Release and Return Rates for Patients in State Mental Hospitals of Maryland

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MUCH EMPHASIS has been placed in recent years on minimizing chronicity in the State mental hospital through the use of intensive treatment methods along with early release. Among the more obvious effects of this program have been a gradual reduction in the size of the State mental hospital patient populations and a concomitant increase in the number of first admissions and readmissions (*1*). At the same time, some specific questions have been raised regarding these programs which have been difficult to answer. For example, what is the relationship between length of hospitalization and the probability of rehospitalization? What are the total number of bed days and hospital episodes per patient over an extended period of time? Are these parameters related to identifiable and measurable patient characteristics?

Heretofore we have been unable to answer questions of this type with precision because of the unavailability of a ready mechanism for following all psychiatric experiences of patient cohorts and the lack of a suitable statistical tool for measuring the probability of repeated occurrence among cohorts observed for varying time periods. The Maryland Psychiatric Case Register, however, now provides a followup mechanism which sequentially links data for all psychiatric treatment services received by an individual patient (*2*). Further, Bahn and Bodian (*3*) have recently described a life table method for studying recurrent episodes of illness.

The Maryland Psychiatric Case Register, established July 1, 1961, routinely receives individual patient reports as to admissions and releases from nearly all public and private inpatient and outpatient psychiatric facilities serving residents of the State. These facilities are estimated to treat in excess of 98 percent of all patients admitted for psychiatric care. A detailed description of register methods for automatic record linkage and data retrieval is available elsewhere (*4, 5*).

Admissions to the State-operated psychiatric hospitals are now divided on a geographic basis among four major facilities. Eastern Shore

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Hospital is the smallest of these (600 resident patients) and serves a predominantly rural area of eight counties. Its program has been largely custodial, and its patient population is heavily concentrated among the elderly. The Crownsville, Springfield, and Spring Grove Hospitals' catchment areas each consists of a portion of Baltimore City together with other urban, suburban, and rural areas. Their resident populations on July 1, 1964, were 1,700, 3,100, and 2,500, respectively. (In addition, two small hospitals provide specialized programs for the entire State.) This paper will consider only admissions to the three major hospitals.

Patients admitted to the four major State hospitals were segregated by race until December 31, 1962; all Negroes were assigned to Crownsville. Patients readmitted after this date were not necessarily hospitalized in the same facility where they had been treated earlier. In recent years, all hospitals have had both white and nonwhite professional and nonprofessional staff.

Method

The cohort studied included all persons admitted to the Crownsville, Springfield, and Spring Grove State Hospitals during the 18-month period from July 1, 1961, to December 31, 1962, who met the specified criteria of diagnosis and age. The original study group did not include patients who returned to the hospital from long-term leave. (Some of its members, however, were subsequently released on long-term leave.) Three primary diagnostic groups were selected: (*a*) psychotic disorders

Table 1. Results for cohorts with psychotic disorders by selected characteristics

Item	Number in cohort	Cumulative percent released within—			Cumulative percent returned within 3 or 12 months among those released within—				Mean number of additional episodes	Median total days in hospital
					1 month		1 year			
		3 months	12 months	18 months	3 months	12 months	3 months	12 months		
Total patients	1,984	55	85	90	22	38	17	37	0.53	137
Male	839	53	82	88	24	40	18	38	.54	153
Female	1,145	57	87	92	21	36	16	36	.52	127
Marital status:										
Single	517	45	77	84	13	29	17	39	.47	185
Married	862	64	89	93	24	40	17	36	.56	106
Other	542	49	85	89	17	32	12	33	.48	147
Age (years):										
25–34	683	58	88	92	26	39	18	40	.59	133
35–44	810	54	85	91	21	38	16	36	.52	139
45–54	491	53	82	87	17	36	15	34	.46	143
Education:										
Less than 9 years	833	54	85	90	21	39	15	37	.53	141
9–12 years	869	56	85	90	24	39	16	37	.53	133
More than 12 years	215	54	86	92	21	31	22	36	.49	142
Residence:										
Baltimore City	1,026	55	84	89	23	40	17	39	.56	140
4 suburban counties	569	56	87	93	26	40	19	39	.57	138
All other counties	301	53	84	89	15	28	15	33	.42	136
Type of admission:										
Voluntary	440	63	88	93	23	38	17	39	.61	112
2-physician certificate	1,416	55	85	90	13	29	17	37	.52	139
Court-committed	97	20	71	79	25	50	17	30	.30	253
Number of previous hospital admissions:										
0	770	62	88	93	19	30	13	29	.41	93
1	631	53	85	90	25	41	18	40	.55	151
2 or more	583	48	81	87	25	50	21	45	.66	174

NOTE: Releases are measured from date of admission to the hospital. Returns are measured from date of release.

(90 percent of these were diagnosed as schizophrenic); (*b*) psychoneuroses and personality disorders, except alcoholism and drug addiction (for simplicity, this group will be referred to as personality disorders); and (*c*) alcoholism. Patients between the ages of 25 and 54 were selected in order to limit variability due to adolescence and older age. Persons with and without previous hospitalizations were included. If a person was admitted to more than one of the three hospitals during the study period, however, he was included only in the cohort of the first hospital. A total of 4,263 persons met these criteria. Of these, 1,984 were diagnosed as having psychotic disorders, 626 as having personality disorders, and 1,653 as being alcoholic.

All cases were followed in the register until June 30, 1964. Thus an observation period was provided ranging from a minimum of 18 months to a maximum of 36. To describe the sequential inpatient experience of the cohort during this time period, the following indices were employed: (*a*) the probability of first significant release and of subsequent first return to any inpatient facility by length of hospitalization and by length of time in the community (life table methods were used as described in reference 3), (*b*) the total number of additional inpatient episodes and total number of days of hospitalization during the 18 months following initial hospital admission, (*c*) the patient's psychiatric care status 18 months after admission, and (*d*) the proportion of the cohort who

Table 2. Results for cohorts with psychoneurotic and personality disorders (except alcoholism and drug addiction) by selected characteristics

Item	Number in cohort	Cumulative percent released within—			Cumulative percent returned within 3 or 12 months among those released within—				Mean number of additional episodes	Median total days in hospital
					1 month		1 year			
		3 months	12 months	18 months	3 months	12 months	3 months	12 months		
Total patients	626	79	94	97	15	24	15	28	0.47	54
Male	288	77	92	95	20	31	19	33	.53	58
Female	338	81	96	98	11	19	12	25	.42	51
Marital status:										
Single	90	72	94	97	14	28	17	32	.57	80
Married	325	84	97	99	13	21	13	24	.39	45
Other	182	74	90	94	15	22	17	30	.46	64
Age (years):										
25–34	275	82	97	100	12	21	14	25	.38	49
35–44	229	80	93	95	15	24	17	30	.52	52
45–54	122	71	89	93	24	33	17	35	.58	84
Education:										
Less than 9 years	211	79	95	97	13	21	16	29	.47	54
9–12 years	341	78	94	97	15	25	14	27	.46	55
More than 12 years	60	88	97	97	21	28	19	33	.57	50
Residence:										
Baltimore City	267	78	94	97	20	29	18	30	.53	60
4 suburban counties	253	79	95	96	13	21	15	31	.49	55
All other counties	87	79	93	99	10	14	12	20	.26	43
Type of admission:										
Voluntary	269	81	95	97	19	29	18	31	.52	54
2-physician certificate	263	79	94	97	13	21	15	28	.48	56
Court-committed	85	74	93	95	6	16	9	23	.31	54
Number of previous hospital admissions:										
0	385	85	97	98	12	20	14	24	.38	47
1	154	72	90	94	11	23	10	27	.42	58
2 or more	87	66	90	94	34	49	32	53	.98	140

NOTE: Releases are measured from date of admission to the hospital. Returns are measured from date of release.

died in a psychiatric hospital or in the community within 18 months after admission.

In our study, significant hospital release was defined as discharge directly from the hospital or placement on long-term leave. Readmissions of members of the cohort to the same or any other hospital and returns to inpatient status from long-term leave were counted as additional hospital episodes. Deaths of subjects while in the community were ascertained by matching register files with all State death-certificate files on residents. Since these procedures for death clearance have not been fully developed, some deaths were probably not ascertained.

In addition to diagnosis, the following patient characteristics were studied: sex, age, race, marital status, highest grade of school completed, place of residence, type of admission (voluntary, commitment on the request of a relative or by the community, and court-committed) and number of previous hospital admissions. The number of persons in each diagnostic cohort classified by these characteristics is shown in tables 1–3.

Results by Diagnosis

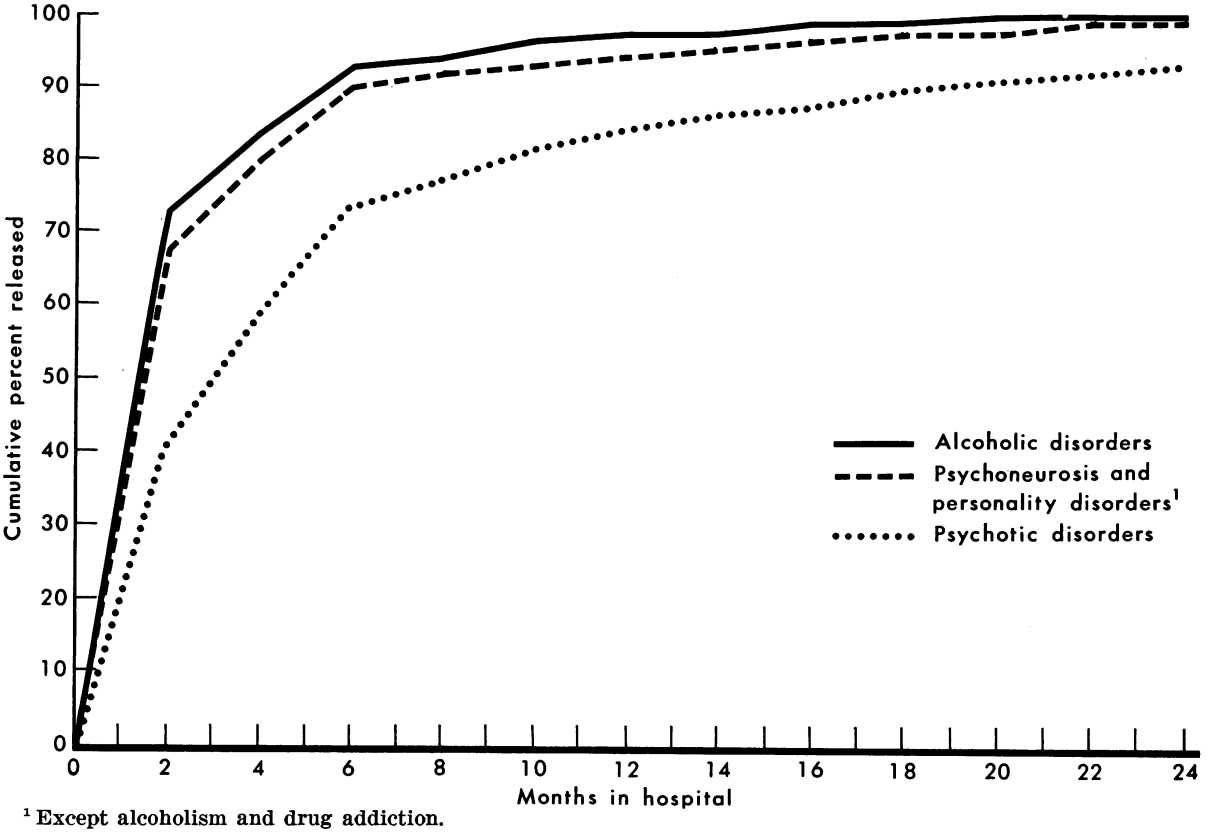
First significant release. More than half of all patients in each of the three cohorts had been released within 3 months after admission and more than 80 percent within 12 months (fig. 1 and table 4). At the end of 2 years of observation, less than 10 percent were still hospitalized. Considerable variation was found, however, in release rates by diagnosis; psychotics accounted for the lowest cumulative percent released at each point in time. Of the cohorts

Table 3. Results for cohorts with alcoholic disorders by selected characteristics

Item	Number in cohort	Cumulative percent released within—			Cumulative percent returned within 3 or 12 months among those released within—				Mean number of additional episodes	Median total days in hospital
					1 month		1 year			
		3 months	12 months	18 months	3 months	12 months	3 months	12 months		
Total patients	1,653	84	97	98	19	35	19	37	0.75	54
Male	1,355	85	97	98	19	36	19	38	.78	55
Female	298	82	94	96	18	30	17	33	.62	48
Marital status:										
Single	291	77	94	95	19	35	18	35	.67	65
Married	608	89	97	98	17	30	15	31	.62	40
Other	707	83	98	98	21	38	22	42	.86	67
Age (years):										
25–34	355	87	99	100	14	31	18	35	.79	52
35–44	679	84	96	97	22	35	20	38	.74	52
45–54	619	83	96	97	18	38	18	38	.73	57
Education:										
Less than 9 years	730	83	97	97	20	37	17	35	.73	56
9–12 years	686	85	97	98	16	30	16	30	.73	53
More than 12 years	177	85	97	98	27	48	15	34	.95	57
Residence:										
Baltimore City	933	85	97	97	22	40	21	42	.84	57
4 suburban counties	476	83	97	98	18	34	17	34	.70	52
Other counties	193	81	96	97	10	23	12	27	.52	52
Type of admission:										
Voluntary	730	89	98	98	21	37	21	40	.79	50
2-physician certificate	739	84	96	97	16	33	17	35	.72	51
Court-committed	175	67	97	98	18	43	18	36	.70	83
Number of previous hospital admissions:										
0	959	85	97	98	16	28	17	31	.57	47
1	367	83	97	97	16	39	16	39	.77	60
2 or more	327	82	97	97	29	52	27	52	1.24	77

NOTE: Releases are measured from date of admission to the hospital. Returns are measured from date of release.

Figure 1. Cumulative patient release rates within specified periods in the hospital by diagnostic category



[1] Except alcoholism and drug addiction.

comprised of alcoholics and patients with personality disorders, 25 percent were released within 2 weeks, about 70 percent within 2 months, and 90 percent within 6 months. The comparable rates for psychotic patients were 7, 41, and 74 percent. Eight percent of the psychotics included in this study were hospitalized continuously for 24 months or more compared with less than 2 percent of the patients with the other two diagnoses.

Rate of first returns. Of all patients released within 1 year, 9 to 10 percent were rehospitalized within 1 month, 20 to 27 percent within 6 months, and 28 to 37 percent within 12 months (fig. 2). At the end of 18 months after hospital release, 45 percent of the psychotic patients, 42 percent of the alcoholics, and 32 percent of those with personality disorders had been rehospitalized. From the sixth month on, cumulative return rates were considerably lower for patients with personality disorders regardless of the length of hospital stay than for patients with the other two diagnoses. In general, the rate of return for those still out in the community decreased with elapsed time since release.

Among patients who had been hospitalized 1 month or less, highest return rates were noted for psychotics. Psychotic patients who had been hospitalized for less than 1 month experienced higher return rates within the first few months after release than did psychotics hospitalized for longer periods. As time in the community increased, however, these differences became negligible. In cases of personality disorder and alcoholism, as the time in the community increased, the patients with short hospital stays experienced somewhat lower return rates than those with longer hospital stays. Thus, the cumulative proportion returned within 18 months for these two disorders was highest among those who had been hospitalized the longest.

Type of first release. Nearly all persons re-

leased during the first few weeks were discharged directly from the hospital (table 5). The proportion of direct discharges decreased with time, however, and by the second month placements on convalescent leave accounted for a substantial proportion of releases. Relatively few persons were released to foster care at any time.

Among patients with psychotic and personality disorders, little difference was noted in return rates by type of release. That is, patients directly discharged did not show higher return rates than those placed on foster care or convalescent leave except for the earliest period of community stay. On the other hand, alcoholics who were directly discharged tended to have higher return rates than those placed on

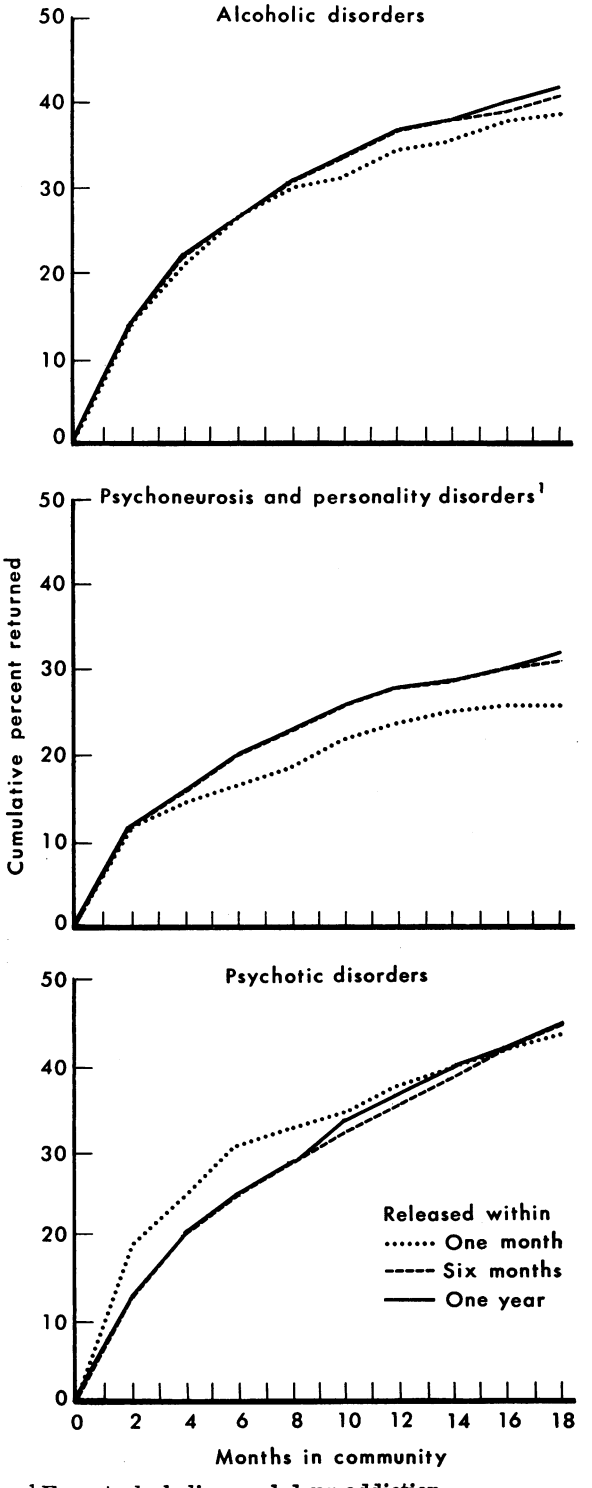
Table 4. Percent distribution by psychiatric diagnosis of patients' hospital releases and returns and of patients' status 18 months after admission

Patients' experience	Psychotic disorders	Psychoneuroses and personality disorders [1]	Alcoholic disorders
Released [2] within—			
3 months	55	79	84
6 months	74	90	93
12 months	85	94	97
Released [2] within 12 months and returned within—			
3 months	17	15	19
12 months	37	28	37
18 months	45	32	42
Additional inpatient episodes	36	29	40
Status 18 months after admission—			
In hospital continuously	9	3	2
In hospital—readmitted	13	6	6
On leave (no clinic care)	14	6	5
On clinic rolls	15	9	3
Dead	2	2	5
Alive—not under care	47	74	79

[1] Except alcoholism and drug addiction.
[2] Releases are measured from date of admission.

NOTE: Percentages are based on all study subjects in the respective diagnostic category except that in the breakdown of patient returns the percentages are based only on patients in the diagnostic category released within 12 months of admission.

Figure 2. Cumulative percentages of patients rehospitalized after specified periods in the community, by length of initial hospitalization and diagnostic category



[1] Except alcoholism and drug addiction.

convalescent leave whatever the period of stay in the community.

The type of release reflects legal and administrative policies, the patient's level of functioning, and the availability of posthospital community and familial care. In the light of unimpressive differences in return rates between patients released on direct discharge and on convalescent leave, the question arises whether there is a logical basis for the nondirect discharge policy. This question cannot be answered definitely, however, without further information, such as the relative degree of impairment in the two release groups.

Clinic posthospital experience. Will a patient make use of psychiatric outpatient services after his release from the hospital? Of all patients released during the first 18 months after hospitalization, 23 percent of the psychotics, 17 percent of those with personality disorders, and 6 percent of the alcoholics were admitted to a clinic within the next 30 days. Among the psychotics and the patients with personality disorders, this proportion varied with length of hospital stay, from less than 10 percent of those hospitalized for only 1 week to about one-fourth of those hospitalized for 3 months or more. The clinic admission rate for alcoholics remained at a low level (10 percent or less) regardless of the length of hospitalization.

Psychotics who received clinic care within 30 days after release had considerably lower hospital return rates than similarly diagnosed persons without clinic care; patients with personality disorders had slightly lower return rates. On the other hand, alcoholics who became outpatients within 30 days after release had consistently higher hospital return rates than alcoholics who did not. These data on the relationship of posthospital clinic care to subsequent hospital readmissions are difficult to evaluate, however, since many uncontrolled factors such as the patient's level of functioning, his family situation, and the availability of psychiatric care affect the rate of clinic attendance and of rehospitalization (*6*, *7*).

Additional inpatient episodes. Thus far we have described only the probabilities of first significant release from the hospital and of

Table 5. Percent of releases by type of release [1] for specified periods of hospitalization, by diagnostic category

Diagnosis and type of release	Total released 18 months after admission	Days in hospital							
		1–7	8–14	15–30	31–60	61–91	92–182	183–365	366–549
Psychotic disorders:									
Percent of cohort released alive during interval	90	3	4	12	22	14	19	11	5
Convalescent leave	57	19	29	45	59	74	67	56	46
Foster care	3	2	------	------	------	.4	1	14	9
Direct discharge	40	79	71	55	41	26	32	30	44
Psychoneuroses and personality disorders: [2]									
Percent of cohort released alive during interval	97	14	11	19	24	11	11	4	3
Convalescent leave	31	11	27	21	38	54	43	40	24
Foster care	1	------	------	------	------	------	2	12	6
Direct discharge	68	90	74	79	62	46	55	48	71
Alcoholic disorders:									
Percent of cohort released alive during interval	98	11	14	23	25	11	8	4	1
Convalescent leave	16	3	12	19	17	21	22	23	17
Foster care	1	------	------	------	.2	1	1	9	17
Direct discharge	83	97	88	81	83	78	76	68	67

[1] Percentages by type of release are based on total number of patients in the specified diagnostic category who were released alive within 18 months after admission. Therefore, within each diagnostic category, the percentages for the three types of release for each specified period add to 100.

[2] Except alcoholism and drug addiction.

subsequent first rehospitalization during the 18-month study period. The total number of additional inpatient episodes experienced by the cohorts during the 18-month period following admission, however, is also of interest.

Table 6 shows that 36 percent of the patients with psychotic disorders, 29 percent of patients with personality disorders, and 40 percent of those with alcoholic disorders had been released and rehospitalized one or more times in the 18 months following their initial admissions. Somewhat more than half of these in each cohort had only one additional experience. The greatest proportion with four or more additional episodes (4 percent) was among the alcoholics. Correspondingly, the mean number of additional episodes per patient was highest for patients with alcoholic disorders (0.75). Among 10.8 percent of the psychotics, 7.5 percent of the patients with personality disorders, and 18.4 percent of the alcoholics, the additional inpatient episodes occurred in facilities other than the three State hospitals.

Inpatient days within 18 months of admission. The longer initial hospital stay for the psychotic and his higher return rate after a brief stay in the community contributed to a much higher average use of hospital beds during the 18-month followup period by patients with psychoses than those with the other two categories of disorders (table 7). Psychotic patients had a median of 137 days of hospital care during this 18-month period, as compared with only 54 days for patients with personality disorders and for alcoholics. Sixty percent of the psychotic patients had a total hospital stay in excess of 3 months; for 21 percent, their stay was for more than 12 months. Only 5 percent of the psychotics had been hospitalized 2 weeks or less, in contrast with the almost 20 percent among the alcoholics and patients with personality disorders.

Table 6. Percent distribution of diagnostic cohorts by number of additional inpatient episodes within 18 months after admission

Additional hospitalization episodes	Psychotic disorders (N=1,984)	Psychoneuroses and personality disorders [1] (N=626)	Alcoholic disorders (N=1,653)
0	64	71	60
1	25	18	21
2	7	8	9
3	3	2	5
4 or more	1	2	4
Mean number	0.53	0.47	0.75

[1] Except alcoholism and drug addiction.

Table 7. Percent distribution of diagnostic cohorts by total days in hospital within 18 months after admission

Days in hospital	Psychotic disorders (N=1,984)	Psychoneuroses and personality disorders [1] (N=626)	Alcoholic disorders (N=1,653)
1–14	5	19	17
15–30	7	15	17
31–60	16	21	21
61–91	12	10	13
92–182	21	16	18
183–365	19	11	10
366–549	21	9	4
Median	137	54	54
Mean	199	108	92

[1] Except alcoholism and drug addiction.

Status at end of 18 months. As of 18 months after admission, 22 percent of the psychotic cohort were in a hospital (table 8), including 9 percent who had been in a hospital continuously plus 13 percent who had been released and rehospitalized one or more times. Another 15 percent of these patients had been released and were under clinic care, 14 percent were on long-term hospital leave but not under clinic care, and 47 percent were not under care of any psychiatric facility (*8*). Two percent were known to have died. In contrast, only 9 percent of the patients with personality disorders and 8 percent of the alcoholics were still residing in the hospital 18 months after admission. Clinic care was also relatively less frequent among those with personality disorders (9 percent) and among alcoholics (3 percent), and the proportion of these cohorts not under supervision of any psychiatric facility was therefore much higher than the proportion among psychotics.

The figures on patients not receiving treatment would have been somewhat lower if the

total number of patients who had migrated to other States where they may have been receiving services was known. Preliminary data indicate that at least 61 (or 1.4 percent) of the original cohort had left Maryland. These are minimum figures, however, since the current address of all persons in this study could not be determined.

Mortality within 18 months of admission. The proportion of patients known to have died within 18 months after admission was small—5 percent of the alcoholics and 2 percent each of patients with psychoses and personality disorders (table 8). These mortality rates were computed on a cohort basis which, since the denominator is the population at risk at the beginning of the study, provides slightly lower rates than the conventionally computed death rates. Even then the rates were considerably higher than comparable age-sex-specific death rates reported for the Maryland population (table 9). For alcoholics, mortality rates were six times higher for men and nine times higher for women.

Variation by Other Patient Characteristics

In a general overview of hospital release and return patterns among a cohort of patients, we have considered only the patient's diagnostic classification. Some highlights of the variation in these rates for other patient characteristics follow. See also tables 1–3.

When we considered diagnosis plus one other patient characteristic, we found that the high and low groups at various study points were those shown in the box.

Sex. Total admission rates were higher for men than for women, largely because of a 5-to-1 male-to-female ratio in alcoholic admissions (*9*). In contrast, admissions for psychoses and personality disorders were somewhat higher among women.

Although variations in release and return rates by sex and diagnosis were not large, the following differences were noted. Hospitalizations for psychotic and personality disorders were somewhat longer for men than for women. Men had a higher probability of returning to the hospital in all three diagnostic groups but particularly if they were alcoholics. Men also had a higher average number of inpatient episodes and a higher median number of days in the hospital than women. More male than female patients with psychotic and personality disorders were still hospitalized 18 months after original admission.

Race. In general, there was greater variation in rates between the two hospitals that formerly accepted only white patients than between them and comparable rates for the hospital that formerly only had nonwhite patients. The data would suggest, therefore, that varying hospital policies and standards were a greater determinant in release and retention patterns than race. Only among alcoholics, particularly males, was there a definite discernible pattern. Negro alcoholics had lower release rates and lower return rates than whites.

Marital status. Married patients consistently had higher release rates than the never married or the divorced, the widowed, and the separated for each diagnosis and at each point in time. Release rates were also higher for the previously married patients than for the never married, but these differences were not as pronounced or as consistent.

Return rates varied by diagnosis within each marital category. Among psychotics hospital-

Table 8. Percent distribution of diagnostic cohorts by status of patients 18 months after admission

Status	Psychotic disorders (N=1,984)	Psychoneuroses and personality disorders [1] (N=626)	Alcoholic disorders (N=1,653)
Deceased	2	2	5
Died in hospital	1	1	2
Died in community	1	1	3
Hospitalized	22	9	8
Continuously	9	3	2
Not continuously:			
With clinic care	6	4	2
Without clinic care	7	2	4
Not hospitalized	76	89	87
On long-term leave	22	9	6
Under clinic care	8	3	1
Long-term leave only	14	6	5
Under clinic care only	7	6	2
Not under care	47	74	79

[1] Except alcoholism and drug addiction.

ized less than 1 month, the married had a higher return rate than other patients. This differential, however, disappeared for psychotics hospitalized more than 1 month. In contrast, among patients with personality disorders and the alcoholics, married patients had lowest return rates; the highest return rates were found for the never married with personality disorders and for the previously married alcoholics.

Married men had fewer hospital episodes than other marital categories, while married women had more. Never married women generally had the lowest mean number of episodes. In each diagnostic cohort both married men and women had the lowest median days of hospitalization, and, except for alcoholics, the never married had the highest.

Age. For psychotics, age and release rates were inversely related—the youngest patients (25 to 34 years) had the highest release rates while those between 45 and 54 had the lowest. For the other two diagnostic categories, the findings on release rates were not as consistent by age and sex. Younger psychotics and alcoholics had more hospital episodes than older patients. Older patients with personality disorders, however, had higher return rates, more hospital episodes, and twice as many days of hospitalization as younger patients.

Level of education. Of all the characteristics studied, cohorts showed the least variation by education. The only consistent finding of note was that among patients with personality disorders both the release and return rates were higher for the college educated than for those with fewer years of education.

Table 9. Comparison of cohort death rates during 18-month followup period with death rates for the Maryland population, by age and sex

Age and sex	Total Maryland [1]	Alcoholic disorders	Psychotic disorders	Psychoneuroses and personality disorders [2]
Total 25–54 years	0.6	4.9	2.0	1.9
25–34 years	.2	1.7	.5	1.1
35–44 years	.5	4.1	1.6	2.6
45–54 years	1.2	7.5	4.6	2.4
Male 25–54 years	.8	5.2	2.3	1.7
25–34 years	.3	1.7	.3	.8
35–44 years	.6	4.6	1.8	4.0
45–54 years	1.5	7.7	6.8	--------
Female 25–54 years	.4	3.6	1.8	2.1
25–34 years	.2	1.6	.9	1.4
35–44 years	.4	2.3	1.5	1.5
45–54 years	.9	6.8	3.5	4.5

[1] The Maryland Department of Health supplied the rates for the Maryland population for the comparable 18-month period.

[2] Except alcoholism and drug addiction.

NOTE: Rates are per 100 population.

Place of residence. Differences in release rates by major area of residence were not striking, with one exception. Patients from rural counties in each diagnostic group had much lower return rates than others, particularly as time in the community increased; concomitantly they had fewer hospital episodes. Differences between Baltimore City and the metropolitan counties were generally small and inconsistent for psychotic and personality disorders, but

High and Low Groups at Various Study Points

Item	*High*	*Low*
Percent released within 3 months	Married alcoholics and voluntarily admitted alcoholics—*89 percent.*	Court-committed psychotics—*20 percent.*
Percent rehospitalized within 1 year, among those released within 1 year.	Patients with psychoneuroses and personality disorders, 2 or more previous hospitalizations—*53 percent.*	Patients with psychoneuroses and personality disorders from rural residences—*20 percent.*
Additional hospital episodes (mean)	Alcoholics with 2 or more previous hospitalizations—*1.24 episodes.*	Patients with psychoneuroses and personality disorders from rural residences—*0.26 episodes.*
Total days hospitalized (median)	Court-committed psychotics—*253 days.*	Married alcoholics—*40 days.*

Baltimore City alcoholics had higher return rates and more subsequent episodes than alcoholics from the metropolitan counties. It is noteworthy that Baltimore City men, particularly those with personality disorders or alcoholism, had a relatively large number of inpatient experiences compared with most other patient cohorts.

Type of admission. As might be expected, self-admitted patients had the highest release rates, followed by those admitted after certification by two physicians (that is, committed by the community or family), while court-committed patients had the lowest release rates. The most marked differences in release rates were found for court-committed psychotics. This patient group had a much higher retention rate than patients with other diagnoses and commitments; 20 percent were hospitalized continuously for 24 months compared with 7 percent of the other groups.

Overall, voluntary patients had the highest return rates. They also had the largest number of treatment episodes while the court-committed patients had the least. The median total days of hospitalization for court-committed psychotics was double that for the voluntary-committed and community-committed, while for alcoholics, the median days of hospitalization for court-committed patients was about 50 percent higher. In summary, court-committed psychotics had substantially fewer hospital episodes than those otherwise admitted, but each episode continued much longer.

In comparing types of admission, it should be recognized that many court-committed patients are released to a correctional institution. The probability of additional psychiatric hospitalization would therefore be different for them than for patients returned to the community.

Number of previous admissions. The release rate of patients decreased as the number of previous admissions increased. This decline was least pronounced for patients with alcoholic disorders. For each psychiatric disorder, however, the return rate was generally highest for those who had been hospitalized two or more times. For psychotics, this differential was not found until the patient had been in the community for more than 3 months.

Reflecting the higher return rates, the number of additional episodes of hospitalization and the number of days of hospitalization increased sharply with the number of prior admissions. Alcoholics who had had two or more prior admissions averaged an additional 1.2 episodes, the highest hospital reutilization rate found. For patients with personality disorders, the median total days of hospitalization for those with two or more prior admissions was more than two and a half times the comparable figure for patients with fewer admissions.

Furthermore, 18 months after admission, the highest proportion of patients hospitalized either continuously or intermittently was among those who had had previous hospitalization episodes. Thus, as has been shown previously (*10*), the patient who has been ill previously is more likely to require subsequent additional psychiatric care than the patient who has not been treated before.

Discussion

We have presented a variety of data, some new and some confirming earlier observations. Although these data are statistical, they have many clinical and administrative implications. Moreover, they are broadly relevant to many issues of social psychiatry and community mental health planning and program evaluation. We shall consider some of the highlights of our findings and suggest a few of the questions which they raise and some of the many possible inferences which can be drawn.

The probability of a person's being hospitalized, released, and rehospitalized is affected by a number of interrelated factors, which can be grouped into the following major categories: (*a*) the type and severity of illness, (*b*) social and demographic factors related to the patient and his environment, and (*c*) hospital policies and practices, including availability of facilities.

While the influence of each of these factors is difficult to tease out separately, our data indicate certain clear, consistent patterns. For example, we have known from previous studies that both the never married and the previously married patients have a greater rate of hospitalization and of clinic admission than those currently married (*11–13*). The present study, along with other recent studies (*14*, *15*), shows

that the first two of these marital groups are also retained longer in the hospital and have a substantially higher median total days of hospitalization than the married. The higher release rates for the married probably relate not only to the patient's family and community relationships but also to his psychiatric status and to hospital practices. The fact that married psychotics who had been hospitalized for less than 1 month had a much higher return rate than those not married suggests that some married patients may have been released prematurely and then had to return for further treatment. Both the early release and the subsequent rehospitalization perhaps resulted from family pressures.

Younger patients were generally released earlier (*16*), had a lower rate of rehospitalization, and a smaller average total days of hospitalization than comparable older patients. These data suggest differences in the severity and chronicity of illness as correlated with age. The availability of employment and stability of environment may be additional factors generally in favor of the younger patient. Data on the level of the patient's functioning and degree of impairment at admission and on release would assist in studies of the effect of age on prognosis.

Admission rates to public mental hospitals are consistently higher for nonwhites (*9*). Unfortunately, our data do not permit any definite conclusions with respect to release and return rates by race. Differences observed between the two hospitals which formerly accepted only white patients and the hospital which had only nonwhite patients were generally smaller than those observed between the white hospitals. Our tentative conclusion would be, therefore, that while race may have been a factor in the retention, release, and rehospitalization of an individual patient, in Maryland at least, hospital practices have an influence of sufficient magnitude to obscure the relationship.

While release rates for the rural patient are not very different than those for the urban patient, the rural patient is much less likely to return to the hospital. Distance to the hospital would certainly seem to be one factor in the relatively low hospital admission and readmission rates of rural residents (*9*). Other questions, however, are as yet unanswered. For example, does the local health department play a significant role in posthospital care through its mental health clinics and its public health nurses? Is the rural patient more likely to remain at home even if ill?

Age- and sex-specific mortality rates were substantially higher among our patient cohorts than in the comparable Maryland general population. Our patient population, however, is fairly selective and concentrated among the lower socioeconomic segments of the State. In analyses of life expectancy and causes of death, therefore, a comparison group possessing similar characteristics should be used. Nevertheless, socioeconomic factors alone cannot explain the very much larger patient death rates noted in our cohorts, particularly among alcoholics. A number of questions have not been fully answered, and further investigations are indicated. Is there a significant difference today in the life expectancy of mental patients and comparable cohorts of the general population? Is there a significant difference in the life expectancy of groups of similar age and diagnosis treated in public hospitals, private mental hospitals, and outpatient psychiatric facilities? Do any causes of death contribute unduly to observed variations? To what extent can mortality patterns among psychiatric patients be reduced by closely coordinated community and hospital programs stressing the relationship of physical and mental illnesses?

Approximately 45 percent of the psychotics, 40 percent of the alcoholics, and 30 percent of the patients with personality disorders who were released were rehospitalized within 18 months regardless of the length of their previous hospitalization. These are sizable figures. Have our new treatment methods and concepts actually reduced the chronicity among patients, or have they merely substituted in-and-out movement for an extended hospitalization? What are the advantages and disadvantages in decreasing the length of stay to a minimum when there is a high probability of subsequent readmission? Is the reduction achieved in the total number of days of hospitalization of benefit to the patient and his family, or are patients being released prematurely (*17*)? Our data show that in many instances early release is followed

by early readmission. While much emphasis has been placed on the avoidance of prolonged hospitalization, these data point up possible disadvantages in excessively short hospital stays.

How will these patterns of hospitalization, release, and rehospitalization of psychiatric patients be altered by the development of coordinated programs of hospital and community care, geared to provide continuity of services and earlier treatment? There is a general belief that high rates of some mental illnesses are associated with social isolation and loneliness. The higher retention rates and generally higher return rates that we observed for the nonmarried are consistent with this hypothesis. Knupfer's data (*18*) also support the view that single men in particular are frequently socially isolated and that they may be "more psychologically impaired to begin with" than married men or single women. Our data support the widely recognized need for a variety of prehospital and posthospital community programs and expanded social services. Our data also provide baselines which will be useful in evaluating the effectiveness of such comprehensive community-centered programs (*19*).

Further cohort studies based on longer observation periods and sample clinical and field social studies are needed to compare the relative merits of brief "interrupted" hospitalizations with those of prolonged hospitalization from the standpoint of the patient, his family, and the community (*17*). Supplementary information on the patient's level of functioning at key points of hospital and community stay are also needed.

Comparable studies conducted in psychiatric register areas in other parts of the United States should aid in providing a baseline of definitive information which will be of value to the social psychiatrist and to planners and administrators of community mental health programs.

Summary

A study was made of the patterns of retention, release, and rehospitalization of patients admitted to three Maryland State mental hospitals during the 18-month period July 1, 1961–December 31, 1962. All patients were followed until June 30, 1964—providing an observation period ranging from a minimum of 18 months to a maximum of 36. Selected for inclusion were patients between the ages of 25 and 54 years who were reported with diagnoses of alcoholism, psychoses, psychoneuroses, or personality disorders. In addition to diagnosis, the following patient characteristics were studied: sex, race, marital status, age, level of education, place of residence, type of admission, and number of previous admissions.

More than half of the patients in each of the three diagnostic cohorts had been released within 3 months of admission and more than 80 percent within 12 months. Psychotics had the lowest cumulative percent released at each point in time, while alcoholics had the highest. At the end of 18 months after hospital release, 45 percent of the psychotics, 45 percent of the alcoholics, and 32 percent of patients with personality disorders had been rehospitalized.

In the 18 months following initial admission, 36 percent of the patients with psychotic disorders, 29 percent of those with personality disorders, and 40 percent of those with alcoholic disorders had been rehospitalized one or more times. Somewhat more than half of these in each cohort had only one subsequent rehospitalization. The mean number of additional hospitalization episodes was highest for patients with alcoholic disorders (0.75) and lowest for those with personality disorders (0.47).

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To Study Human Factors in Medical Quackery

The Food and Drug Administration is planning a nationwide study of factors that induce people to fall for fakes and swindlers in the health field.

Joining the FDA in the effort are the Administration on Aging, National Institute of Child Health and Human Development, National Institute of Mental Health, and Vocational Rehabilitation Administration—all within the Department of Health, Education, and Welfare—the Agricultural Research Service of the Department of Agriculture, and the Veterans Administration. A number of voluntary health agencies, the American Medical Association, and the National Better Business Bureau have helped in the planning.

The study will seek to determine the influence of such factors as family and educational background, folk medicine customs, and health experiences on consumer attitudes toward health products, services, and information. It will examine the extent to which such factors make some persons prone to accept false and misleading promotions for health products and services, or resistant to sound medical and health information. With this knowledge, the agencies hope to be able to devise more effective educational and other programs to protect the public against health frauds and quackery.

More than 3,000 persons will be interviewed in the 18-month study. It will be conducted under a contract with a nongovernment research agency to be selected on a competitive basis.