

AN APPROACH TO THE EFFECT OF ATARAXIC DRUGS ON HOSPITAL RELEASE RATES¹

LEON J. EPSTEIN, M.D., RICHARD D. MORGAN, A.B., AND
LYNN REYNOLDS, M.A.²

The Department of Mental Hygiene has for the past three years been assembling its routinely collected data for the purpose of cohort follow-up analysis as outlined by Kramer(1), Israel and Johnson(2), and Pollack(3).

Mental hospital population studies have, until recently, been limited to census-type approaches or cross-sectional views. With such approaches one could ascertain for any given period the number of admissions, discharges or deaths, or the patient population at any given time. The advantage of cohort follow-up analysis is that it permits one to obtain such measures as the likelihood of release as well as estimates of length of hospitalization prior to release for certain cohorts of patients. The term *cohort* is applied to any group of patients with one or more characteristics in common, such as age, sex, race, etc. An example of the information which one may obtain from such cohort follow-up analyses may be seen in Figure 1.

This chart describes the status as to hospitalization of all white male schizophrenic patients 25-44 years of age who were admitted to California state hospitals for the mentally ill in 1949. At any point after admission one is able to determine the percentage in each category, and trends are readily recognized. It is apparent that this technique has wide usage in studying trends with respect to certain characteristics of patients under treatment as well as certain aspects of the character and outcome of their treatment. It thus provides an additional important tool not only for operational research but supplies base lines for continuing reviews of the nature and effect of treatment programs.

One of the initial problems approached

with the aid of certain of these cohort data was the impact of tranquilizing drugs on the recent steady decline in state mental hospital populations. This decline is a phenomenon which has been occurring in California as well as in many other states (4). This report is the first of a planned series wherein the use of drugs with various patient cohorts will be studied. The data for these studies consist of information concerning drug usage in the State of California Dept. of Mental Hygiene. For a period of 30 months, extending from July 1, 1955 to December 31, 1957 information was recorded for every patient in the 10 mental hospitals to whom such drugs were administered: age, sex, diagnosis, legal classification (method of admission), name of drug, number of days on drug, total amount of drug, date initiated—date ended, and reason for discontinuing.

During this period some 20,000 courses of drug therapy were carried out on some 10,000 patients. This hospital population sample is now in the process of being studied and interhospital comparisons of drug usage are also being made. The only limitations on drug treatment in all hospitals were budgetary, i.e., in terms of funds available for psychotropic drugs. The drug allotment per patient, however, was the same for each hospital. For the first year of data collection, this limitation is important since, at the beginning, the California Dept. of Mental Hygiene's expenditures for these drugs tended to be comparatively low.

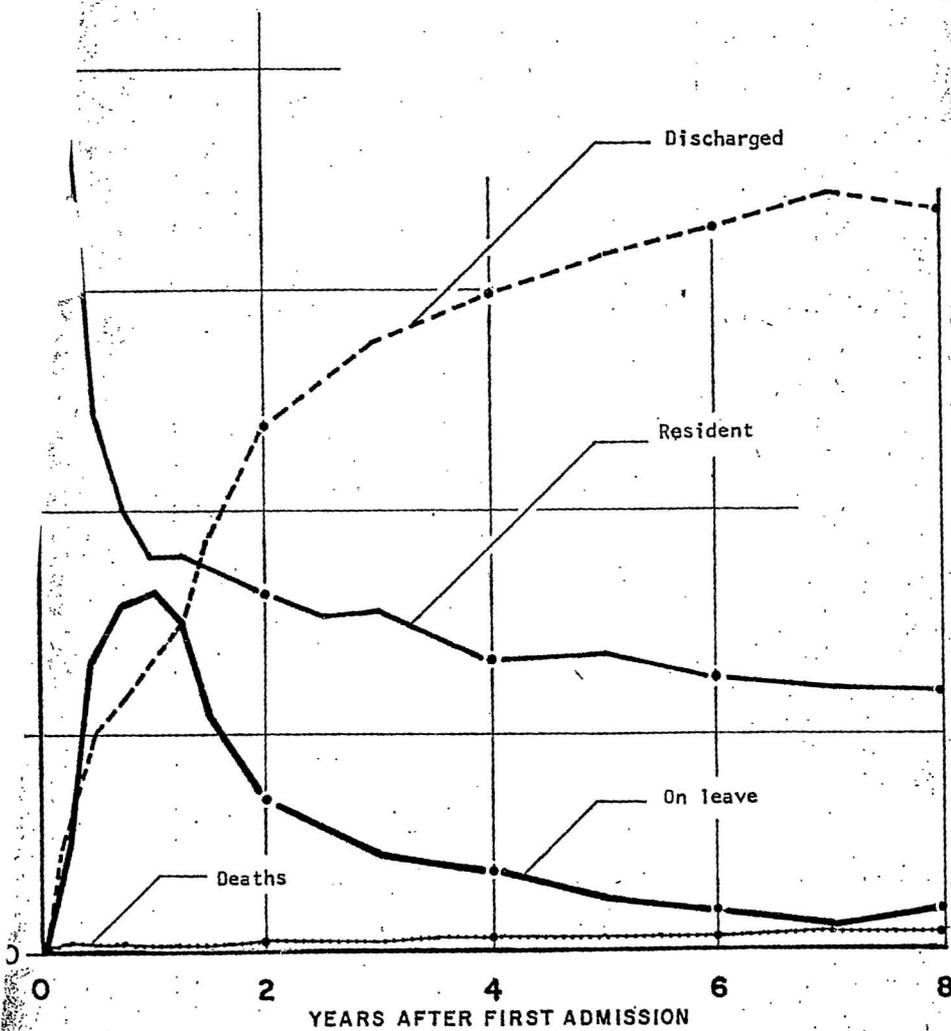
It is not possible at the present time to describe the drug-treated group as a whole, since the 20,000 IBM cards relating to this group are still interfiled with the total deck of some 300,000 cohort cards pending the completion of certain cohort studies. It is possible, however, at this stage to present certain data relative to white male first admissions between the ages of 25-44 with the diagnosis of schizophrenic reaction. We are endeavoring to see, by looking at sig-

¹ Read at the 117th annual meeting of The American Psychiatric Association, Chicago, Ill., May 8-12, 1961.

² Calif. State Dept. of Mental Hygiene, San Francisco, Calif.

FIGURE 1
Records at Successive Points of Time after First Admission, for Male White Schizophrenics,
aged 25-44 Years, Committed as Mentally Ill in 1949 to California State Hospitals
for General Psychiatry

N = 421 (100 percent)



it population sub-groups such as this what conclusions we may be able to about the relationship between length hospitalization and drug treatment. We plan to examine more closely those

patients whose hospital stay appears to have been altered because of drug treatment in situations where these drugs are used in routine fashion in our settings. In addition, we are endeavoring to elaborate further this

FIGURE 2
 All Hospitals—The Retention Rates of Drug Treated and Non-Drug Treated Patients—1957

N = 740 (100 percent)

PERCENT

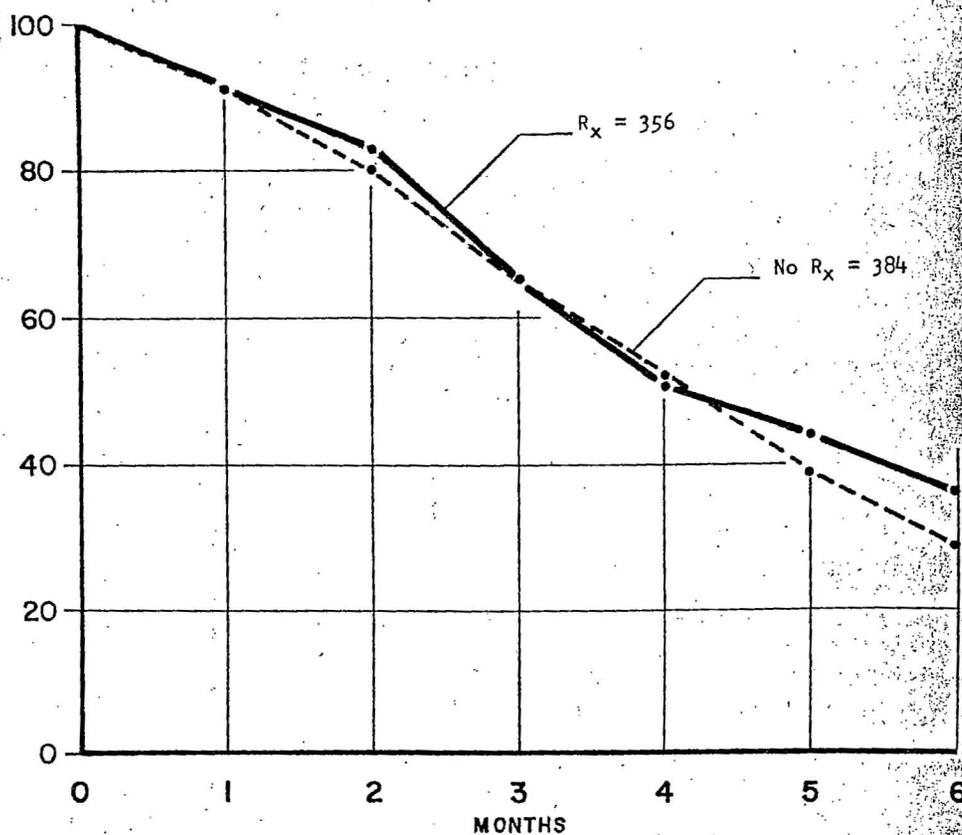


FIGURE 3
 All Hospitals—The Retention Rates of Drug Treated and Non-Drug Treated Patients—1956

N = 673 (100 percent)

PERCENT

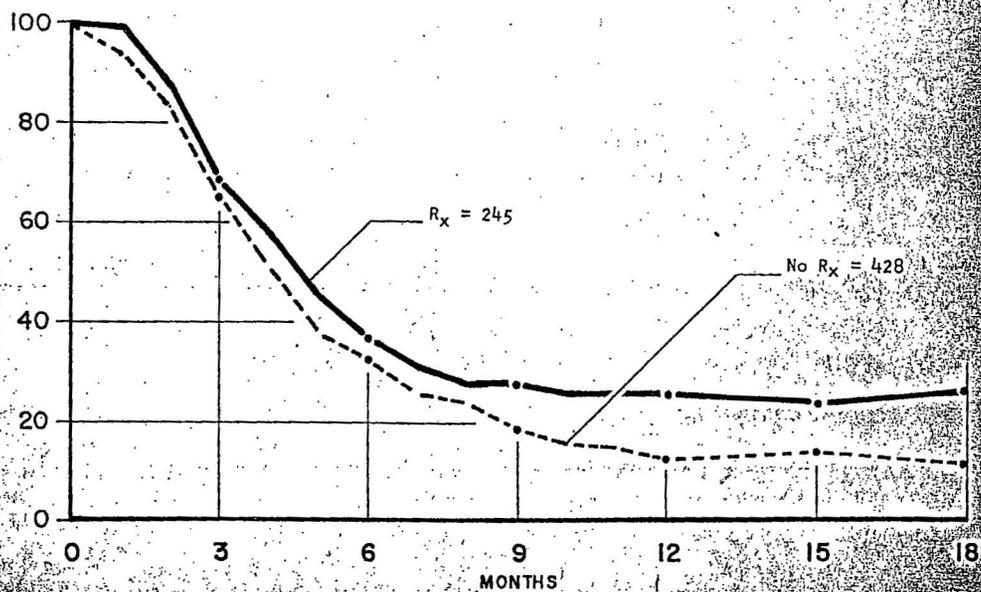


FIGURE 4
The Retention Rates of Drug Treated and Non-Drug Treated Patients in Three Hospitals of High Drug Usage—1956

N = 215 (100 percent)

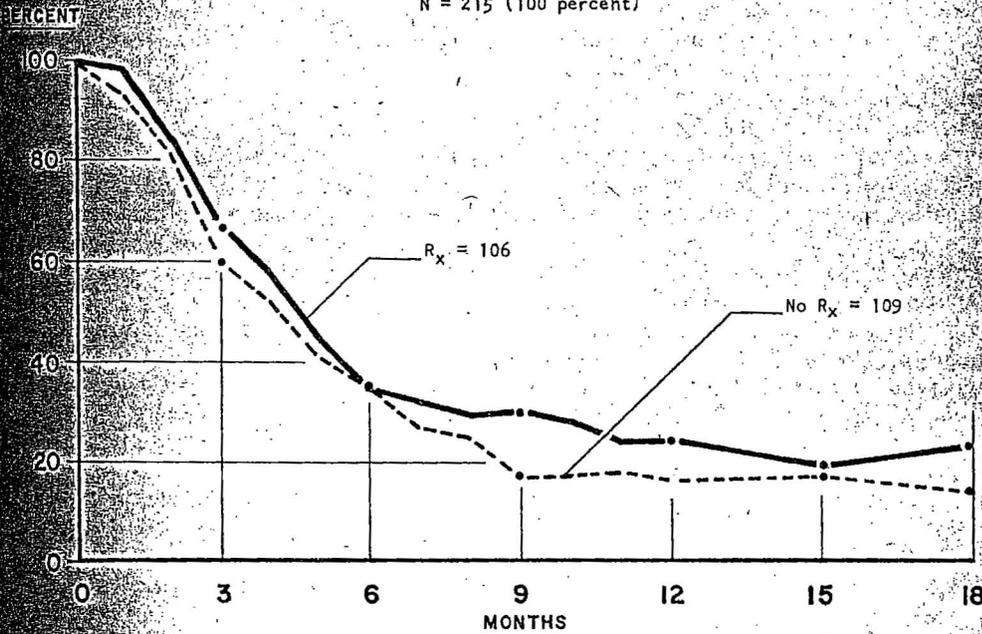
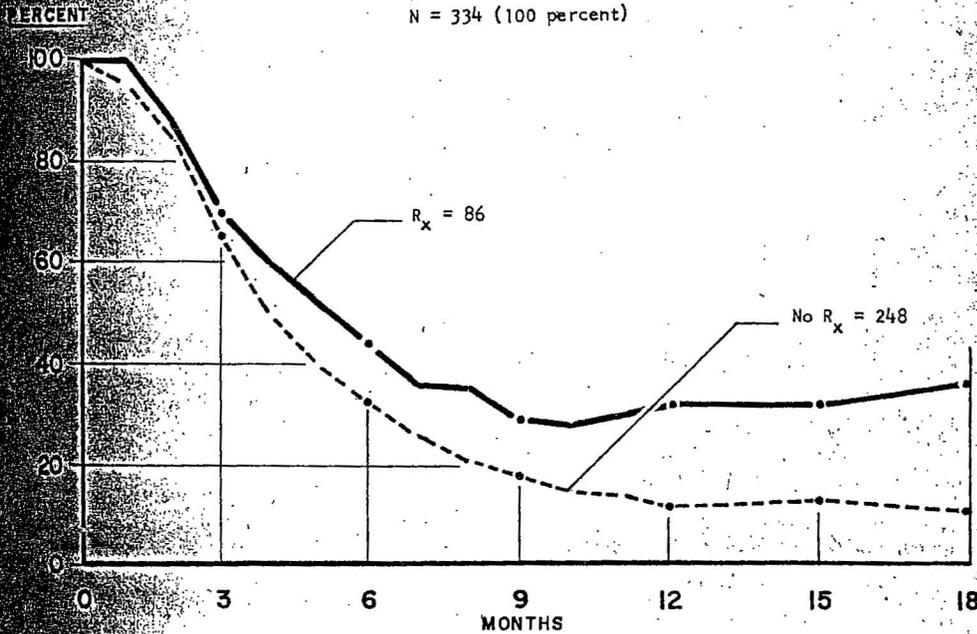


FIGURE 5
The Retention Rates of Drug Treated and Non-Drug Treated Patients in Three Hospitals of Low Drug Usage—1956

N = 334 (100 percent)



method for the study of problems associated with patient movements to and from institutional settings.

One is painfully aware, to be sure, of the make-up of drug data such as those being studied here. They involve a variety of physicians, of hospital settings, of drugs, of drug timing, drug dosage, of length of treatment and of discharge criteria. In short, there are no experimental controls with respect to usage, and the data represent information about tranquilizing drugs as they were used in this given period in all of California's state mental hospitals. As such, however, they are excellent for studying drug effects and release rates under operational conditions. To be sure, release from a hospital, in and of itself, leaves much to be desired as a sole criterion of the effec-

tiveness of any form of treatment. The question at hand, however, is that of the relationship between ataraxic drug usage and release rates.

Two groups of first admission male schizophrenic patients are being studied: those admitted in the 1956 and 1957 fiscal years to the 9 major state hospitals for the mentally ill. For fiscal 1957, 740 such patients were admitted and for the previous year, 673. Figures 2 and 3 illustrate the hospital retention rates of these patients at given points in time. Separate curves are given for those patients treated and those not treated in each of these years.

Certain factors become apparent on inspecting these figures. Of 740 cases in the 1957 group, 356 cases, or 48%, received ataraxic drugs at some time during their

FIGURE 6
The Retention Rates of Drug Treated and Non-Drug Treated Patients in Three Hospitals of High Drug Usage—1957

N = 269 (100 percent)

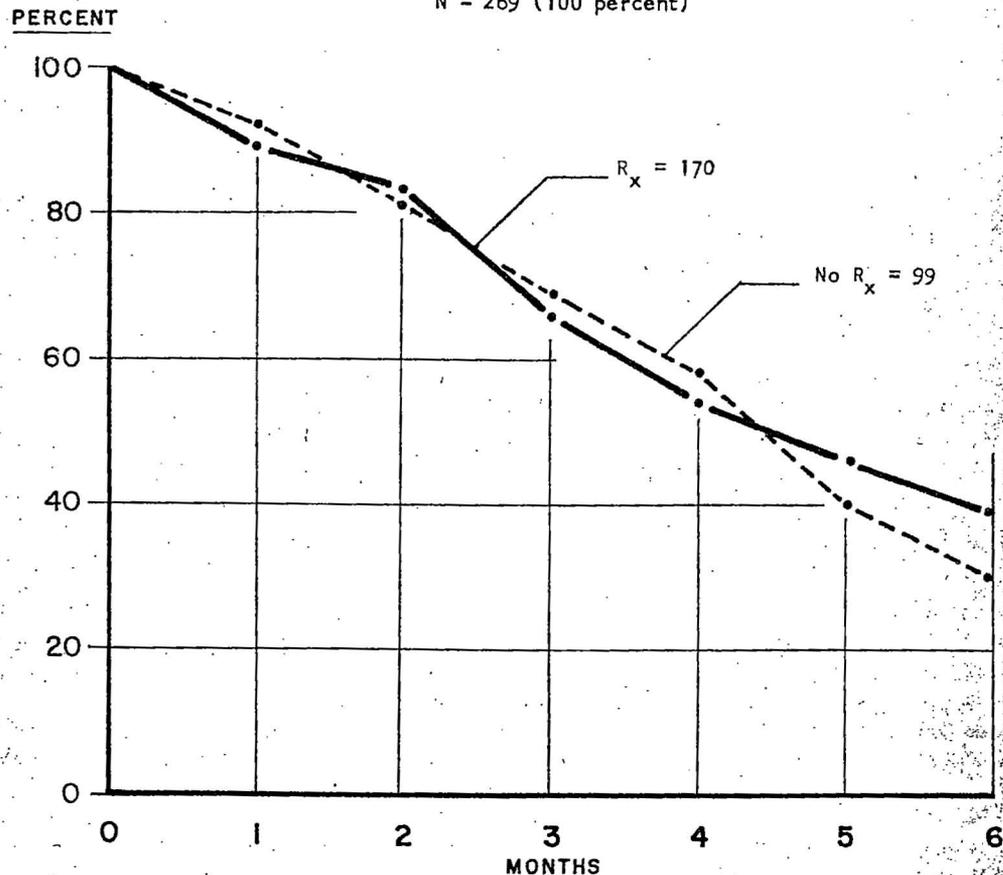
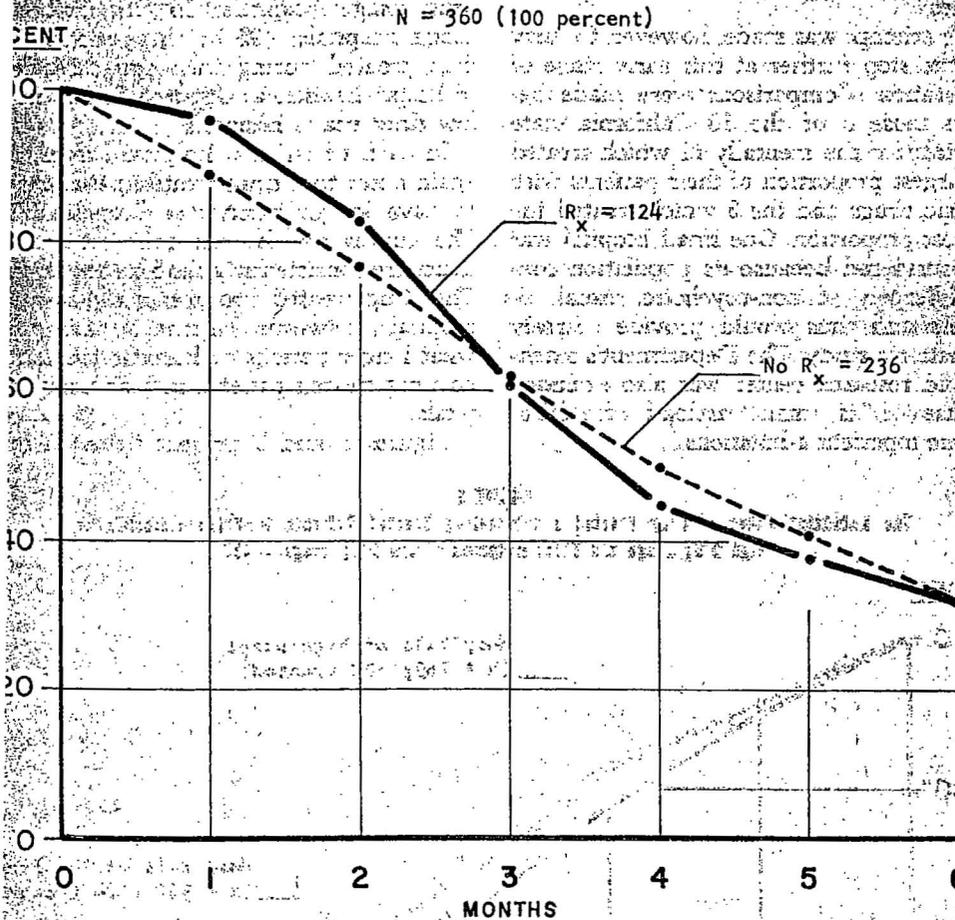


FIGURE 7
The Retention Rates of Drug-Treated and Non-Drug Treated Patients in Three Hospitals of
Low Drug Usage—1957



6 months of hospitalization. As we
v, the release rate of this group tends
e comparatively high during the first
ths of hospitalization. Seventy-one per-
of the non-drug treated and 64% of
drug treated groups had been released
in 6 months of admission. The same
d is evident for the 1956 population
er study. Thirty-six percent of this
p received medication at some time
ng the first 18 months of their hospi-
ation; 67% of the non-drug treated pa-
ts were released at 6 months; and 88%
8 months. For the drug treated patients,
had been released at 6 months and
at 18 months.

hese data are amenable to a host of
rpretations. It is apparent that if one

looks only at these data one is able with
self-righteous courage to form a conclusion
as to their meaning which is quite in keep-
ing with one's presently existing philosophy
about the effectiveness of drugs. Thus, one
might say, these data indicate that in Cali-
fornia patients were kept on maintenance
rather than treatment dosage. Another might
say, they clearly indicated that staff physi-
cians were carefully selecting only the sick-
er patients who otherwise might have
stayed even longer. Another might go so
far as to say the reason for such curves is
that the treated patients remained hospital-
ized largely because of side effects and
might have been able to leave the hospital,
were the treatment terminated. We are sure
that there are not only other interpretations

but that most readers believe they could predict the specific interpretation which would be offered by many of their colleagues.

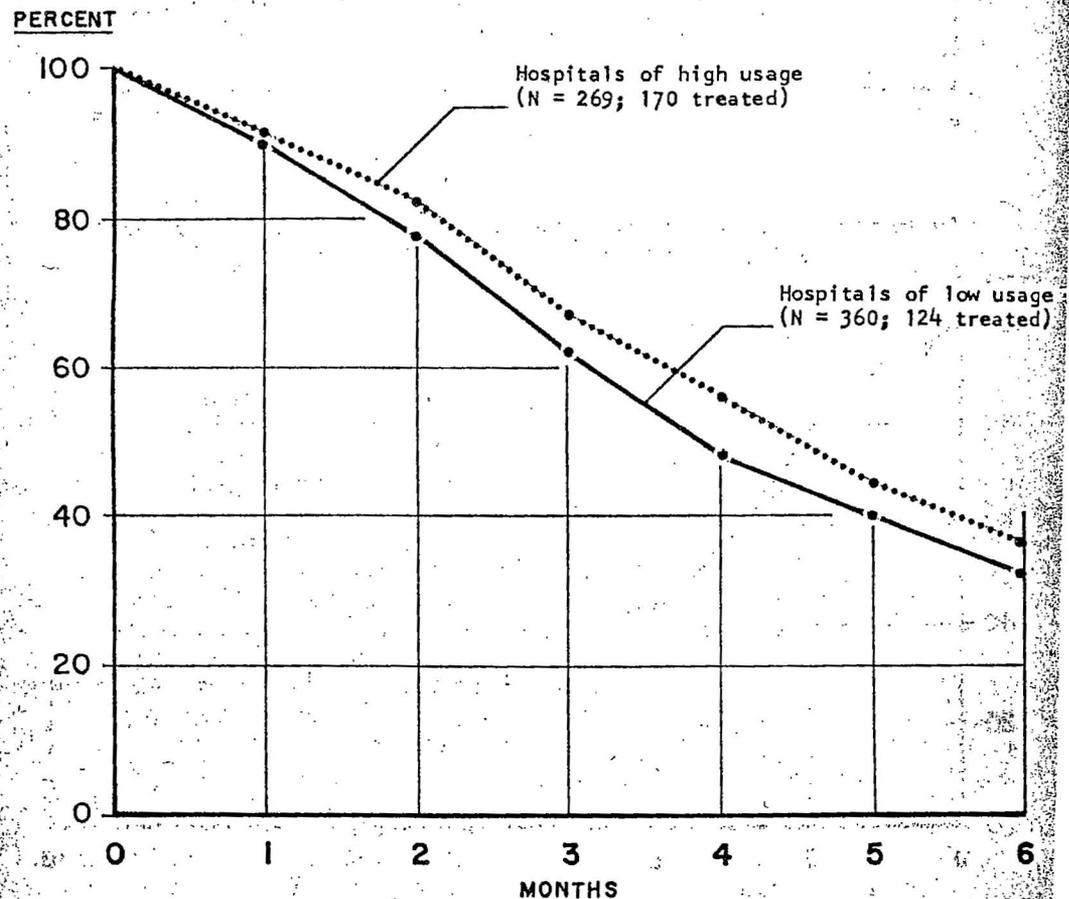
The attempt was made, however, to carry this one step further at this early stage of deliberation. Comparisons were made between those 3 of the 10 California state hospitals for the mentally ill which treated the largest proportion of their patients with ataraxic drugs and the 3 which treated the smallest proportion. One small hospital was not considered because its population consisted largely of non-psychotic sexual offenders and thus would provide scarcely any data for study. The Department's teaching and research center was also excluded because of its small caseload of schizophrenic inpatient admissions.

Figures 4 and 5 present for 1956 the retention rates of first admission male schizophrenic patients in the 3 high and 3 low drug usage hospitals. In the high drug usage hospitals, 49% of the patients were drug treated during their first 18 months of hospitalization as opposed to 26% in the low drug usage hospitals.

In each of these 2 hospital groups, one again notes that drug treated patients tend to have longer periods of hospitalization. The curves for the non-drug treated patients are consistently alike for the 2 groups. The drug treated group in the low usage hospitals, however, seems to have somewhat longer periods of hospitalization than do drug treated patients in high usage hospitals.

Figures 6 and 7 present these data for

FIGURE 8
The Retention Rates of Drug Treated and Non-Drug Treated Patients In Three Hospitals of High Drug Usage and Three Hospitals of Low Drug Usage—1957



ical year 1957. A threefold increase in amount budgeted for the purchase of isotropic drugs resulted in an increase percentage of treated patients: 3

hospitals of high drug usage treated 63% of their cohort of admissions in 1957, and 3 hospitals of low drug usage treated 34%. It is noteworthy that the retention curves

FIGURE 9

The Retention Rates of Drug Treated and Non-Drug Treated Patients in Three Hospitals of High Drug Usage and Three Hospitals of Low Drug Usage—1956

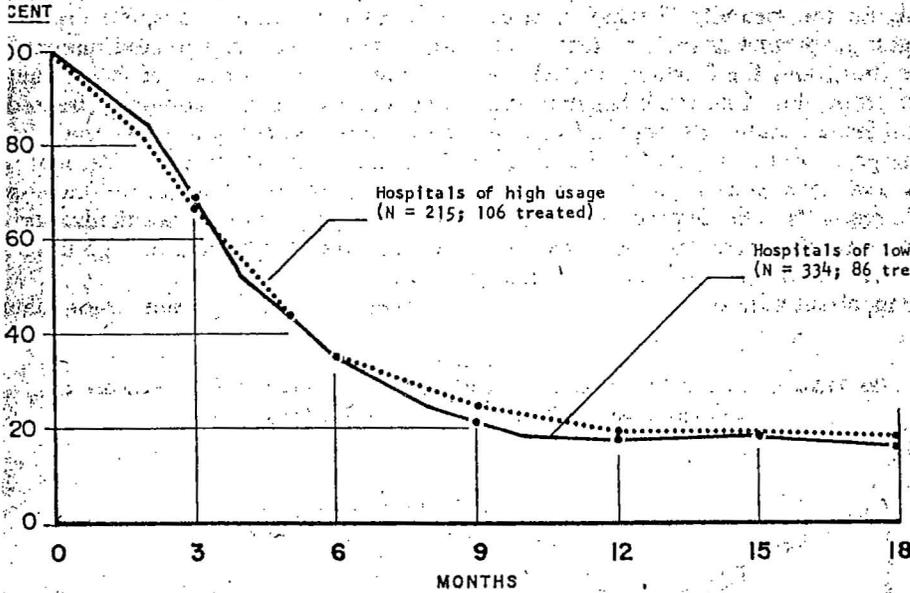
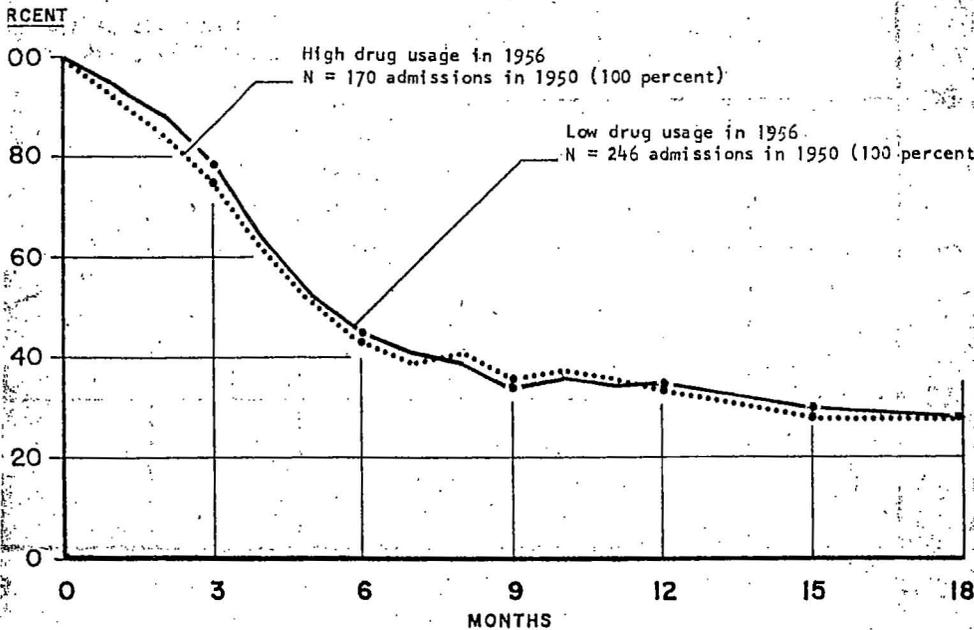


FIGURE 10

The Retention Rates of Male Schizophrenic First Admissions in 1950, to Three Hospitals with High Drug Usage and Three Hospitals with Low Drug Usage in 1956



for treated and untreated patients show much more overlap, both for high-usage and low-usage hospitals.

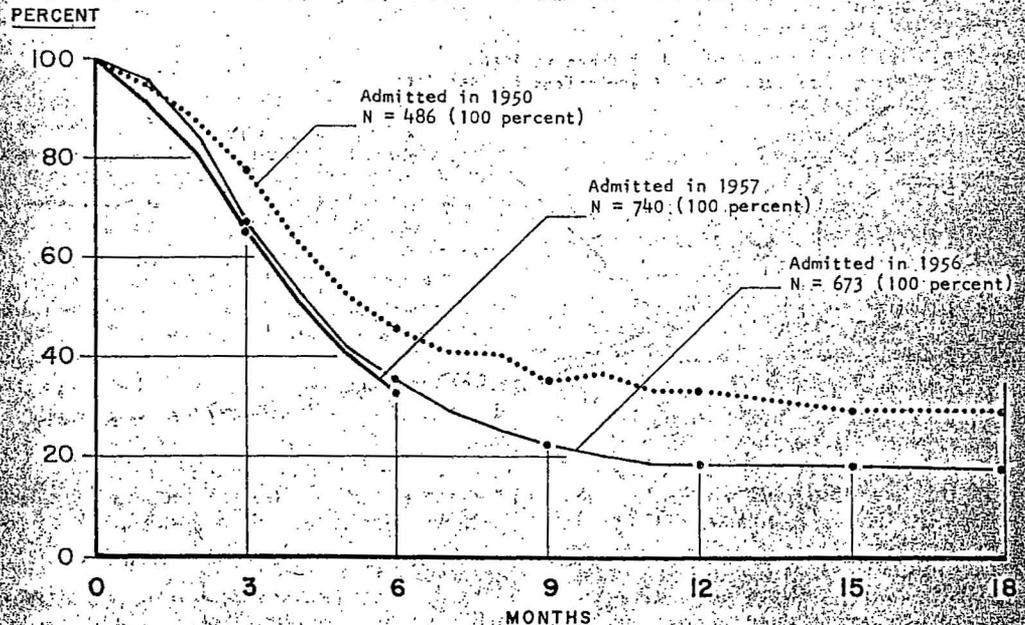
It appeared of interest to compare the high-usage and low-usage hospitals with respect to over-all retention rates for admissions in 1956 and in 1957, by combining the groups of treated and untreated patients for each admission year. The comparison is presented in Figures 8 and 9. For 1956, scarcely any difference was found between the 2 hospital groups, but for 1957 the hospitals of high-usage show a slightly higher retention rate.

If one examines retention rates for these hospitals for 1950 with this same patient category (Figure 10), one finds that these curves scarcely differ, thereby indicating little difference in the retention rates in high and low drug usage hospitals prior to the introduction of ataraxic drug therapy.

However, for treated and untreated patients combined, there is a notable difference for all California state hospitals between the retention rate for 1950 and the rates for 1956 and 1957, as may readily be noted in Figure 11. In addition, the data for the years 1951 through 1955 are available and are consistent with this trend.

One may reach certain conclusions from these data insofar as the State of California is concerned. With respect to males diagnosed as suffering from schizophrenic reactions on their first admission, and insofar as ataraxic drugs were used in these hospitals during the 1956 and 1957 fiscal years, their usage does not appear to have been associated with the more rapid release rate which has been observed in recent years. It may well be, to be sure, that tangential factors associated with their use have resulted in an altered hospital environment with more frequent and earlier releases. Many other improvements and policy changes, however, have also occurred during these years, a factor which precludes unequivocal conclusions. The fact is, however, that with respect to the patient groups studied, where a difference is found between the retention rates of ataraxic drug treated patients and those not so treated, the untreated patients consistently show a somewhat lower retention rate. Furthermore, the hospitals wherein higher percentages of first admission schizophrenic patients are treated with these drugs tend to have somewhat higher retention rates for this group as a whole. These would seem to be provocative data.

FIGURE 11
Retention Rates for Male Schizophrenic Patients, All Hospitals: First Admissions in 1950, 1956, and 1957



intend to explore other groups in similar fashion. We have evidence in a controlled trial which leads us to believe that atarax medication is effective with chronically schizophrenic patients. We intend to try other patient groups in similar fashion for at least 5 years and plan to present this not only for these years but hope for medication in other years as well. In this fashion we hope to be able better interpret the relationship between relapse rates and ataraxic drug usage.

BIBLIOGRAPHY

- Kramer, M., *et al.*: Public Health Service Publication No. 445: Public Health Monograph 32. Washington, D. C.: U. S. Govt. Printing Office, 1955.
- Israel, R. H., and Johnson, N. A.: *Am. J. Psychiat.* 112: 903, May 1956.
- Pollack, E. S., *et al.*: Public Health Monograph No. 58. Washington, D. C.: U. S. Govt. Printing Office, 1959.
- Kramer, M., and Pollack, E. S.: *Am. J. Psychiat.* 48: 1003, Aug. 1958.

DISCUSSION OF TWO PREVIOUS PAPERS

THOMAS D. GRIFFITH, M.D. (Brooklyn, N. Y.)—Statistical reports such as the 2 papers presented here do not always excite the same degree of interest and attention as reports of more clinical nature, but it might be worthwhile to re-emphasize an old fact that the vast under-usage of psychiatric care and treatment has been, is being, and will be given in institutions such as these reports are drawn from. It follows that the records of these institutions are repositories of a vast amount of meaningful information for evaluation of past and present treatment methods as well as for future planning. Drs. Brill and Epstein, along with their indispensable statisticians, have presented a good sample of the potential riches to be mined from this source.

Dr. Epstein's paper presents some rather provocative data concerning a group of patients treated with ataraxic drugs. As his data show, the treated patients had lower relapse rates than the non-treated; also, relapse rates over the reported period were not significantly greater in the high drug usage hospitals than in the low drug usage hospitals. If we assume that the control groups were comparable to the treated groups as to degree of sickness, if we knew that the drug dosage was adequate in amount and length of administration, we could have rather discouraging conclusions

to draw. However, Dr. Epstein's report, as he states, is a preliminary one and is to be followed by others in which more variables will be controlled. I hope these results which appear to be paradoxical will stimulate some lively discussion from the floor. My personal experience and impressions convince me that the psychopharmaceutical agents are a potent factor in earlier and increased rates of relapse. I certainly look forward to further reports from Dr. Epstein and his colleagues from California.

Dr. Brill has long had his finger on the statistical pulse of the New York State mental hospitals. Now, he has given us his third report since the beginning of the widespread use of psychotropic drugs 6 years ago. Dr. Brill is an astute and painstaking investigator and I find little to question in his observations and cautious conclusions. It is now clear that it is impossible to evaluate the effect of the psychotropic drugs as an isolated factor when so many other important changes in the hospitals and community have occurred concomitantly. As many observers have noted, the effects of these drugs have acted almost as a catalyst; the reaction appears still to be gaining momentum and spreading out until hardly any area of mental health is unaffected.

I was asked to discuss these papers from the point of view of an aftercare clinic psychiatrist. Our aftercare clinics, a facility of the New York State Department of Mental Hygiene, supply aftercare to any patients placed on convalescent care who reside in the 5 boroughs of New York City. These clinics stress intensive follow-up care by a psychiatrist and psychiatric social worker of both the patient and his family. Medication is continued without interruption in the transfer from the hospital to the clinic and is adjusted as necessary for maintenance. Close liaison is maintained with other community facilities such as the Department of Welfare, social agencies, vocational rehabilitation agencies, and other community clinics. Two of the four aftercare clinics have associated day hospitals. Through an intensive program including individual and group psychotherapy, pre-vocational training, occupational therapy and ECTs, where indicated, many chronically regressed and relapsing patients are kept from rehospitalization.

No report can be all-encompassing; encyclopedic as Dr. Brill's paper is, I believe he has not given the aftercare clinic its due, especially as to its effect on the hospital return rates and hence the hospital population figures generally.

Many of us in the field are convinced that eventually the mentally ill patient will, for the

most part, be treated in the community on an outpatient basis and the current trends in state hospitals will continue in the direction of this goal. Our clinics must in time expand to become before- as well as aftercare services. Practice, theory, and simple economics favor this trend. Even now, the aftercare clinics can show substantial proof of their efficacy. I would like to offer a few more statistics to emphasize just what our clinics are accomplishing.

The following data are taken from the annual report of the New York City aftercare clinics for 1959-1960 prepared by our director, Dr. Donald Carmichael. The figures are approximate. During the reported year 17,000 patients were placed in convalescent care from all the state institutions; of these approximately 9,000 attended the New York City aftercare clinics, the remaining 8,000 being followed by the aftercare clinics of their individual institutions. The rehospitalization rate in the New York City aftercare clinics was 34% and the rate for the other 8,000 was 50.8%.

Dr. Carmichael showed (and this emphasizes that intensive aftercare is a bargain) that the money thus saved in decreasing the return rate was about twice the total yearly budget of the New York City aftercare clinics.

At the Brooklyn Aftercare Clinic a few years ago, a one-year research study was done in which two of the clinic psychiatrists and their social work teams treated smaller case loads, and in which cases were picked up more quickly after hospital release and followed more intensively. We were able to reduce the rehospitalization rate to 17%.

There are some other factors which may further decrease rehospitalization but which I cannot, at this time, substantiate with figures. For example, the New York City aftercare clinics actively encourage selected patients at the time of discharge to seek private and low-cost clinic psychotherapy; we employ family physicians freely for medical supervision where continued medication is indicated; and our day hospital program is active, growing, and effective.

DONALD G. MCKERRACHER, M.D. (Saskatoon, Canada).—The papers of Dr. Brill and Dr. Epstein raise many questions. What do the fluctuations in mental hospital admission, discharge and resident rates actually mean? How have the new treatments, especially the ataractic drugs, affected these statistics? Does this picture not raise questions about the effectiveness of all state hospitals? With or without

the tranquilizers, should we continue to admit and keep within these huge institutions those who are confused, depressed, bewildered and anxious?

I shall first give my own interpretation of what Drs. Brill and Epstein are saying, and then agree or disagree according to my own experience. Dr. Brill has discussed mental hospital statistics of the past 10 years as collected in the State of New York. As in his 2 previous papers, he points out that after many years of annual increase, the total patient population suddenly began to drop. This sharp decline, which began in 1956, he links to the large scale use of ataractic drugs which had started 2 years previously. He also points out specific changes in the character of the mental hospital population toward fewer chronic schizophrenics, fewer younger patients, and more admissions with an even greater increase in discharges. Giving credit to the new drugs for triggering the changes, he challenges disbelievers to present proof to the contrary. Finally he attempts a projection of future New York mental hospital population, based on his study of the statistics of the past 10 years.

When I first compared the date of patient population decline in New York State with similar changes in Britain and Canada I thought I had discovered a discrepancy. The drop occurred in 1956 in New York, 1954 in Britain, and 1958 in Canada, even though all these areas began using the ataractic drugs during the same year—1954. However, this could be explained by the difference in the increase of population growth in the 3 areas. Therefore, it becomes clear that the decline in mental hospital patient rates per 100,000 commenced immediately after the new drugs were first used in Britain, Canada and New York State. So the evidence is overwhelming in support of Dr. Brill's claim that the fall in the mental hospital population is related to the wider use of the ataractic drugs.

However, I have to disagree with Dr. Brill's cautious suggestion that the effects are pharmacological. Until otherwise proven, I prefer to believe that the population fall can be attributed more to the effect of the publicity about these drugs or the attitude of staff and communities.

This view draws some support from Dr. Epstein's paper, especially where he shows that the retention rates of the hospitals which used the drugs but little were approximately the same as in the high usage hospitals. It seems to me that both groups of California hospitals described by Dr. Epstein might have been in-

enced by the clamour and the advertising which accompanied the drugs.

I would like to mention some of the disadvantages in using hospital population changes to establish drug effectiveness. Despite an amazing similarity in hospitalization changes in all areas and, even though the drop always came with the increased use of drugs, it must be made clear that other factors are involved in mental hospital population change. To illustrate, I want to compare the rates in Saskatchewan with those of Ontario during a 25-year period. From 1932 to 1958, the resident rate per 100,000 doubled in Saskatchewan mental hospitals (277 to 512), whereas the rate in Ontario for this same period, remained almost constant (increasing only from 334 to 380). The political, social and economic factors made much more difference than did drugs.

Further evidence of the future changes that may take place in mental hospital statistics comes from such projects as the Worthing Experiment where the chronic patient load was kept at a minimum by home care and day patient treatment.

As another illustration of deliberately changing hospital statistics by planned policy I would like to describe a project in Saskatoon, a city of 100,000 people which sends its psy-

chotic patients to a 1200-bed mental hospital at North Battleford 100 miles distant. For several years, that hospital has contained about 275 Saskatoon residents and each year has admitted 125-150 acute psychotics from that city. For the past 6 months most of the patients, certified as mentally ill in Saskatoon, instead of going as formerly to North Battleford have been re-routed to a psychiatric ward in a general hospital right in the city of Saskatoon. Here they received intensive therapy and, with few exceptions, returned to their homes within 30 days; they are now being followed through a modified program of home care. It is too soon to report whether this policy is good or bad but that is not the point; enough to say that, at present, this program is radically changing the statistics of the hospitalization of psychotics from Saskatoon. This emphasizes the fact that there are many ways of looking after psychotics other than in chronic mental hospitals.

In conclusion: Whether one approves of the mental hospitals and whether we ultimately continue to have such institutions, the point is, we now have them and should learn from them. Studies such as those carried out by Drs. Brill and Epstein do much to increase our understanding of mental illness.