

# ADMISSIONS AND READMISSIONS TO THREE LONDON MENTAL HOSPITALS

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## INTRODUCTION

IN discussing current trends in mental hospital statistics, it is convenient to make a distinction between patients who have been resident for more than two years (the longstay group) and short or medium stay patients. The chances of discharge, once an individual has been resident for two years, are low and become progressively lower the longer he stays. In mental hospitals in England and Wales from 70 to 80 per cent. of patients are longstay; and the majority of these are diagnosed as schizophrenic (75 per cent. in 1954), although no more than one-third of newly admitted patients are given this diagnosis. There has been a consistent tendency over the past 30 years for a decreasing proportion of schizophrenic patients to be retained continuously for two years after admission—for example, about 60 per cent. of schizophrenics admitted in 1930 were retained in this way, compared with 30 per cent. in 1950 (Brown, 1960). Since then there have been important changes in social treatments and administrative policies, and the major tranquillizers have been introduced. The proportion of schizophrenics retained for two years or more has now approached 10 per cent. at many hospitals (Brown, 1959; Wing *et al.*, 1959). However, very little is known in numerical terms about the extent to which the patients have to be readmitted to hospital once they have been discharged. The only satisfactory studies of the readmission of schizophrenic patients were made before the introduction of the recent changes in discharge policy, and dealt with admission cohorts in which the proportion retained for two years ranged from 60 to 30 per cent. (e.g. Freyhan, 1958; Shepherd, 1957). Reduction within this range did not appear to lead to an increased risk of readmission. However, the possibility cannot be dismissed that a further reduction would lead to the discharge of patients with a special liability to relapse and readmission.

National statistics provide some indirect evidence on this point. Between 1951 and 1956 there was a 50 per cent. increase in the total number of admissions per year to hospitals in England and Wales. Different diagnostic groups contributed to this large increase in differing ways (G.R.O., 1953, 1955, 1958, 1960). For example, the large increase in the numbers of patients admitted for manic-depressive reactions had two more or less equal components—more patients were being admitted for the first time, *and* more patients were being readmitted. The figures for schizophrenia were quite different. There was little increase in the number of patients admitted for the first time (10 per cent.) but the number of previously admitted patients more than doubled between 1949 and 1956 (122 per cent.). It seems likely that the increasing number of schizophrenic readmissions

was due to progressively changing discharge policies and that a greater proportion of those discharged were being readmitted. The introduction of tranquillizing drugs in 1954–55 should be seen against the background of these long-term statistical trends.

A detailed large-scale study of these matters is difficult because of the problems of collecting and interpreting the data, while a small-scale study may not be representative of trends all over the country. We have therefore selected for study three 2,000-bed mental hospitals with adjoining catchment areas in Greater London which are known to have had markedly different admission rates and discharge policies, and which may represent different components in the national statistics. Banstead Hospital in 1956 had a total admission rate of 238 per 100,000 of the catchment area population over 15 years of age. The equivalent rates for Springfield and West Park Hospitals were 196 and 150. These rates are not age and sex specific, but they are sufficient to illustrate the large differences between hospitals. Discharge policies were equally varied, according to a number of different indices. For example, the proportion of all patients admitted in 1951 who remained in hospital for two years continuously was 20 per cent. at Banstead, 16 per cent. at Springfield and 30 per cent. at West Park. For patients admitted in 1956 the equivalent figures were 6 per cent., 12 per cent. and 17 per cent. Thus not only had the three hospitals reached different levels by 1956, according to this index, but they had been proceeding at different speeds towards them. A comparison of the extent to which patients admitted to these hospitals were subsequently readmitted after discharge might therefore be expected to throw light on the changes now taking place throughout the country. In addition, a comparison of the total hospital experience, during a given period of time, of patients admitted in 1951 with that of patients admitted in 1956 would indicate the way in which the increase in numbers of admissions, discharges and readmissions was affecting bed requirements.

We concentrated particularly on patients who were given a diagnosis of schizophrenia. All schizophrenic patients admitted to the three hospitals in 1951 and 1956 were followed up for three years in order to check on subsequent periods in hospital. In addition, a smaller follow-up study on the same lines was carried out for all other patients admitted to Springfield and West Park Hospitals in 1951 and 1956.

#### METHOD

Data were collected in three stages:

##### *1st Stage*

Information about age, sex, legal status, marital status, diagnosis, dates of key admission and discharge, previous admissions and address to which discharged were collected from G.R.O. admission cards. In the case of non-statutory patients, where cards were not completed, clinical records were consulted. Transfers from other mental hospitals were excluded. Classification of diagnoses followed that of Vera Norris (1959) with the exception that schizophrenic patients aged over 60 (6 per cent. of schizophrenic admissions) were included with senile conditions. Otherwise "schizophrenia" included paranoid psychosis, schizo-affective psychosis, paranoid state and paraphrenia.

##### *2nd Stage*

All case-notes and correspondence files of the 1,300 schizophrenic patients were studied in order to check on the accuracy of the information recorded on

the G.R.O. cards\*. Random samples of the clinical notes were also examined to check whether changes in diagnostic practices had taken place between 1951 and 1956.

### *3rd Stage*

Records of these three hospitals and eight other hospitals serving adjacent catchment areas in Greater London were systematically checked for any subsequent admissions of cohort patients in the three years following their admission. Five London hospitals without defined catchment areas and the five main observation wards were similarly checked (the latter by means of the central records of the L.C.C. Mental Health Department). Admissions to observation wards followed by transfer to mental hospitals were recorded as a single admission.

In this way it was possible to record for each patient:

1. The number of admissions to a mental hospital during the three years following admission in 1951 or 1956.
2. The time spent in hospital at each admission during the three-year period.

## RESULTS

### A. ADMISSIONS TO THE THREE HOSPITALS IN 1951 AND 1956

Four hundred and ninety-eight schizophrenic patients (41 per cent. first admissions and 59 per cent. previously admitted) entered hospital in 1951, and 802 (33 per cent. first admissions and 67 per cent. previously admitted) in 1956—an increase of 61 per cent. Admissions of patients with affective conditions rose from 458 to 892—an increase of 95 per cent. Admissions of patients with other diagnoses rose only by 36 per cent.—from 723 to 983.

As had been expected from national data, there was a disproportionate rise in the number of schizophrenic patients who had been previously admitted (84 per cent. compared with a rise of only 29 per cent. in first admissions). For affective conditions there was a marked increase both in first admissions (78 per cent.) and in admissions of patients who had been in hospital before (117 per cent.).

The distributions of age, sex and marital status were similar in the 1951 and 1956 cohorts, except that for affective disorders more male patients were admitted in 1956 than in 1951, and also more patients over the age of 60. A special check was made, on a one-in-three sample of case-notes, to see whether the increase in the number of admissions was associated with a marked change in type or severity of illness in the patients diagnosed as schizophrenic. There was no evidence that this was so.

### B. FOLLOW-UP OF SCHIZOPHRENIC PATIENTS

#### (i) *Readmissions During Follow-up Period*

Table I shows that there was a reduction in the numbers and proportions of schizophrenic patients remaining in hospital continuously for two years or more, both for first admissions and for previously admitted patients. Thirty-one

\* Eleven per cent. of cards in the 1951 cohort and 14 per cent. in 1956 received at least one correction as a result of this check. The majority concerned a change from "first" to "previously admitted" (8 per cent. and 10 per cent. in the two periods).

per cent. (139 patients) of all admissions for schizophrenia in 1951 were retained in this way compared with 13 per cent. (90 patients) in 1956.

TABLE I

*Numbers of Schizophrenic Patients Admitted to Banstead, Springfield and West Park Hospitals in 1951 and 1956. Numbers Discharged within 2 Years of Admission, and Numbers Subsequently Readmitted During Follow-up Period*

	(a) No. in Cohort	(b) Discharged Within 2 Years of Admission		(c) Readmitted During Follow-up Period	
		N	% of (a)	N	% of (b)
1951					
First admissions . . . . .	175	124	71	50	40
Previously admitted . . . . .	271	183	68	102	56
Total . . . . .	446	307	69	152	50
1956					
First admissions . . . . .	222	202	91	109	54
Previously admitted . . . . .	493	423	86	290	69
Total . . . . .	715	625	87	399	64

The proportion of patients discharged and subsequently readmitted during the follow-up period rose from 50 per cent. to 64 per cent.\* Eighty-eight patients of the 1951 cohort were discharged and subsequently readmitted on one occasion during the follow-up period; 64 were readmitted twice or more. The equivalent figures for the 1956 cohort of admissions were 177 and 222, an increase of 101 per cent. and 247 per cent. respectively. On the other hand, the numbers of patients discharged and not readmitted rose only by 47 per cent. (155 to 226 patients). These changes can be summarized by calculating the number of readmission events occurring during each follow-up period: there was a threefold increase, from 248 to 765.

When the results were broken down further, it became clear that these *trends* held true for each of the hospitals taken separately, although the actual figures differed considerably.

#### (ii) Length of Key Admission

While the numbers of schizophrenic patients admitted in 1956 rose by 61 per cent. compared with 1951, there was an increase of 104 per cent. in the number leaving during the three years following admission. By far the greater part of this increase was accounted for by the trebled number discharged within four months of key admission (158 and 475). Those leaving after four months' stay increased by only 11 per cent. (204 and 228). This was true of all three hospitals taken separately.

There was an increase of 8 per cent. in the total time spent in hospital by schizophrenic patients in the 1956 cohort during the 36 months after admission, when compared with patients admitted in 1951. Since the number of patients

\* In order to obtain a more accurate estimate of the proportion readmitted, the schizophrenic patients who left the London area on discharge from hospital (10 per cent. of each cohort)—one-third of them to Ireland, Scotland, or abroad—have been excluded from calculations concerning readmission. Their inclusion, however, does not affect the size of the differences between the two periods.

involved had increased, the average time spent in hospital decreased from 17.0 to 11.4 months out of 36 (47 per cent. to 32 per cent.).

(iii) *Number of Beds Occupied During Each Follow-up Period*

A simple enumeration was made of the number of schizophrenic patients admitted during 1951, who were actually in hospital on 1 January, 1953 and 1 January, 1954 (213 and 207), and similarly of those in the 1956 cohort who were resident on 1 January, 1958 and 1 January, 1959 (236 and 210). A further calculation was made to demonstrate that these figures closely approximated to the numbers of beds occupied on any given day during the second two years of the three-year follow-up period. There was very little fall-off in the bed-requirement during the two years, and very little difference between the needs of the 1951 and 1956 cohorts (just over 200 beds in each case). However, these beds were utilized in quite different ways. During 1953 and 1954, 126 beds (61 per cent.) were occupied by patients who had been in hospital continuously from the time of their admission in 1951. During 1958 and 1959, 150 beds (66 per cent.) were occupied by patients who had been admitted in 1956, discharged, and subsequently admitted again. Thus, approximately the same number of beds was made to serve a much larger number of patients by reducing the average time spent in hospital by each person and trebling the number of readmission events. This was also true at each of the three hospitals taken separately, though there was a slightly greater increase in bed-requirement at Springfield and West Park than at Banstead.

It is difficult to estimate the future fall-off in bed requirements for schizophrenic patients admitted in 1956—there was very little change between 1958 and 1959. The risk of readmission may decrease with time, and future treatments may be more effective. An increasing use of day centres may affect the position. On the other hand, there may be a tendency to retain a schizophrenic patient longer, the more often he is readmitted. There is some evidence for this in the present data. Patients in the 1956 cohort who were discharged, and subsequently readmitted and discharged once or twice during the three-year follow-up period, were selected for special study. At each of the three hospitals the first period of readmission was longer than the key stay, and the second period of readmission was longer than the first. Thus, 170 patients were readmitted and re-discharged once during the follow-up period. They stayed, on average, 18.5 weeks at the key admission, and 21.8 weeks when readmitted ( $t=2.35$ ,  $p<.02$ ). Another 179 patients were readmitted and discharged twice during the follow-up period. They stayed 11.5 weeks at the key admission, 13.1 weeks at the first readmission, and 19.4 weeks at the second readmission ( $F=11.59$ ,  $p<.001$ ). These increases were also significant at each of the three hospitals taken separately.

C. FOLLOW-UP OF ALL PATIENTS ADMITTED TO SPRINGFIELD AND WEST PARK IN 1951 AND 1956

Table II presents the data concerning diagnosis, death, discharge and readmission within a three-year follow-up period for all patients admitted to Springfield and West Park Hospitals in 1951 and 1956. The numbers staying continuously for two years show no change (220 and 216), although the diagnostic composition is somewhat different in the second period, there being fewer schizophrenic patients and more with affective disorders. The numbers of patients discharged and not readmitted rose somewhat (405 to 579, or 43 per

cent.), but there was a marked increase in the numbers discharged and re-admitted once (153 to 263, or 72 per cent.), and twice or more (105 to 299, or 185 per cent.). Patients with affective disorders and patients with schizophrenia contributed to this increase in readmissions in equal measure. Forty-four per cent. of patients with affective disorders who were admitted in 1956 were subsequently readmitted during the follow-up period. The equivalent figure for patients admitted in 1951 was 39 per cent. Thus the prognosis was not changed in this respect. Nor was there a marked change in total length of stay between 1951 and 1956 (9.6 months and 7.8 months). These results hold true both for first admissions and for previously admitted patients.

TABLE II  
*Three-year Prognosis of Patients Admitted to Springfield and West Park in 1951 and 1956 by Diagnosis*

	Discharged and not Readmitted Within 3-Year Period		Readmitted During 3-Year Follow-up Period				Over Two Years' Continuous Stay		Death Within 3-Year Follow-up Period		Total	
	1951	1956	Once		Twice or More		1951	1956	1951	1956	1951	1956
			1951	1956	1951	1956						
Schizophrenia .. ..	124	164	60	108	44	132	85	68	5	10	318	482
Affective conditions ..	134	261	53	101	34	104	28	46	12	8	261	520
Senility and organic disorders .. ..	67	75	19	19	7	20	93	96	135	182	321	392
Neurosis, etc. .. ..	80	79	21	35	20	43	14	6	4	2	139	165
Total .. ..	405	579	153	263	105	299	220	216	156	202	1,039	1,559

The average length of stay in hospital during the three years (including readmissions) decreased for all diagnoses from 13 months to 10 months. However, the total time spent in hospital increased by 18 per cent. because of the large increase in the number of patients. This was brought out more clearly by the enumeration of the number of beds occupied on given dates in the follow-up periods. One thousand and thirty-nine patients were admitted to the two hospitals in 1951: 325 of these were in-patients on 1 January, 1953, and 291 on 1 January, 1954. One thousand five hundred and fifty-nine patients were admitted in 1956: 418 of these were in-patients on 1 January, 1958 and 363 on 1 January, 1959. Thus there was an increase of about 25 per cent. in the bed-requirements of the 1956 cohort during 1957 and 1958, compared with the requirements of the 1951 cohort during 1952 and 1953. This was largely due to patients with diagnoses other than schizophrenia. Schizophrenic patients admitted to these two hospitals contributed only about 25 per cent. of the total increase in bed-requirements.

#### DISCUSSION AND CONCLUSIONS

1. First admissions for affective disorders showed a marked increase from 1951 to 1956, although first admissions for schizophrenia did not. On the other hand, previously admitted patients increased markedly in both diagnostic categories. A similar trend can be seen in the national data. Thus there does not seem to be any tendency to admit, on a large scale, a new kind of schizophrenic patient (this was confirmed by the case-note analysis), and increased readmissions have probably been largely due to the effects of changing discharge practice.

New patients with affective disorders were being admitted in 1956, but their prognosis, in terms of readmission during a three-year follow-up period,



did not seem to be any different from patients first admitted with the same diagnosis in 1951. Either they had milder illnesses which were just as liable to relapse as more severe conditions, or they had severe disorders which would previously have been treated without admission to hospital. There was no change for previously admitted cases either. The large increase in numbers of admissions with affective disorders in 1956 compared with 1951 seems likely, therefore, to have been due largely to the intake of new patients, and to a lesser extent to a change in discharge practice.

2. In general, there was a decreased average length of stay (including readmissions) during a three-year follow-up period for patients admitted in 1956 compared with a 1951 cohort. This could be seen for all diagnoses. The same *number* of patients remained in hospital for two years or more but there were fewer schizophrenics among them in the second period.

3. Because of the increase in the numbers of patients admitted, and in the number of occasions on which they were subsequently readmitted, the total time spent in hospital during the three-year follow-up period by patients in the 1956 cohort was substantially greater than for patients admitted in 1951. This was reflected in the fact that about 25 per cent. more beds were needed to serve the 1956 cohort, one to three years after admission, than for the 1951 cohort.

4. The decrease in length of stay was most marked for schizophrenic patients, for whom bed-needs did not rise. However, during the second follow-up period the beds were utilized mainly for readmitted patients rather than for patients remaining continuously in hospital. There was evidence that length of stay increased significantly with frequency of readmission.

5. These results provide a rough measure of the increase in the amount of work being carried out by the hospitals. Bed needs were only prevented from rising still further by the very large increase in the turnover of patients.

6. These conclusions hold good for 3 hospitals whose catchment areas are very different in social composition, and whose admission and discharge practices have in the past been very different from each other. The age, sex and diagnostic composition of their admission is similar to the national distribution. Although we cannot be sure how far the results can be generalized, it seems reasonable to assume that similar trends may have been occurring in other large conurbations and that they may hold true nationally.

We do not feel that it is justifiable to extrapolate these overall statistical trends in order to make an estimate of future bed needs at the three hospitals. It is not clear, at the moment, how far an increasing use of day-centres, or out-patient treatment (particularly with the newer major tranquillizers and anti-depressive drugs) will affect the picture. It is possible that a changed public attitude to mental hospitals—together with the abolition of over-crowding—may result in the attraction of new kinds of patients. Day centres also may deal to some extent with additional patients who previously would not have come under psychiatric care. It is too soon to say whether the present practice of frequent readmissions for schizophrenia will be continued, or whether there will be a strengthening of the already existing tendency to retain certain patients for longer periods, as they are readmitted more often. In making an estimate of future bed needs it is necessary, at every stage of the computation, to make decisions about what the current trends are, and which of them will continue in the future. In no case is a simple factual answer possible. Consistently cautious decisions would lead to a high estimate, consistently optimistic decisions to a low one. We do not think, therefore, that a statistical forecast based on our results would be very helpful in the present rapidly changing situation.

7. This study emphasizes the need to investigate the extent of the morbidity shown by patients with multiple admissions to hospital, during their periods in the community. It may be that there are advantages and disadvantages in decreasing the length of stay to a minimum, even if later readmission is inevitable. The data on which an adequate evaluation can be based have not yet been published. Studies which assess the extent of the need for day centres, hostels, and out-patient and domiciliary supervision, and which establish how many patients in various age and diagnostic categories can benefit, are also necessary before rational planning of the mental health services can be undertaken.

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