discharge from hospital. Some patients discharged themselves against medical advice; their subsequent history is not recorded, but it is clear that their early discharge could only spoil the effective prediction of long-stay cases—the group in which prediction was best. The possibility that short-stay cases might have been readmitted to hospital within 200 days of their entry into the survey was considered because it might be thought more appropriate to classify such cases among the intermediate group staying 100–199 days. There were, in fact, only four such cases, a number unlikely to alter results in any significant way. No knowledge has yet been gained of numbers readmitted later than 200 days from their entry into the survey, nor of patients' health after an interval of years: this may follow in time. The two notable advantages of considering duration of hospital stay are that it can be determined accurately in days, and that this provides a well-defined measure of an economic burden shouldered by the community.

Conclusions

It is hoped that future national statistics of mental ill-health will show length of hospital stay for groups of patients admitted in one particular year and followed for stated periods of time.

In England and Wales in 1953 the median length of hospital stay was approximately five months for schizophrenia, and six to eight weeks for manic-depressive, psychoneurotic, character, and behaviour disorders.

The length of hospital stay of 120 male schizophrenics at hospitals in and around Oxford was only slightly longer than national expectation when the group was considered as a whole.

But within the group significant variations in length of stay were found in association with occupation, age, somatotype, and diagnostic category. The factors associated with greater length of stay were student and professional occupations, youthfulness, a linear physique with little muscularity (type Lf) and non-paranoid forms of illness.

It is suggested that wider studies be made of the association between length of stay and the factors enumerated.

A prognostic scale based on the significant findings led to *post-hoc* prediction of short-stay cases that was 69% correct, and of long-stay cases 84% correct. The possible development of prognostic scales is discussed: confirmation, external validation, and, if possible, improvement are required before they can be accepted as satisfactory in practice.

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SOCIAL FACTORS INFLUENCING LENGTH OF HOSPITAL STAY OF SCHIZOPHRENIC PATIENTS

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Hospital statistics emphasize the importance to psychiatry of the chronic or long-stay patient. They show that, although the average length of stay of patients discharged in 1953 was only two months, 80% of the current population had remained continuously in hospital for at least two years (Registrar-General, 1953). A stay of this length is the most common definition of a chronic patient (Cross, 1954; Carstairs *et al.*, 1955; Drasgow, 1957). Chronic is here used to refer only to length of stay and not to a specific clinical condition. Approximately 70% of these chronic patients are diagnosed schizophrenia, and their average length of continuous residence is just over 12 years (Cross *et al.*, 1957; Registrar-General, 1958).

A mental patient's chances of discharge have in the past decreased rapidly after his second year in hospital. From national data of 1949 one can derive the approximate chances of discharge in this year for patients with varying lengths of stay (cf. tables M22 and M29, Registrar-General, 1953). In England and Wales these were 1 in 12 in the third year, 1 in 50 in the seventh year, and 1 in 200 after the twenty-fifth. That discharge rates are consistently low for schizophrenic patients after their second year of stay has been shown for both Britain and America (Danziger, 1946; Malzberg, 1952; Harris and Norris, 1955; Drasgow, 1957). The simplest explanation is that by the third year of stay only the more severely ill patients have been retained.

The present study, however, assumes that length of stay is not solely determined by severity of illness, but also by social factors and particularly by "social isolation." This was defined by absence of visits from relatives or friends during a patient's first two months in hospital. This index underestimates isolation since some long-stay patients were visited once or twice soon after admission and thereafter not at all.

Isolation may increase the likelihood of a patient's remaining in hospital, since there is no external pressure for his discharge. In addition, the attitude of the medical and nursing staff towards the discharge of such patients is likely to be more cautious.

To test these ideas, hospital admission cohorts previously employed in another study were first used (Wing *et al.*, 1959).^{*} These were schizophrenic patients admitted in 1950 and 1955 to Long Grove Hospital, an institution of 2,187 beds which serves a catchment area 25 miles away in London. The investigators showed that 37% (34% of men and 38% of women) remained continuously in hospital for two years after their admission in 1950. For 1955 admissions this figure was substantially reduced to 20% (17% of men and 26% of women). As this could not be explained by changes in age, marital status, or occupational level, the reduction was attributed partly to a change in discharge policy and partly to an improvement in treatment.

^{*}Small differences in numbers are due to the exclusion in this study of patients transferred from other mental hospitals and Broadmoor patients with sentences to serve at admission.

Before collecting the data on visits paid to the patient, the following two hypotheses were formed: (1) That patients admitted in 1950 who lacked visitors during their first two months in hospital were more likely than those who were visited to remain for two years. The second hypothesis was concerned with the reduction in numbers becoming chronic among 1955 admissions. If it is assumed that "isolated" patients were not more ill at admission, and that there had been a general change in attitude in the hospital towards discharge, it can be expected that more "isolated" patients would be discharged in 1955 as compared with 1950. The second hypothesis was therefore: (2) That for patients admitted in 1955 the relationship between lack of visitors and chronicity would be considerably reduced.

Method

Mental hospitals are under statutory obligation to note details of visits made to a patient. Records giving the relationship of visitors and dates of visits were available at the hospitals involved in this study. Nothing suggested that visits were not consistently recorded.

The number of visits made to a patient during his first two months in hospital were noted. The few patients who left within a fortnight and who received no visits were excluded, since, had they stayed longer, many might have been visited. Their number is noted at the foot of each table.

Patients readmitted within the same year have been included once only.

Results

Long Grove Hospital

Hypothesis 1.—Table I shows that in 1950 there was a positive relationship between lack of visits during the first two months in hospital and a continuous stay of two years ($\chi^2=34.55$, $P<0.001$): 83% of those not visited and only 25% of the visited became chronic. The first hypothesis was thus confirmed. Results for men and women were similar. Of the 30 isolated patients, 20 had either no known relatives or none living in the London area. The validity of the index of "social isolation" based on lack of visitors is here supported.

Hypothesis 2.—Table II shows that in 1955 there was no longer a significant relationship between isolation and chronicity. Of the unvisited 27% became chronic, compared with 18% of the visited. The second hypothesis was thus confirmed. Comparison of the figures for the two periods suggests that the change is largely due to the early discharge of non-visited patients in 1955.

Two further points are noteworthy. Comparing 1950 with 1955, the percentage becoming chronic dropped by half for men but only by a third for women. Since the percentage of women becoming chronic was still high, it was further predicted that in their case there would be less support for the second hypothesis. This proved to be so; there was still a positive, though reduced, relationship between isolation and chronicity for women ($\chi^2=7.33$, $P<0.01$), while for men the relationship had completely disappeared.

Secondly, in 1955 as compared with 1950 the total number of non-visited patients significantly increased for men but not for women. This might have introduced bias, but analysis failed to produce evidence for this. The increase had taken place primarily among

TABLE I.—1950 Admissions by Duration of Stay and Visits Within the First Two Months (Long Grove Hospital)

	Duration of Stay				Total	
	< 2 Years		> 2 Years			
	No.	%	No.	%	No.	%
No visits ..	5	17	25	83	30	100
Visits ..	88	75	30	25	118	100
Total ..	93	63	55	37	148	100

$$\chi^2=34.55; P<0.001; 1 \text{ d.f.}$$

Note:—Three patients with no visitors but remaining less than 14 days are not included. All had relatives in London.

TABLE II.—1955 Admissions by Duration of Stay and Visits Within the First Two Months (Long Grove Hospital)

	Duration of Stay				Total	
	< 2 Years		> 2 Years			
	No.	%	No.	%	No.	%
No visits ..	43	73	16	27	59	100
Visits ..	102	82	23	18	125	100
Total ..	145	79	39	21	184	100

$$\chi^2=1.87; P>0.1; 1 \text{ d.f.}$$

Note:—Nine patients have been excluded who had no visitors but who stayed less than 14 days. All had relatives in London.

readmitted unmarried male patients, for whom Wing *et al.* (1959) showed that, if anything, the risk of becoming chronic was greater.

Banstead Hospital

The same information was later collected for admissions to Banstead Hospital in 1950–1 and 1955. It is a similar hospital serving a catchment area 12 miles away in London.

Hypothesis 1.—Of the 326 schizophrenic patients admitted in 1950 and 1951, 30% became chronic. Table III shows that the first hypothesis was again confirmed, there being a significant relationship between isolation and chronicity ($\chi^2=21.04$, $P<0.001$).

Hypothesis 2.—In 1955 approximately double the number of schizophrenic patients were admitted than in either of the earlier years. Only 7% (5% of women, and 10% of men) became chronic. Table IV shows

TABLE III.—1950 and 1951 Admissions by Length of Stay and Visits Within the First Two Months (Banstead Hospital)

	Duration of Stay				Total	
	< 2 Years		> 2 Years			
	No.	%	No.	%	No.	%
No visits	37	46	43	54	80	100
Visits	182	74	64	26	246	100
Total	219	67	107	33	326	100

$$\chi^2=21.04; P<0.001; 1 \text{ d.f.}$$

Note:—Six patients have been excluded who had no visitors but who stayed less than 14 days. All had relatives in London.

TABLE IV.—1955 Admissions by Duration of Stay and Visits Within the First Two Months (Banstead Hospital)

	Duration of Stay				Total	
	< 2 Years		> 2 Years			
	No.	%	No.	%	No.	%
No visits ..	65	84	12	16	77	100
Visits	213	96	9	4	222	100
Total ..	278	93	21	7	299	100

$$\chi^2=11.63; P<0.001; 1 \text{ d.f.}$$

Note:—Five patients have been excluded who had no visitors but whose stay was less than 14 days. All had relatives in London.

that, although the percentage of isolated patients becoming chronic was much reduced (from 54 to 16%), there was still a significant though smaller relationship between lack of visitors and chronicity ($\chi^2=11.63$, $P<0.001$). The second hypothesis cannot thus be regarded as strongly confirmed. In contrast to the Long Grove Hospital figures, there had been a significant reduction in the percentage becoming chronic in both the visited and non-visited categories.

The difference between the two hospitals in rate of expansion of admissions prevents the direct comparison of their discharge figures in the latter period.

The effects of isolation appeared to continue beyond the second year. For example, at each hospital just over half of both visited and non-visited groups who became chronic after being admitted in 1950 were still in hospital eight years later. Secondly, at Banstead Hospital social isolation as defined in this study was found in 25% of recently admitted schizophrenic patients but in 50% of a random sample of the chronic schizophrenic population. Comparable data were not obtained for the other hospital.

Discussion

Of the schizophrenic patients admitted to two London mental hospitals in 1950-1, 35% were retained for at least two years in hospital. More of these patients lacked visitors during their first two months' stay than did those who left hospital within two years. This relationship between lack of visitors and duration of stay applied to both first admissions and readmissions, and to all age-groups.

For 1955 admissions one hospital (Long Grove) had reduced those becoming chronic to 21%, and the other (Banstead) to 7%. At Long Grove there was no longer a significant relationship between lack of visitors and chronicity: non-visited patients were being discharged earlier, but visited patients stayed much the same length of time as before. At Banstead the relationship between lack of visitors and chronicity was still significant, but was less marked than in 1950-1.

Members of Long Grove Hospital commented on changes in discharge policy since 1950, and the deputy physician-superintendent of Banstead Hospital has described their radical change of policy over the last few years (Baker, 1958).

The findings can be interpreted in at least two ways. Firstly, that there was a more conservative discharge policy in 1950, especially towards patients lacking relatives to supervise them. If it is assumed that isolated patients were no more ill at admission than the rest, then the change in policy described would be enough to explain the Long Grove results; but at Banstead the inference would have to be made that the change in policy had also influenced the discharge of visited patients in the latter period.

Secondly, it is possible that isolated patients have special clinical characteristics for which improved methods of treatment and the newly introduced drugs have had a particularly beneficial effect.

These two possible influences cannot be separated on the evidence presented; both have probably been at work. However, the specific predictions made in this study were supported; these results are sufficient to suggest that schizophrenic patients having no visitors early in their stay are particularly prone to become chronic cases when discharge policy is not positively

directed towards early discharge. Further, they suggest that social information would be useful for picking out potential chronic patients soon after admission so that particular attention could be given them.

This paper has been concerned with the fact of discharge, but this, of course, is not the only criterion of a patient's outcome. It appears to be the case for Long Grove Hospital that readmissions within two years of discharge in the latter period were not greater than for 1950 admissions (Wing *et al.*, 1959). Nevertheless, it is possible that the earlier discharge of patients may involve hardship for some relatives (Brown *et al.*, 1958; Brown, 1959). This last study did not give cause for pessimism about the post-hospital adjustment of schizophrenic patients. It did suggest that it may be necessary to intensify provision for aftercare to derive the full benefit of the new emphasis upon extra hospital treatment, as well as to avoid distress for many relatives.

Summary

Thirty-five per cent. of schizophrenic patients admitted to two London mental hospitals in 1950-1 were retained two years or more. There was a positive relationship between such retention and a lack of visitors in the first two months' stay in hospital.

For admissions five years later one hospital (Long Grove) had reduced those staying at least two years to 21%, and the other (Banstead) to 7%. In the former hospital the reduction in the percentage of admissions becoming chronic had largely taken place through the earlier discharge of non-visited patients. The reduction in the latter hospital was due to both categories of patient being discharged earlier.

The influence of social factors on the length of hospital stay of schizophrenic patients is discussed.

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"Quack psychiatry appears to be an accepted and respectable practice among lay social workers, quasi-legal officers, and others with no medical qualifications. A human being is a whole person. His mind may affect his conduct: on the other hand physical illness may affect the workings of the brain. To refer a man direct to a psychiatrist is quite wrong: the individual may still be under the care of his general practitioner for some illness which is the cause of his behaviour. In all cases he ought first to be assessed by his family doctor, who is aware of his previous medical history, before any suggestion of further reference to a mental specialist." (*Annual Report of the Medical Officer of Health for the Year 1958*. County Borough of Brighton.)