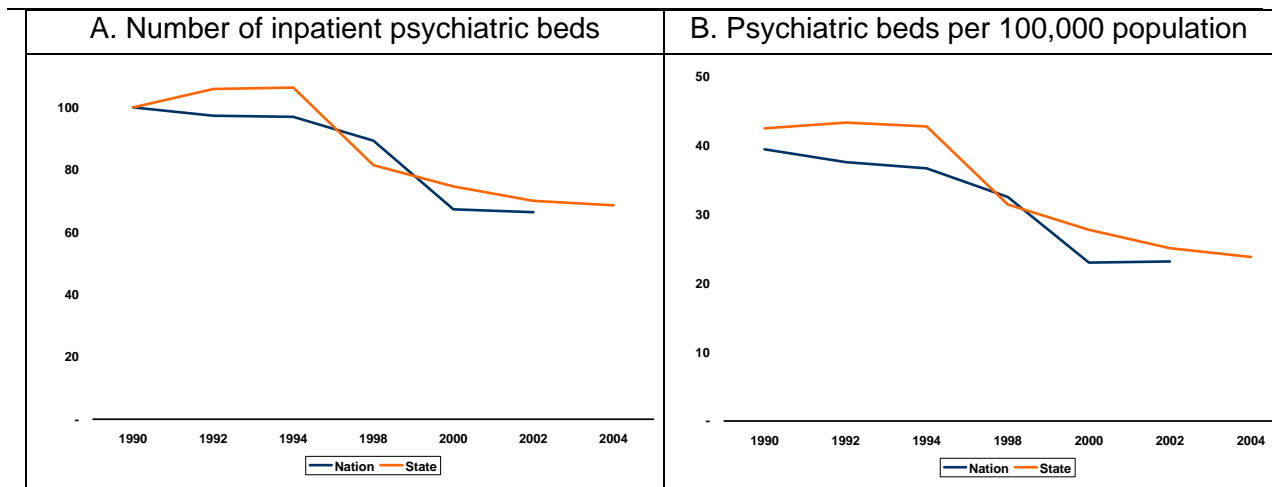
Other states that maintained formal health planning systems and related programs now rank much higher than California on Federal health indicators of adequate healthcare infrastructure [21-23]. States with more adequate infrastructure also had better results in containing cost. Maine has used its program as a driving force to obtain universal health coverage for its residents [24]. Michigan distributed health services more equitably by regulating utilization of facilities and equipment, and locating services by using consistent health planning tools [24]. A number of states established state funding mechanisms to pay for needed local services not covered by insurers [6]. There may be a relationship between planning laws and quality of care [25,26], since most regulations limit the number of hospitals that can offer high cost specialized services such as cardiac or spinal surgery.

Changes in Structural Capacity

National Comparison

In this context, we now begin to examine changes in California's hospital structural capacity for inpatient mental health services. Figure 1. compares California's structural changes for psychiatric inpatient treatment with national statistics for the period 1990 through 2004. National data are not yet available for 2004. Figure 1A compares the percent change in the number of inpatient psychiatric beds, where the number of beds in 1990 equals 100% [27,28]. Figure 1B compares inpatient beds normalized per 100,000 population [29-31].

Figure 1. Inpatient psychiatric bed availability California and US 1990-2004



Both in terms of number of psychiatric beds and beds adjusted per population, California was similar to the national average at period start and end, with slight differences in the middle. California maintained its number of beds and adjusted beds through 1994. This was followed by a steep decline until 1998, and a slower rate of change thereafter. By 2004, if the current pattern continues, California and the nation will level out. The 15 year period since 1990 saw a 50% loss of inpatient psychiatric beds per population. Between 1970 and 1990, bed capacity dropped 50% [32]. Thus, the rate of change for inpatient psychiatric care in the most recent 14 years is steeper than the preceding 20 years.

An important aspect of structural capacity and by inference health equity is the extent to which psychiatric care is accessible during acute phases of this illness. If resources are not available locally, people may do without care or travel great distances to get care. Nationally, beds per population are not distributed equally across the States or at the county-level within states.

Figure 2. Psychiatric inpatient and residential beds per 100,000 civilian population by state: United States, 2002

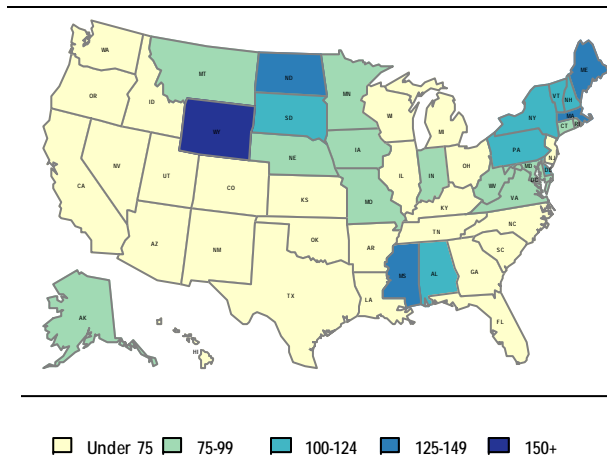


Figure 2. shows national availability of beds for all organizations providing residential mental health treatment (private psychiatric hospitals, general acute care, state or county mental hospitals, VA hospitals, residential treatment for children, and others) [34].

Today most states are in the lowest quintile nationally (less than 75 beds per population), with the West and Southwest particularly low.

In earlier periods, the map distribution would have shown about equal numbers in each category, with about 1 in 5 having 150 or more per population and 1 in 5 having less than 75.

Structural Changes in California

Table 1. summarizes longitudinal changes in California's state-level hospital capacity to care for the MISA population between 1994 and 2005. The enumeration of total facilities includes short- and long-term care facilities licensed by OSHPD [35]. Acute care includes short-term general and children's acute care hospitals. Psychiatric includes both short- and long-term specialty care. Other includes all other short- and long-term care facilities. The focus is on changes in the absolute number of facilities, emergency response capacity, beds, and physician availability.

Table 1. Changes in hospital structure, 1994 and 2005

Resource	Type	Total		% Total		Abs Change	
		1994	2005	1994	2005	N	%
Facilities	Total	586	460	100	100	-126	-22
	Acute Care	430	351	73	76	-79	-18
	Psychiatric	97	48	17	10	-49	-51
	Other	59	61	10	13	2	3
24-hour coverage	Emergency Room	396	326	68	71	-70	-18
	Psychiatric Emergency	78	58	13	13	-20	-26
Beds	Total	119,053	102,726	100	100	-16,327	-14
	Adult Psychiatric	9,557	6,809	8	7	-2,748	-29
	Adolescent Psychiatric	2,506	1,004	2	1	-1,502	-60
	Chemical Dependency	1,406	873	1.2	0.8	-533	-38
	Other	105,584	94,040	89	92	-11,544	-11
Physicians	Total	114,730	131,697	100	100	16,967	15
	Adult Psychiatrist	6,060	4,766	5	4	-1,294	-21
	Adolescent Psychiatrist	409	319	0.4	0.2	-90	-22

California lost 126 facilities (-22%). The greatest loss was stand-alone psychiatric facilities (-51%), psychiatric emergency rooms (-26%), psychiatric beds (adult (-29%), adolescent psychiatric (-60%), and chemical dependency beds (-38%). Although physicians with hospital-based privileges increased 15% over the period, psychiatrists with privileges decreased (adult (-21%), adolescent (-22%)). We emphasize that the count of physicians is hospital-based. Many physicians have privileges at several hospitals in their area.

Figure 3. Number of hospitals in county with adult psychiatric beds

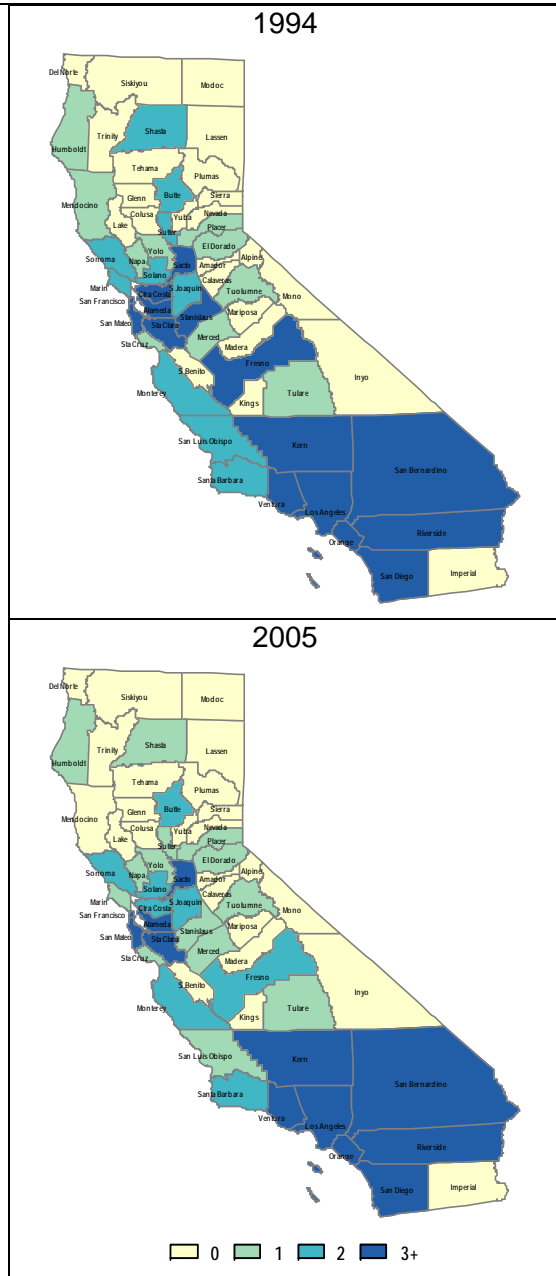


Figure 3 illustrates county-level changes between 1994 and 2005 in the number of hospitals with any licensed short or long-term adult psychiatric beds.

In 1994, 23 counties had no licensed capacity to provide inpatient care to the acutely mentally ill adult; in 2005, 24. The number of counties with 3 or more hospitals with psychiatric beds dropped from 14 to 11.

During a time of significant population increase, no county gained beds, several lost many beds, and one county lost all beds.

Figure 4. Number of hospitals in county with adolescent psychiatric beds

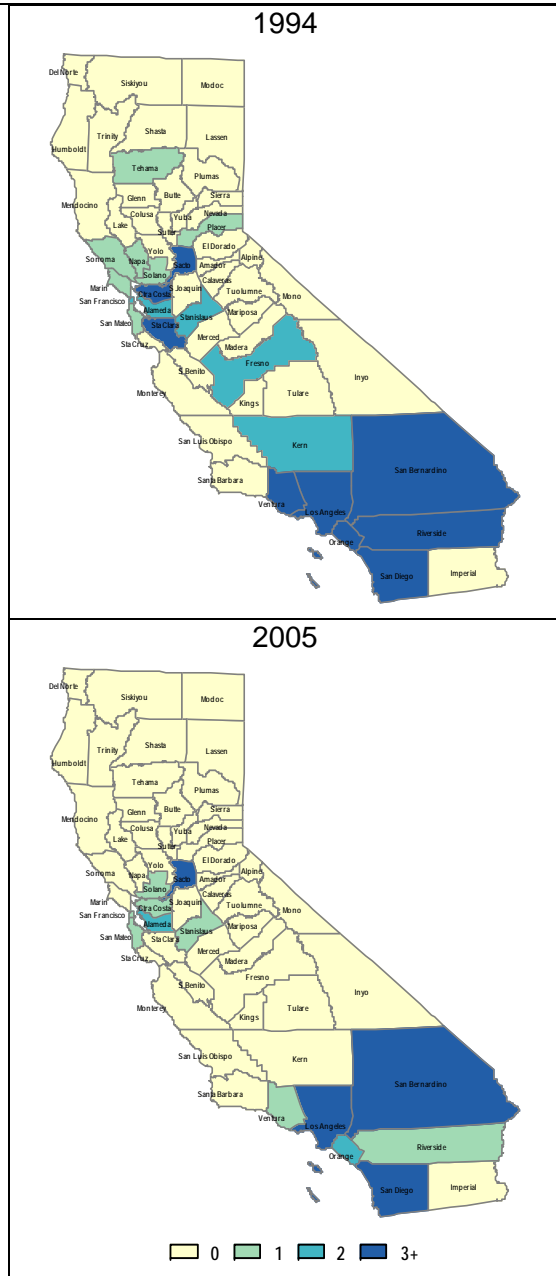


Figure 4 shows county-level distribution of hospitals with adolescent psychiatric beds.

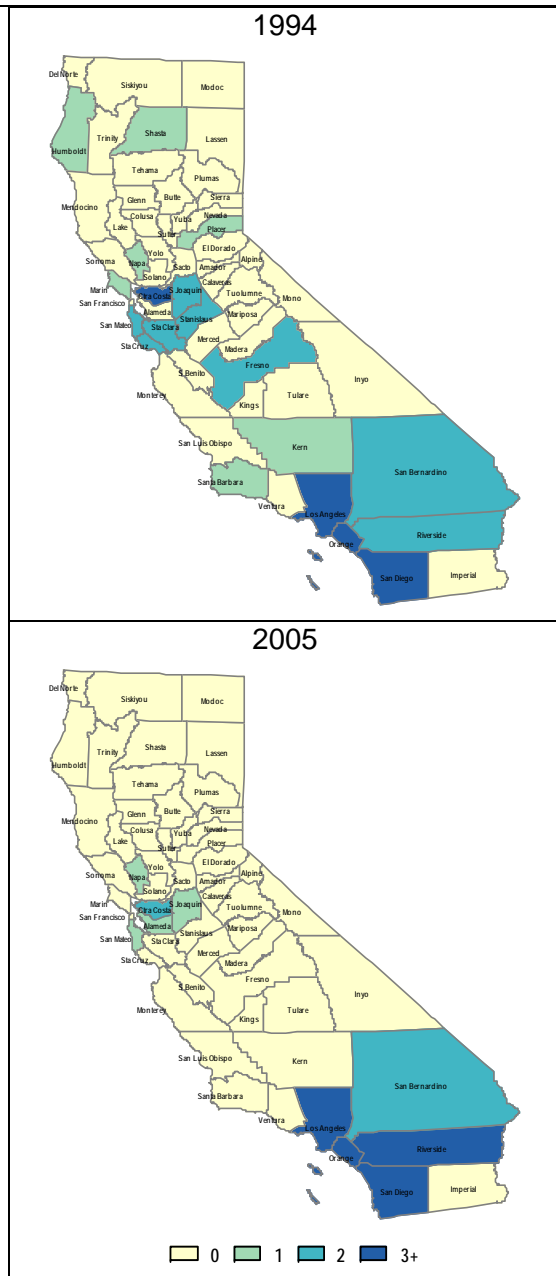
Most counties did not have any adolescent psychiatric beds in 1994 and far fewer have any in 2005. Throughout the period, Southern California had better adolescent coverage than Northern California.

Most adolescents needing inpatient care would have received care far from their home in 1994 and even farther in 2005.

In 2007, the California Department of Health and Welfare had five residential treatment facilities with 142 beds to provide care to severely mentally ill children under their supervision [36]. The Department of Social Services had 1,162 beds in RCL 13 or RCL 14 group homes for emotionally disturbed children [37]. These were available in 18 counties, of which 11 also had adolescent inpatient beds or residential treatment facilities.

Thus, 11 counties had inpatient psychiatric beds and residential treatment settings, 7 had treatment group homes, and 40 had no adolescent treatment capacity available in their community.

Figure 5. Number of hospitals in county with chemical dependency beds



Similar to other bed types, Figure 5 shows that geographic distributions of facilities with chemical dependency beds varied geographically and declined over time.

By 2005, chemical dependency beds clustered in the Bay Area and southern California.

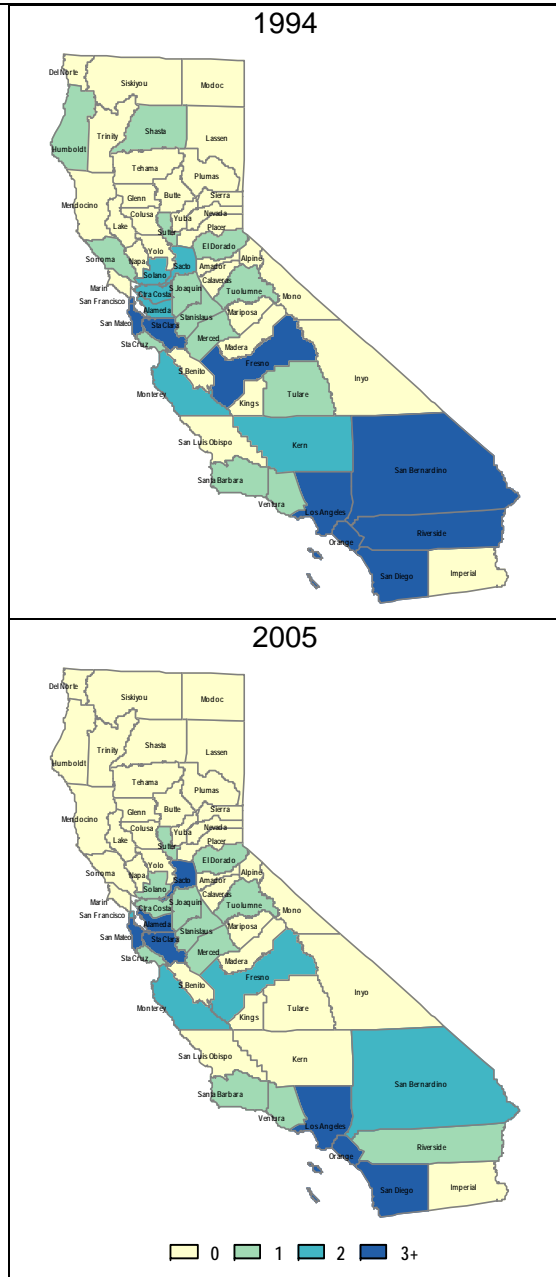
No chemical dependency beds are available north of Napa County.

Distances to inpatient treatment increased for residents of most counties.

The California Department of Alcohol and Drug Programs had 41,382 combined residential and day chemical dependency slots in 28 of California's 58 counties [38]. Ten of 28 counties with chemical dependency residence or day slots also had inpatient units.

Only 10 counties had the full range of chemical dependency treatment available. Residents of 18 counties could get residential or day treatment. Residents of 30 counties would have to travel OOC for licensed chemical dependency treatment.

Figure 6. Number of hospitals in county with 24-hour emergency psychiatric coverage



As counties lost inpatient capacity to treat the MISA population, Figure 6 shows that they also lost emergency rooms with 24-hour emergency psychiatric coverage.

The MISA population and their families had fewer resources available with emergency medical staff appropriately trained to respond to their problems during acute phases of their illness.

We summarized the structural data over each hospital annually to identify those with any licensed inpatient psychiatric capacity (adult or adolescent psychiatric, chemical dependency, or psychiatric emergency room).

Table 2. Hospitals with licensed psychiatric capacity

Capacity	Total		% Total		Abs Chng	
	1994	2005	1994	2005	N	%
Total	526	413	100	100	-113	-21
Some capacity	209	156	40	38	-53	-25
No capacity	317	257	60	62	-60	-19

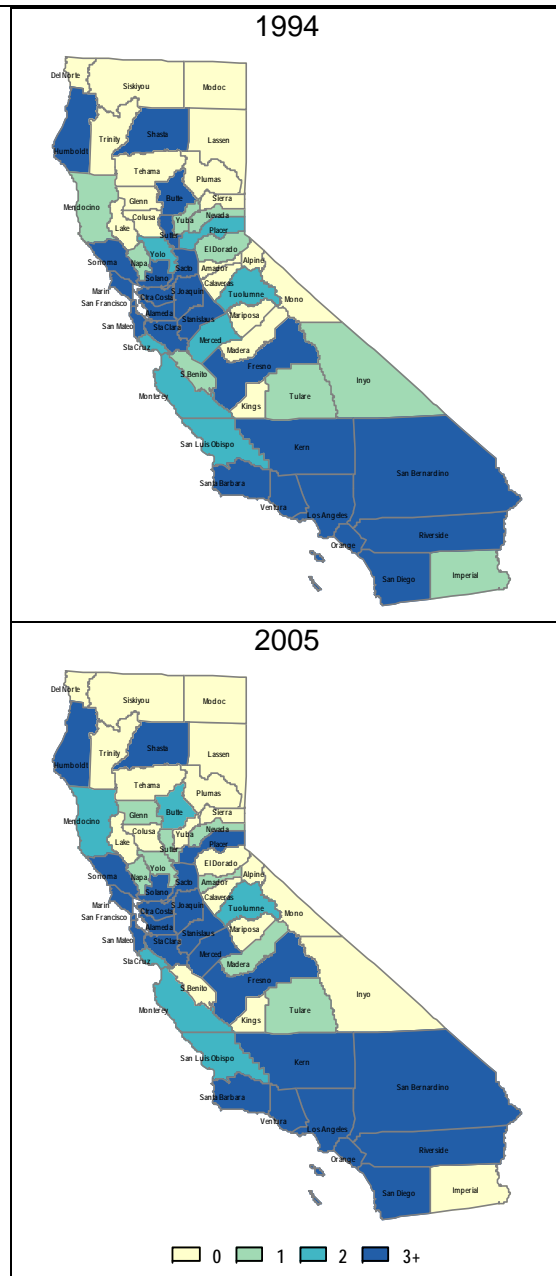
Table 2 shows at the hospital level the number of facilities with and without some specialized psychiatric capacity in 1994 and 2005. In both periods, about 40% of facilities open had some capacity.

Hospitals with some structural psychiatric capacity dropped 25%, hospitals with no such capacity dropped 19%. The difference in capacity loss was not statistically significant.

Availability of Psychiatrists

Figure 7 shows by county the number of hospitals with even one adult psychiatrist on the medical staff. In 1994, 18 counties had no psychiatrists. In 2005, 20 counties had no psychiatrists on medical staff.

Figure 7. number of hospitals in county with adult psychiatrists on staff



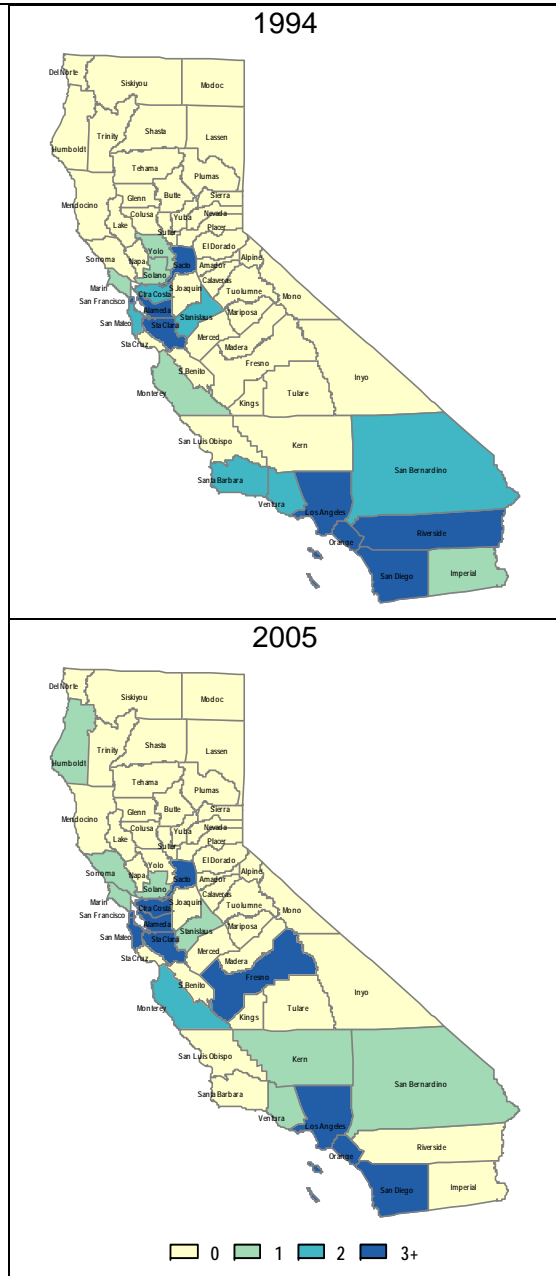
Here we see a discontinuity compared with Figure 3, hospitals with adult psychiatric beds.

Specifically, in 2005, some counties report adult psychiatrists on staff when they have no hospitals with licensed psychiatric beds.

For example, Glenn and Mendocino County hospitals reported no psychiatric beds in 2005 but one hospital in Glenn and two in Mendocino reported psychiatrists with practice privileges. Similar discrepancies are observed in other counties.

Even though beds are no longer licensed, psychiatrists are providing some inpatient oversight in some counties.

Figure 8. Number of hospitals in county with adolescent psychiatrists on staff



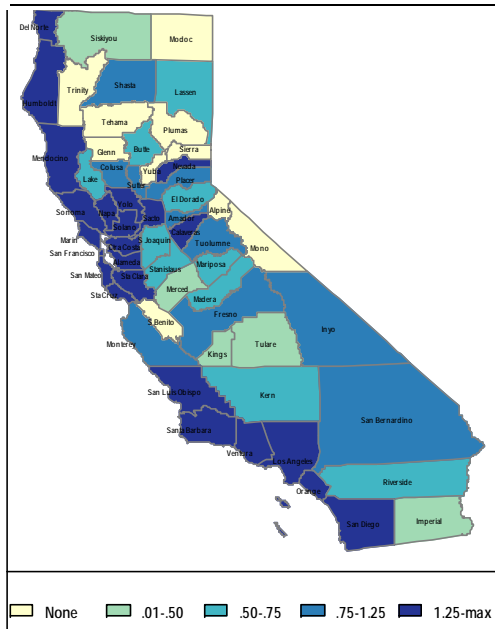
For adolescents needing inpatient psychiatric care, a different picture emerges when comparing Figure 4 (hospitals with adolescent beds) and Figure 8.

Several counties had adolescent beds but no adolescent psychiatrists.

For example, Fresno had adolescent beds in 1994 but no adolescent psychiatrists. In 2005, it had no beds but three hospitals reported adolescent psychiatrists had staff privileges.

Given the shrinking capacity of hospitals to care for the acutely mentally ill, we sought to understand the general availability of psychiatrists. Figure 9 shows county distribution of psychiatrists working in all settings in 2005, normalized by 10,000 population [31,39]. Quintiles approximate the national distribution per population of counties with any psychiatrists. We have no way to examine if the population-based availability of psychiatrists was different in 1994.

Figure 9. Psychiatrists per 10,000 population - 2005



In 2005, ten California counties had no psychiatrists working in any setting. Those with no or few psychiatrists per population have adjacent counties where people can seek these services, although they will have to travel long distances.

Compared to all counties nationally, most coastal counties had among the highest ratios of psychiatrists to population. Indeed, Marin (5.2), Napa (5.4), and San Francisco (7.4) have among the nation's highest concentrations of psychiatrists per population. For comparison, most counties in neighboring Nevada have no psychiatrists.

Although the availability of hospital psychiatric beds and hospital-based psychiatrists is declining nationally and

in California, at least in California, their numbers in the community (given an ability to pay for their service) appear relatively adequate, especially in high-population coastal and urban areas.

IMPACT OF CLOSURES ON UTILIZATION

As the number of psychiatric hospitals, beds, and physicians decreased, what impact did this have on admissions? We examined total admissions in the population 15 to 44 without and with MISA, and among the MISA population as a primary or secondary diagnosis.

Table 3. Admissions age 15-44 1994 and 2005

MI/SA Diagnosis	Number		% Total		Abs Change	
	1994	2005	1994	2005	1994	2005
Total	639,538	611,212	100	100	-28,326	-4
No	480,080	467,770	75	77	-12,310	-3
Any	126,197	125,323	20	21	-874	-1
PDX	126,197	125,343	20	21	-854	-1
SDX	16,278	18,125	3	3	1,847	11

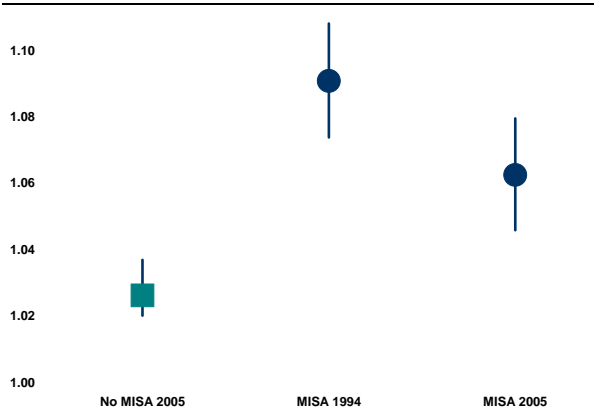
From the hospital point of view, Table 3 indicates the treatment population was stable. About 1 in 5 admissions in this age group had a MISA diagnosis.

Admissions with a principal MISA diagnosis dropped less than 1%, while secondary admissions rose 11%. Almost all admissions with MISA as a secondary diagnosis are due to preventable conditions (ambulatory-care sensitive, injury, or among women, pregnancy-related) [41].

We explored two ways to assess the impact of losing structural capacity to treat the MISA population: out-of-county (OOC) admissions and admissions to hospitals without structural capacity to address their specialized treatment needs. If a county loses psychiatric capacity, one would expect an increase in OOC admissions. If a county lacked specialty beds, it could admit patients in-county or OOC, without regard to the availability of specialized beds.

Figure 10 compares OOC rates for inpatients with and without principal mental health/substance abuse diagnoses over time using ODDS ratios and confidence intervals.

Figure 10. Out-of-county care by diagnosis and year

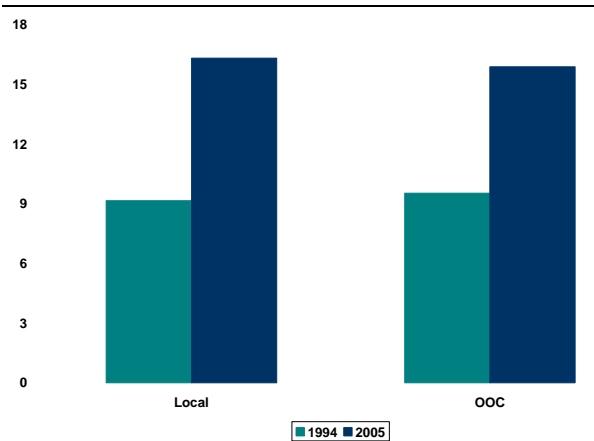


Compared to 1994 admissions (Odds ratio = 1), patients without MISA diagnoses were about 3% more more likely to be admitted OOC in 2005 than in 1994.

At both periods, OOC is 3 to 4 times more common among MISA patients than the rest of the hospital population. The change over time in OOC for MISA patients was not significant.

To determine whether OOC changes were related to the psychiatric capacity of a county, we summarized data annually over each hospital to identify those with any licensed inpatient psychiatric capacity (Table 2). About 90% of hospitals without MISA capacity, and about 99% of those with capacity discharged MISA patients.

Figure 11. MISA admissions to hospitals lacking psychiatric capacity by location



To assess if MISA admissions to hospitals without at least some licensed psychiatric capacity had changed, we compared local and OOC admission rates in 1994 and 2005. Whether local or OOC, Figure 11 shows that the percent of MISA admissions to hospitals lacking psychiatric capacity almost doubled. Thus, OOC did not increase the chances of the MISA population receiving care in an appropriately licensed facility.

To assess whether MISA were more likely to go OOC than the general population, we calculated an equity ratio between the MISA OOC rate and the OOC rate of others. A value of 1 would indicate that the rates were the same. A value less than 1 would indicate MISA were more likely than the general hospitalized population to receive care in their home county, and a value greater than 1 would indicate MISA are more likely to go OOC than other patients.

Figure 12. OOC ratio 1994 and 2005

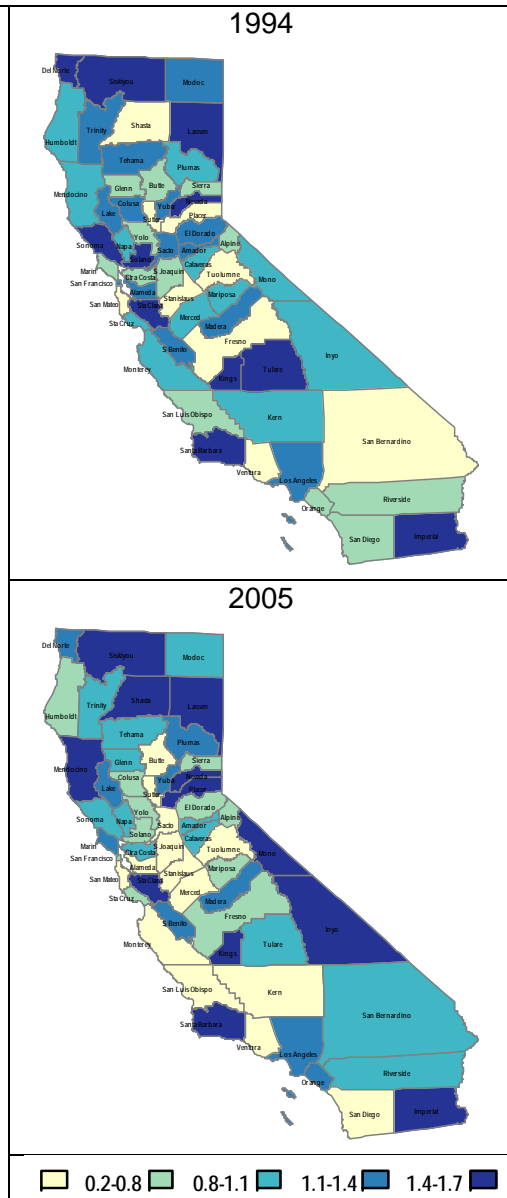


Figure 12 shows the tremendous variation among counties and over time. In 1994, the ratio among counties ranged from 0.2 to 3.6. In 2005, it ranged from 0.4 to 4.2. There was no statistically significant relationship between the ratio's 1994 and 2005 value.

In 20% of counties, MISA patients were 20% to 80% less likely to go OOC than other counties.

In 60% of counties, MISA were 10% to 400 times more likely to go OOC than other patients. This includes Los Angeles, which had the greatest number of inpatient facilities at both times, and an above average rate of OOC care for its residents at both times.

Ratios for most counties, large and small, switched from high to low over time with no apparent logic.

SUMMARY AND RECOMMENDATIONS

As measured by availability of adult and adolescent psychiatric units or psychiatric emergency rooms, California's structural capacity to provide inpatient treatment to the acutely ill MISA population declined substantially between 1994 and 2005. Nonetheless, in 1994 and 2005, almost all hospitals admitted some MISA patients, about 40% of hospitals had at least some psychiatric capacity, and most MISA admissions receive care in hospitals with at least some structural capacity to treat them. Although availability of psychiatrists with hospital-based practice privileges declined, they are well-represented in most counties.

OOC admissions increased significantly for the MISA population as compared to the general population. MISA admissions to hospitals lacking specialized facilities almost doubled. There was no significant relationship between the OOC ratio in 1994 and 2005. Decisions as to where inpatient treatment would occur seem to be made on a basis other than treatment need.

A disturbing pattern involves growing distances between residence and OOC treatment. This is true for the general population as well as the MISA population, for whom this is an acute problem. Like others with chronic illness, their treatment goal is to shorten the time it takes to control the illness and lengthen the time between acute episodes. The MISA population requires careful follow-up for medication side effects and monitoring for compliance, and has great difficulty complying with treatment plans. Adding distance to the equation increases problems.

Growing distances between residence and treatment make it increasingly difficult for families to visit or be involved in treatment during hospitalization. Post-discharge case planning and supervision is fragmented at best. Adequate numbers of high-quality community-based programs remain a distant dream.

Most families are neither prepared nor able to provide the ongoing support the MISA population needs. This is particularly the case in the age group 15 to 44 studied here. Most are or will become parents and most have elder parents [4]. Pervasive systemic neglect of this population has a serious detrimental impact on family formation, family functioning, and intergenerational family health. The MISA population forms the core of families whose children are in foster care, juvenile detention facilities, group homes, and residential treatment facilities.

Similar to our earlier study focused on pediatric care [42], these findings suggest that the abandonment of planning resulted in a progressive deterioration of California's infrastructure. This adversely affected hospital access for the general population, and particularly the MISA population.

Reflecting the trend toward deinstitutionalization that California started in the 1970s, programs to treat the MISA population in community-based residential or day treatment programs do not appear to have compensated for the loss of hospital beds. Hundreds of thousands of California residents remain homeless or criminalized and incarcerated when the community cannot tolerate their bizarre behavior [1].

For the last twenty years, both advocates and researchers have focused on the effects of increasing access to insurance or what happens in the hospital. This study shows, as did our last [45,46], that other concomitant policy decisions greatly compromised the healthcare infrastructure. The resulting disparities impact both access and outcome indicators. These findings again provide solid evidence that "voluntary" planning failed. The literature supports that access to services is more equitable and may be less expensive in states with planning mechanisms.

Our findings should provide the impetus for a legislative initiative to re-establish mandated regional health planning of the type integral to SB840 (Kuehl), the California Universal Healthcare Act [48]. This legislation, which would create a single-payer California Healthcare System, has passed on the Senate floor and is heading toward the State Assembly.

With or without universal healthcare, nothing limits the state's ability to reinstitute health planning. We envision a legislative study of provisions in the Health and Safety Code that established HSA, updated to reflect current standards, to assure adequate and equitable access to primary and hospital care across all regions. This time we recommend focusing on general population health needs rather than emphasizing high-technology cost drivers. Changes should be accompanied by ongoing monitoring to assess adequacy of the health care infrastructure and indicators of access, equity, and quality. OSHPD is the appropriate agency to assume this role. It was responsible for health planning in the past, maintains data systems that could be used to monitor results of policy changes, and currently authorizes quality of care studies.

Finally, we strongly recommend that sections of the Health and Safety Code be strengthened and enforced. In particular, we are concerned that psychiatrists co-supervise care of the hospitalized MISA population and psychiatric nurses co-care for psychiatric patients no matter which unit provides care. If MISA patients are to be treated in units other than those specifically licensed to care for them, we urge strengthening staff training and certification; delegating Licensing and Certification to pay particular attention to where in a hospital the MISA population stays, who cares for them, and whether standards are followed. With the passage of SB1312 (Ahlquist), Licensing and Certification gained 155 new investigative positions and the ability to levy large fines for major violations.

In 1979, Churchman wrote, "...simple, direct, head-on attempts to 'solve' systems problems don't work and, indeed, often turn out to be downright dangerous. (p. 3-4) [53]" Almost three decades later, California's MISA population and their families daily experience the devastating consequences of our turn away from rational, data-driven health planning toward a rough-and-tumble market approach.

ENDNOTES

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- 11 Chapter 1745 § 439.7, Statutes of 1984.
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