Admissions, Length of Stay, and Discharge Barriers at the Hawaii State Hospital

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Based on data gathered from patients, psychiatrists, and social workers at the Hawaii State Hospital, it was determined that the majority of patients had been in the hospital for more than one year, were committed for forensic reasons, and did not need continued hospitalization. An inter-agency systems approach is needed to address the issue of length of patient stay.

Introduction

On a national level, deinstitutionalization over the past three decades has forced state hospitals to discharge patients and downsize. Although state hospitals across the country have closed and innovative community-based alternatives have been created, the remaining facilities continue to provide a place for the chronically mentally ill. These hospitals have played a variety of roles during this time (e.g., acute care facility, rehabilitation hospital, custodial care facility, forensic hospital, asylum, research and training institution, social control institution, and even a facility of employment).[1-3] Dependent upon the functions of the hospital and the diverse treatment approaches, patients' average lengths of stay have varied from several days to many years.

Although length of stay for patients at private psychiatric hospitals have been steadily declining, there has been little change at public institutions.[4-8] In fact, the mean length of stay varies across hospital settings with a ratio of 16:1.[9] Within the state (or public) hospitals, the percentage of patients with lengths of stay greater than one year ranged from 24-71% on any given day.[2,4,8,10] Most studies have been limited to census data.

In their 1979 study on lengths of stay, Goldman, Taube, Reiger et al. reported that 80% of patients were released within three months of hospitalization.[2] The remaining 20% were then considered to be intermediate-stay patients. Approximately 15% of this 20% (or about 3% of the original sample), eventually became long-stay clients (i.e., remained for more than one year). However, on a given day in 1979, the researchers found that 20% of the patients were short-stay patients, 20% were intermediate-stay clients, and the remaining 60% were long-stay patients. Platman and Booker reported that approximately 15% of each cohort group that they studied were still hospitalized seven years after admissions.[11] These patients were difficult to place in the community and were unlikely to ever be discharged to an unsupervised living arrangement.

Several factors have been implicated in longer lengths of stay. Talbott and Glick found the following factors to be associated with longer lengths: (a) behaviors that could not be controlled on an outpatient basis, (b) unremitting psychosis, and (c) deficits that mandated a great deal of structure.[12] Allen, Coyne, and Logue found higher lengths of hospitalization for a personality-disordered group with treatment-resistant pathology and severely impaired impulse control.[13] Other variables have been reported to increase length of stay, such as: medical comorbidity, prior hospitalization, availability of community resources, the commitment process, staff expectations, and utilization review criteria.[14-18] Therefore, factors other than patient attributes also appeared to have an impact on length of stay.

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It has also been noted that many patients at state hospitals do not meet objective criteria for further hospitalization. In a 1966 study of a hospital in Texas, one quarter of the patients were considered suitable for release from institutional care, and almost a third for transfer to some other form of institutional care (e.g., nursing home).[19] The remaining 43% were judged to be suitable for further care in state hospitals. A similar 1970 investigation of clients in a hospital in Washington DC, found that only 32% of the patients were considered suitable for further care in the hospital.[20] More than half were candidates for nursing-home or foster-home placement. The remaining 13% were considered dischargeable to live in an independent setting. In a more recent study published in 1996 by Fisher and his colleagues, census reduction was found to be related to community resources.[8] However, these reductions were not sustained over time. Increases in patients with high-risk violent behaviors and a lower level of functioning as well as readmissions were documented over time. The challenges posed by these patients must be addressed before further deinstitutionalization occurs.

In summary, on a national level, there appear to be three groups of patients who occupy state hospital beds: (a) The "hard core" group consists of patients who are minimally responsive to treatment. These clients are unremittingly psychotic and their severe deficits require structured behavioral management and other interventions over long periods of time.[12,21] (b) "Bed blockers" are long-stay patients who are deemed not in need inpatient care, but who remain hospitalized due to lack of adequate alternatives. These clients are clinically asymptomatic or have reached maximum benefit from hospitalization.[11,22] (c) The "forensic" group consists of those who are committed to the institution by the courts and have lengthy stays because of delays by the legal system to release these patients, as only informally observed at the Hawaii State Hospital. This latter observation remains to be confirmed by systematic research.

The demarcation of these groups points to a central question: Are state psychiatric hospitals, and the Hawaii State Hospital in particular, being used in the most effective way to serve those in need? In order to begin to answer this question, more investigation is needed to delineate the reasons for increased lengths of stay and the obstacles to discharge for those who do not meet criteria for further hospitalization. The present study examines these issues utilizing data from the Hawaii State Hospital (HSH) that should have relevance to the site in question and should have implications nationally.

Purposes

Specifically, the purposes of the present study are as follows:

(a) Analyze the length of stay of patients at HSH based on the duration between the date of admission and a cut-off date at the time of data collection.

(b) Determine the proportion of clients who actually meet criteria for continued hospitalization and compare obtained figures to those reported previously. It is hypothesized that a large proportion of patients will be assessed not to be in need of continued hospitalization.

(c) Identify the obstacles for discharge for the patients who do not meet criteria to remain. Given the change in referral sources (see "Setting" section in Methods), legal barriers should be the most common obstacle to discharge. However, this remains to be systematically studied.

(d) Describe the transitional placement needs for those who do not meet criteria for continued stay.

(e) On an exploratory level, examine whether there are variables that differentiate between patients who need to stay vs. those who do not.

Methods

Setting

The Hawaii State Hospital (HSH) is the only specialized, adult inpatient, public psychiatric facility for the entire Hawaiian Islands. The hospital admits and treats chronically ill patients. Prior to 1990, the hospital functioned as an acute care facility admitting individuals directly from emergency rooms of other hospitals. The lengths of stay during this time varied from a few days to years. However, after 1990, the admissions from emergency rooms ceased, and the hospital gradually downsized from 227 to 168 beds. At present, admissions come mainly from the correctional facilities and a few from psychiatric units of other general hospitals.

Subjects

Participants consisted of those who were inpatients at the HSH on December 15, 1996.

Procedures

Self-reported data on age, gender, and education were obtained from the patients' medical records. The number of hospitalizations included any prior admission to public or private psychiatric units in Hawaii. Legal status (i.e., voluntary, civil, penal commitment) was determined based on the intake information. Psychiatric diagnoses were also obtained from the records and involved the most recent assessment up to December 15, 1996.

The duration of stay was calculated by subtracting the admittance date from December 15, 1996, with the unit in years. It should be duly noted that the period computed reflected the length of stay only up until December 15, 1996. Therefore, a current patient with a duration of 0.2 years may have remained at the HSH for a much longer period of time before being discharged. Based on previous literature,[2] length of stay was categorized in three durations: less than or equal to 3 months; greater than 3 months but less than or equal to 12 months; and greater than 12 months.

The 13 attending physicians for these patients were interviewed and the basic question under study was, "Clinically, does this patient need hospitalization now?" If the response was "No," the question was asked, "If there were no obstacles, would you discharge him/her?" The latter question was used for confirmation purposes. The psychiatrists' criteria for continued hospitalization were: moderate to severe psychopathology, dangerousness, and/or need for 24-hour supervision. The corresponding criteria for discharge included the patient not being symptomatic and dangerous, being stable, and reaching maximum benefit from hospitalization.

For the patients who needed further hospitalization, the reasons for continued stay were documented. For those who did not meet the criteria for hospitalization, the obstacles for discharge were recorded. In addition, the psychiatrists were asked if the patient in question was compliant (primarily in reference to medication). The

Table 1.—Frequencies, Percents, and Confidence Intervals of the Obstacles to Discharge Based on Psychiatrists' Assessments (*N*=98)

Psychiatrists' Responses	Frequency	%	95% Confidence Interval
Obstacle to Discharge			
Legal	63	64.3%	54.4 - 73.1%
No appropriate outside facility	19	19.4%	12.8 - 28.3%
Patient refusal of discharge	18	18.4%	11.9 - 27.2%
Institutionalization	8	8.2%	4.2 - 15.3%
Non-compliance and prone to relapse often	8	8.2%	4.2 - 15.3%
Drug abuse and becomes symptomatic often	7	7.1%	3.5 - 14.0%
Objection by family	7	7.1%	3.5 - 14.0%
Objection by care home	4	4.1%	1.6 - 10.0%
Inability to care for self	3	3.1%	1.0 - 8.6%
Objection by community mental health clinic	2	2.0%	0.6 - 7.1%
Objection by community	1	1.0%	0.2 - 5.6%

Note: Psychiatrists provided more than one obstacle for some patients.

Table 2— Frequencies, Percents, and Confidence Intervals of Social Workers' Evaluation of Transitional Placement Needs for Patients Determined by Psychiatrists Not to be in Need of Hospitalization (*N*=98).

Social Workers' Responses	Frequency	%	95% Confidence Interval
Transitional Placement Needs			
Adult residential care home	27	27.6%	19.7 - 37.1%
Transitional living unit	19	19.4%	12.8 - 28.3%
Long-term care and custody; 24-hour supervision	18	18.4%	11.9 - 27.2%
Psychiatric intensive care facility	15	15.3%	9.5 - 23.7%
Substance abuse treatment facility (Oxford House)	7	7.1%	3.5 - 14.0%
Family	6	6.1%	2.8 - 12.7%
Independent living	5	5.1%	2.2 - 11.4%
Special nursing facility	1	1.0%	0.2 - 5.6%

Note: The sum of the frequencies equals exactly 98 because only one transitional placement need per patient was elicited from the social workers.

social workers were interviewed to determine the patient's placement need.

The mean, range, and standard deviation were determined for the lengths of stay of patients at HSH. A chi square analysis was conducted on the frequency breakdown of the patients falling into the three lengths-of-stay categories. The same type of analysis was done for the frequency distribution for legal status. A frequency table (which included the percents and confidence intervals) was generated for the psychiatrists' evaluation of the obstacles to discharge. Similarly, the social workers' responses were presented in a frequency table that included percents and confidence intervals. The remaining analysis consisted of comparing patients who needed continued hospitalization vs. those who did not, on several dimensions: age, number of hospitalizations, categorical duration of stay, gender, legal status, educational attainment, medication compliance, and psychiatric disorders. Where means were involved, t-tests were performed, and where frequencies were the dependent measures, either chi square or logistic regression analyses were conducted (dependent upon the incidence rate of the targeted measure).

Results

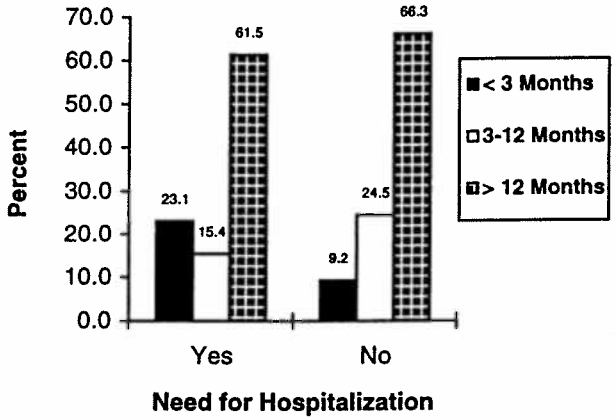
A total of 163 subjects were studied and the mean age of these participants was 44.4 years with a range of 21 to 86 years of age. There were 140 (85.9%) males and 23 (14.1%) females. For individuals who reported their educational attainment, 54 (34.8%) did not graduate from high school, 75 (48.4%) graduated from high school but did not attend college, and 26 (16.8%) had at least some years of college education. The mean number of previous psychiatric hospitalizations was 5.1 (range = 0 to 39; sd = 5.6).

The average duration of stay for the 163 patients (on December 15, 1996) was 3.6 years (range = 0.1 to 22.9 years; sd = 4.4 years). Twenty-four patients (14.7%; 10.1-21.0% = 95% confidence interval) had lengths of stay less than or equal to 3 months (short stay), 34 (20.9%; 15.3-27.7% = 95% confidence interval) had stayed greater than 3 months but less than or equal to 12 months (intermediate stay), and 105 (64.4%; 56.8-71.4% = 95% confidence interval) had been hospitalized for greater than 12 months (long stay). The differences between these three groups were statistically significant ($X^2 = 71.8$; $df = 2$; $p < .001$) and indicated that the majority of patients were at the HSH for more than one year.

In examining legal status, the following distribution was obtained: Forty-one patients (25.2%; 19.1-32.3% = 95% confidence interval) were voluntary, 6 (3.7%; 1.7-7.8% = 95% confidence interval) were under involuntary civil commitment, and 116 (71.2%; 63.8-77.6% = 95% confidence interval) were penal. This latter group included those who were admitted for psychiatric evaluations or assessments for fitness to proceed, those acquitted but still committed, and those whose conditional releases were revoked. The proportions were found to be significantly different ($X^2 = 116.4$; $df = 2$; $p < .001$) whereby most patients were penal.

Of the 163 patients, the psychiatrists stated that only 65 (39.9%; 32.7-47.5% = 95% confidence interval) met clinical criteria for continued hospitalization. Conversely, 98 (60.1%; 52.5-67.3% = 95% confidence interval) did not need hospitalization.

Fig 1.— Percent of Patients By Length of Stay For Each "Need for Hospitalization" Group



Note: $n = 65$ for "Yes" for Hospitalization; $n = 98$ for "No" for Hospitalization; $X^2 = 6.8$; $p < .04$; $df = 2$.

Table 1 presents the results on the obstacles to discharge for those who did not need hospitalization. Legal status/commitment was by far the most common barrier with a rate of 64.3%. The second and third most frequent obstacles were, "no appropriate outside facility" (19.4%) and "patient refusing discharge" (18.4%).

Table 2 reports the findings of the interviews with the social workers on their assessment of the transitional needs of the patients. Adult residential care home (27.6%), as a placement alternative, was selected most often followed by long-term care/custody (24-hour supervision; 18.4%).

Among the eight demographic variables that were examined in relation to the need for hospitalization, three were statistically significant. In general, there were higher proportions of patients in the ">3 months, but < 12 months" (intermediate stay) and ">12 months" (long stay) categories for those who did not need hospitalization as compared to those who did need hospitalization (see Figure 1).

Table 3 reports the results on the relationship between the need for hospitalization and several other variables. An overall higher education level was found for those not in need of hospitalization than for those who needed continued stay. There was a higher proportion of patients deemed to be compliant and not needing continued hospitalization in comparison to those needing hospitalization.

In examining the 17 diagnoses, only one comparison was statistically significant. The prevalence rate of medical disorders for those who did not need hospitalization (16.7%) was higher than for those who did need hospitalization (4.8%). The medical disorders included diabetes, brain injury, hypertension, chronic obstructive pulmonary disorder, and seizure disorders. However, given the relatively high number of comparisons made for the different diagnoses, it cannot be ruled out that this significant finding involving the medical disorders was due to chance.

Discussion

The average length of stay for patients at the HSH was 3.6 years. However, this figure may be misleading in that it is unduly affected by a small percentage of patients with very lengthy hospitalizations. In addition, the 3.6 years per se does not answer the previously posed question, "Are state psychiatric hospitals, and the HSH in particular, being used in the most effective way to serve those in need?" However, further analyses revealed that the typical profile of a patient at the HSH was one who had a length of stay greater than one year (64%), was committed for forensic reasons (71%), and was evaluated by psychiatrists as not needing continued hospitalization (60%). In general, these results were consistent with the hypotheses put forth and with previous findings.[12,19]

It can be reasonably inferred that the high percentage of penal patients was due to the criminal justice system becoming the main source of referral and admission. Being the only public institution in the state, this hospital may be converting to a forensic hospital even though facilities are available to treat the mentally ill in the prison. For example, evaluation for fitness to proceed could take place at the prison level prior to admittance to the HSH. The high-profile murderers and rapists were included in this group and, based on first-hand kowledge, some of them did not meet clinical criteria for continued stay. However, conditional releases were being denied by the courts. Therefore, it would appear that other criteria (e.g., social control) were being considered in the decision making rather than mental health status for both admittance and conditional release.

Another potential factor should also be considered when examining the forensic patients. It is possible that in order to gain admission to this facility, the mentally ill could have been criminalized (i.e., arrested for misdemeanors and transferred to the state facility).[23] Further research is needed to ascertain the degree to which this may be taking place, and subsequent interfacing will likely be needed between agencies (i.e., hospital, prison, courts).

The 40% of the patients considered to meet continued stay criteria were the "hard core" group who continued to be symptomatic, dangerous, treatment resistant, and/or needing continued structure. These patients were not capable of being managed in psychiatric wards of other general hospitals or in private hospitals because of restrictions on lengths of stay by managed care. Appropriately therefore, these patients should be managed and cared for at the state hospital.

Nearly two-thirds of those deemed not in need of continued hospitalization, were the "bed blockers." They did not meet clinical criteria for continued stay in the hospital, but continued to stay longer for other reasons. The three main obstacles for discharge identified in this group were legal barriers, no outside facilities for placement, and patient refusal. The legal barriers that contributed to longer lengths of stay included delays in scheduling court hearings and inability to apply for conditional release for another year if it was denied at the hearing. Further, a few of these patients became symptomatic when attempts were made to return them to the court for trial. These patients, especially those who were sent for assessments for competency to stand trial, may have been trying to avoid being sentenced. Another factor that should be considered that may have contributed to the length of stay was the overall positive aspects of the HSH (e.g., nonthreatening environment, phone usage, allowance of "street clothing," potential for job and nominal income).[24] Perhaps from a therapeutic view, the outcome of being in such an environment relative to that outside of the HSH should be considered.

Table 3.—Tests of Significance Comparing Need for Hospitalization Across Several Variables.

Variables	Need for Hospitalization: Yes[a]	Need for Hospitalization: No[a]	Statistical Tests
Age (mean)	4.3 (*sd*=11.9; *n*=65)	45.1 (*sd*=14.1; *n*=98)	*t*=0.9; $p > .05$; *df*=161
Number of Hospitalizations (mean)	4.9 (*sd*=4.6; *n*=61)	5.3 (*sd*=6.2; *n*=91)	*t*=0.4; $p > .05$; *df*=150
Gender (frequency)			X^{2c}=0.7; $p > .05$; *df*=1
Males	54 (83.1%)	86 (87.8%)	
Females	11 (16.9%)	12 (12.2%)	
Legal Status (frequency)			X^{2c}=5.2; $p > .05$; *df*=2
Civil commitment	5 (7.7%)	1 (1.0%)	
Voluntary	17 (26.2%)	24 (24.5%)	
Penal	43 (66.2%)	73 (74.5%)	
Educational Attainment Level (frequency)			X^{2c}=6.2; $p < .05$; *df*=2
Less than high school	23 (36.5%)	31 (33.7%)	
High school diploma or G.E.D.	35 (55.6%)	40 (43.5%)	
At least some college	5 (7.9%)	21 (22.8%)	
Medication Compliant (frequency)			X^{2c}=13.9; $p < .001$; *df*=1
Not compliant	21 (32.3%)	9 (9.2%)	
Compliant	44 (67.7%)	89 (90.8%)	
Psychiatrist Diagnoses (frequency)[b]			
Alzheimer's disease	1 (1.6%)	3 (3.1%)	X^{2c}=0.4; $p > .05$
Biploar disorder	7 (11.1%)	11 (11.5%)	X^{2c}=0.0; $p > .05$
Dementia	3 (4.8%)	6 (6.3%)	X^{2c}=0.2; $p > .05$
Depression	0 (0.0%)	1 (1.0%)	N.A.[d]
Delusional disorder	4 (6.4%)	3 (3.1%)	X^{2c}=0.9; $p > .05$
Impulse control disorder	0 (0.0%)	1 (1.0%)	N.A.[d]
Generalized anxiety disorder	1 (1.6%)	0 (0.0%)	N.A.[d]
Medical disorder/disease	3 (4.8%)	16 (16.7%)	X^{2c}=5.7; $p < .02$
Mental retardation	2 (3.2%)	5 (5.2%)	X^{2c}=0.4; $p > .05$
Organic mood disorder	0 (0.0%)	1 (1.0%)	N.A.[d]
Personality disorder	0 (0.0%)	1 (1.0%)	N.A.[d]
Psychotic disorder	4 (6.4%)	2 (2.1%)	X^{2c}=1.9; $p > .05$
Post-traumatic stress disorder	2 (3.2%)	1 (1.0%)	X^{2c}=0.9; $p > .05$
Schizophrenia	42 (66.7%)	63 (65.6%)	X^{2c}=0.0; $p > .05$
Sexual disorder	4 (6.4%)	2 (2.1%)	X^{2c}=1.9; $p > .05$
Substance abuse	31 (49.2%)	39 (40.6%)	X^{2c}=1.1; $p > .05$
Dual diagnosis (substance abuse & at least one other diagnosis)	31 (49.2%)	34 (35.4%)	X^{2c}=3.0; $p > .05$

[a] *N* sizes are not identical to that previously reported because not all data were available for each subject. Percents are based on column figures.
[b] *N* size of "Yes" was 63; *N* size for "No" was 96; *df* = 1.
[c] Logistic regression analyses were performed for these comparisons given the low incidence of the respective psychiatric disorders.
[d] N.A. = Not applicable; too few occurrences for meaningful statistical analyses.

Lack of appropriate outside facilities to place these patients was listed as the second most frequent obstacle, and support for this contention was provided by the social workers' assessment of the need for alternative transitional placements. Community placements in Hawaii include half-way houses, care homes, oxford houses, independent living quarters subsidized by the state, and in some cases the families of the patients. However, facilities for intensive long-term care and custody are not available to house and treat the seriously mentally ill. Even though four cottages have been opened on the HSH campus, which function as transitional units, there are not enough facilities to meet the demands and even when openings are available, placements may not occur for legal reasons or because of patient refusal.

The latter, patient refusal, was the third most common obstacle. These patients, though stable and capable of caring for themselves, refused outside placement or became anxious and sometimes aggressive when attempts were made to transition them. Our findings compare with Trieman and Leff's study where 17% of their group consistently rejected any suggestion of leaving the hospital.[25] However, Lamb and Peele suggested that many chronically mentally ill clients cannot meet simple demands of living even with long-term rehabilitation.[26] Many are unable to withstand the stress, and are apt to develop incapacitating symptoms when confronted with a relatively common life crisis.

Amongst the variables examined, age, number of previous hospitalizations, gender, and legal status did not differentiate those who needed hospitalization versus those who did not. However, the duration of stay was significantly longer for those who did not meet criteria to stay. It is therefore evident that the HSH was unable to discharge patients in a timely manner after stabilization of acute symptoms. It is also of interest to note that this group of patients was more compliant with medication and had a higher educational level than those who met criteria for hospitalization. Our findings were also consistent with other studies that found comorbidity of medical disorders prolonged length of stay. However, this should be cautiously interpreted in the present study because of the number of comparisons examined (i.e., 17 psychiatric diagnoses).

Effective and efficient provision of services at the HSH would benefit other individuals and institutions. Those in need of treatment would be served, there would be a decrease in the waiting list to enter the hospital, the population of the homeless mentally ill would decrease, and there would be less burden on the community mental health clinics to care for the increasingly symptomatic mentally ill.

The ramifications of the criminal justice system being the primary referral source and the resulting increase of the forensic population need to be considered both in short- and long-term planning for the hospital. If court hearings and three-panel (court-appointed independent) examinations could be expedited within the judicial system, the lengths of stay of court-committed patients who do not meet clinical criteria to stay, would decrease. So as not to jeopardize public safety, consideration could be given to an alternative 24-hour facility to house and monitor high-profile criminals who are psychiatrically stable.

Aggressive planning and policy changes within the hospital should take place to decrease lengths of stay. There should be education and training of staff to work with patients toward discharge as soon as acute symptoms improve and to change the culture of providing custodial care and nurturance, to one of teaching patients skills for independence and survival.

Legislative funding to increase transitional facilities in the community is needed. Training care home operators to care for the mentally ill who are elderly, medically compromised, or who have other special needs may increase discharge options. Providing incentives (e.g., free training) may also foster these developments and decrease long-term care.

Limitations

Limitations of this study include the possibility that the practice patterns of the 13 psychiatrists who treated the patients may have influenced the decisions about discharge. Some may have discharged patients as soon as the clients did not meet criteria for continued stay, and other psychiatrists may have believed in providing asylum for these patients. These differences could have affected the lengths of stay in divergent ways.

In addition, the present investigation defined length of stay based on the same cut-off date for all patients rather than on tracking each patient and determining the length of hospitalization as a function of the actual discharge date. Therefore, lengths of stay based on this study should be considered conservative measures. However, the advantage of using such a cut-off date is that there would be greater consistency and reliability in the psychiatrists' evaluation of the need for patients to remain hospitalized, and for social workers' assessment of alternative transitional placements.

Summary

Despite the limitations above, the overall findings of the present study support previous research in Hawaii[27] and in other states and have important implications for institutions in Hawaii. In order to maximize effective services for the mentally ill and benefit other individuals and institutions, an inter-agency approach is needed. Further inquiry and research are also necessary in many areas. What are the criteria or factors that determine whether criminally insane individuals are to be placed in a state psychiatric institution or the prison system? Is a segment of the mentally ill being criminalized in order to be admitted to the HSH? How should patients who essentially refuse discharge be addressed? How are these issues similar and dissimilar to other public psychiatric hospitals? Are other states with public psychiatric hospitals also becoming more forensic, and what is the impact of this on the mentally ill homeless population?

How these issues are dealt with and addressed will greatly affect the care and services of the mentally ill in Hawaii, and nationally. An aggressive approach is needed to decrease lengths of stay to serve more patients in need of hospitalized psychiatric care.

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