isolation policy essential. It is equally clear that such a policy must be one that will be applicable, with a minimum of expenditure on structural alterations, to the old-fashioned large wards in which we are destined to work for many years to come. Our earlier attempts to influence the sepsis rate by isolating in cubicles with controlled ventilation all carriers of tetracycline-resistant strains of *Staph. aureus* gave encouraging results (Williams *et al.*, 1962). They indicated, however, that many more than four cubicles would be needed for each 25-bedded ward, and that even with close and continuous bacteriological control it was very difficult to detect and isolate carriers of dangerous strains quickly enough to prevent the spread of infection.

The idea was attractive that, by segregating as a group those pre-operative patients not likely to harbour hospital staphylococci on admission, we might increase their chances of reaching the operating-theatre without acquiring a dangerous strain. It seemed possible that this could be done with a minimum of alteration of the ward, without greatly increasing the work of the nurses, and it could eventually be adopted without detailed bacteriological control.

Our aims were not realized. In the first place the proportion of pre-operative to post-operative patients fluctuated widely, and the allocation of a substantial minority of patients to the wrong side could not be avoided. Secondly, the movement of air and of airborne staphylococci between the two sides was considerable. Possibly because of the direction of the prevailing wind, the drift was more often from the post-operative to the pre-operative side than in the opposite direction. Another factor was the general direction of the movement of air throughout the hospital block, which was upwards in the stair-well and outwards through the wards on the upper floors (Lidwell, 1961), including the one in which our experiment was conducted. Since the post-operative side communicated directly with the stair-well through doors that were usually kept open, air from the rest of the hospital tended to drift through the post-operative into the pre-operative division. It is not surprising, therefore, that there were many staphylococci in the air that we were unable to ascribe to particular carriers in the ward.

On the credit side, nasal colonization with tetracycline-resistant staphylococci was more than twice as common in the post-operative division as in the pre-operative side, and no patient developed wound sepsis with a staphylococcus acquired in the pre-operative side before operation. These results might, however, have been less satisfactory if it had not been our policy to remove carriers of tetracycline-resistant staphylococci from the pre-operative side as soon as they were recognized. Before abandoning the divided ward as a means of reducing the acquisition of hospital staphylococcus by patients, we propose to investigate the effect of controlled ventilation of the existing pre-operative side.

Summary

A 10-months study has been made of a surgical ward divided by a simple partition into a pre-operative section and a post-operative section, with the intention of shielding patients from hospital staphylococci before operation.

Observations were made of air movements between the two sections, of the number of staphylococci in the air, of the rates of nasal colonization by staphylococci, and of sepsis rates.

It was found that because of fluctuations in the numbers it was difficult to allot patients to their correct section of the ward. Pre-operative isolation was only partial, possibly because there was considerable movement of airborne staphylococci between the two divisions of the ward. Nasal colonization, however, with tetracycline-resistant staphylococci was more than twice as common in the post-operative section as in the pre-operative section, and no patient developed wound sepsis with a staphylococcus acquired before operation.

We would like to thank the sister and nursing staff of the ward for their willing co-operation, and Dr. O. M. Lidwell for carrying out the gas-tracer experiment. We are indebted to the Medical Research Council and to the Treasurer and Governors of St. Bartholomew's Hospital for a grant in support of this work.

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DEVELOPMENT OF AN EARLY TREATMENT UNIT FROM AN OBSERVATION WARD

BY

D. R. BENADY, M.B., B.S., D.C.H., D.P.M.
*Formerly Senior House Officer**

JOHN DENHAM, M.D., D.P.M.
Consultant Psychiatrist

St. Clement's Hospital, London

The Mental Health Act of 1959 provides for all psychiatric hospitals to receive patients for a period of observation which has been increased from 17 to 28 days. This has changed the formal status of the observation wards situated mainly in the poorer municipal hospitals or Poor Law institutions of the great cities and of the few county mental hospitals which were recognized to receive patients under Section 20 and 21 of the Lunacy Act, 1890. In practice, however, the need for beds to receive the acutely disturbed patient continues and admissions to the emergency units have changed little, as is shown below.

This paper describes the influence of the Mental Health Act, 1959, on admission, management, and immediate outcome of psychiatric patients admitted to St. Clement's Hospital Emergency Unit in 1960–1 and compares them with those of 1955–6.

It also describes how psychiatric treatment has influenced the traditional role of the observation ward from diagnosis and disposal towards a short-stay treatment unit. Only when this traditional anomaly has been superseded by active treatment and discharge home will the emergency unit provide significant data for the placing of short-stay units in general hospitals and elsewhere.

Mapother (1929) recognized that only two-thirds of all patients required mental hospital care and treatment, while the present study shows that this proportion can be halved. Eilenberg *et al.* (1962) ably reviewed the history and the

*Now Registrar, Long Grove Hospital, Epsom, Surrey.

literature of the observation units, dividing them into social and clinical studies. The importance of physical illness associated with distressing mental symptoms was discussed by Norris (1959) and Steel (1960).

Description of the Unit

The emergency unit at St. Clement's Hospital consists of two adjacent wards of 12 beds each. It is administered as a single ward under one departmental sister with an equal number of female and male nurses. The medical staff consists of two senior house officers with little or no postgraduate experience in psychological medicine. They have additional duties in the neurosis unit of the same hospital. They are under the supervision of a senior registrar, who has his main duties in the neurosis unit.

Recent conversion into a small psychiatric hospital provides additional medical cover for nights and weekends. A consultant psychiatrist visits twice weekly. Facilities for undergraduate teaching are provided for the London Hospital Medical School. The unit has a full-time psychiatric social worker; a clinical psychologist and an occupational therapist are shared with the rest of the hospital. The nurse/patient ratio is 1 : 1.5.

Patients are admitted at the request of general practitioners, mental welfare officers, and psychiatrists direct from home, from general hospitals and clinics, or having presented themselves of their own accord. No patient is refused if a bed is available. Other medical and laboratory services are available at St. Andrew's Hospital, and, if needed, at the London Hospital.

Methodology

A cohort comprising all admissions to the emergency unit between November 1, 1960, and October 31, 1961 (the first year of the Mental Health Act, 1959), is analysed regarding legal status on admission and discharge, as well as diagnostic grouping, treatment, and outcome. This is compared with a cohort of all admissions to the same observation ward during the period November 1, 1955, to October 31, 1956. The operation of the Mental Health Act is analysed and the change from observation only to early treatment is scrutinized. An attempt to assess the value or futility of an observation ward (Norris, 1959) is undertaken by comparing outcome and disposal of cases admitted during the two periods under review.

Results

Effects of the Mental Health Act

Since November, 1960, informal admissions to the emergency unit have been accepted. During the year 1960–1 155 (44.5%) patients were admitted informally out of a total of 348. Table I compares the legal status on admission in the two years under review.

While in 1955–6 all admissions were compulsory, in 1960–1 this ratio dropped to 55%: significantly, the number of police admissions remained the same. Only one patient was admitted under a treatment order (Section 26) as a temporary measure until a vacancy in a psychiatric hospital could be found.

Before November 1, 1960, a three-day order could be extended by 14 days when the patient had to be transferred to a mental hospital under certificate or as a voluntary patient: the Mental Health Act, 1959, allows an urgency order under Section 29 or Section 136(2) to be converted into an observation order (Section 25). During the year 1960–1, of 164 patients admitted under an urgency order 69 had to be compelled to undergo further observation and treatment. Table II shows the changes of legal status within the unit.

TABLE I.—*Legal Status on Admission*

1955–6			1960–1		
Source	No.	%		No.	%
D.A.O. ..	443	93·7	Informal	155	44·5
			Section 29	135	39·0
			,, 25	28	8·0
			,, 26	1	0·2
Police ..	30	6·3	,, 136	29	8·3
	473	100		348	100

TABLE II

Mode of Admission	Total		Changed to Section 25		Changed to Section 26	
	M	F	M	F	M	F
Section 29	73	62	20	42	1	1
,, 25	14	14	—	—	—	1
,, 26	—	1	—	—	—	—
,, 136	23	6	5	2	—	—
Informal	85	70	4	—	—	3
Total ..	195	153	29	44	1	4
	348		73		5	

In 1955–6 122 patients were transferred to mental hospitals under certificate, while in 1960–1 only 54 needed compulsory transfer. The possibility of informal admission did not attract an extra flow of relapsed ex-patients to the emergency unit. The increase in readmissions (10%) followed the national rates (Table III).

TABLE III.—*Comparison of First Admissions With Readmissions*

	1955–6		1960–1	
	No.	%	No.	%
First admission ..	246	52·0	147	42·2
Readmission	227	48·0	201	57·8
Total ..	473	100	348	100

Effect of Treatment in the Emergency Unit

Early treatment increased the length of stay in the unit from an average of 18 days in 1955–6 to 23 days in 1960–1, and reduced the number of admissions from 473 to 348 in the respective periods. The proportion of patients discharged to their homes increased from 34% to 60%, with a proportionate decrease in transfer to psychiatric hospitals for further care and treatment.

Table IV shows the length of stay and outcome in the various diagnostic groups. Informal admissions were not significantly more liable to be discharged to their homes.

Table V compares the disposal of patients discharged in the two periods under review.

TABLE IV.—*Diagnostic Breakdown and Disposal of Patients, 1960–1*

Diagnosis	No.	Average Stay	Disposal		
			Mental Hospital	Home	Other
Schizophrenia	134	24·2	64	70	—
Affectives ..	72	22·6	19	52	1 Died
Neurotics ..	20	10·7	6	13	1 Other
Psychopaths	31	17·3	7	23	1 prison
Puerperals ..	9	21·4	2	7	—
Physical ..	17	17·3	7	6	4 others
Alcoholics ..	28	17·0	5	22	1 prison
Seniles ..	18	19·2	13	2	3 others
Epileptics ..	10	18·8	1	9	—
Others ..	9	23·7	3	4	2 others
Total ..	348	20·2	127	208	13

TABLE V.—*Disposal of Patients*

	1955–6		1960–1	
	No.	%	No.	%
Home ..	160	33·8	208	59·8
Mental hospitals ..	293	62·0	127	36·5
Other „ ..	16	3·4	10	2·8
Died	3	0·6	1	0·3
Police	1	0·2	2	0·6
Total	473	100	348	100

The results were further analysed in the two major diagnostic groups, affective disorders and schizophrenia, since there were no significant differences in the other groups.

Affective Disorders

Out of a total of 123 patients suffering from affective disorders 54 (44%) were discharged home in 1955–6, whereas in 1960–1 52 (73%) out of 72 returned direct to their homes (P=0.001).

The average stay in this group increased by only two days (Table VI), and in 1960–1 there was no significant difference in outcome or length of stay between patients treated for the first time and those treated previously. Only four patients required further treatment in a mental hospital under a compulsory order.

The treatment of choice for depression was imipramine and the monoamine oxidase inhibitors, which all patients received in varying dosage, sometimes in combination with E.C.T. A comparison of the two groups (Table VII) showed that those receiving E.C.T. and drugs in 1960–1 had a better chance of discharge home than those receiving E.C.T. only in 1955–6 (P=0.01).

TABLE VI.—*Analysis of Affective Patients*

Year	No.	Average Stay	Type of Admission			Discharged to		
			D.A.O.		Police	Mental Hospital		Home
						Vol.	Cert.	
1955–6	123	20·6	120		3	51	18	54
			Inf.	Sec. 29	Sec. 25	Inf.	Sec.	
1960–1	72	22·6	46	22	4	15	4	52

TABLE VII.—*Depressive Patients—Comparison of Cases Receiving E.C.T. Only in 1955–6 and E.C.T. and Drugs in 1960–1*

Year		No.	Discharged to	
			Home	Mental Hospital
1955–6	E.C.T. only	105	51 (49%)	58 (51%)
1960–1	„ and drugs	37	28 (75·6%)	9 (24·4%)

Schizophrenic Patients

The developments in psychopharmacology enabled the short-term treatment of schizophrenic patients in the emergency unit at the cost of increasing the length of stay by 9 days—that is, from 15 days in 1955–6 to 24 in 1960–1. A significantly larger proportion of patients were able to return to their homes: 36 (18.2%) out of 192 in 1955–6, against 70 (52%) out of 134 in 1960–1 (Table VIII).

TABLE VIII.—*Schizophrenic Patients—Admissions and Disposals*

Year	No.	Av. Stay	Type of Admission					Discharged to		
			D.A.O.			Police		Mental Hospital		Home
								Vol.	Cert.	
1955–6	192	15·2	179			13		76	80	36
			Inf.	Sec. 136	Sec. 29	Sec. 25	Sec. 26	Inf.	Sec.	
1960–1	134	24·2	39	15	60	19	1	23	41	70

A comparison of those cases receiving E.C.T. alone in 1955–6 (15.6%) and E.C.T. and drugs in 1960–1 (17%) (Table XI) showed that the latter had a better chance of discharge home (P=0.01).

TABLE IX.—*Schizophrenic Patients. Comparison of Outcome of Cases Receiving E.C.T. Only in* 1955–6 *and E.C.T. and Drugs in* 1960 1

Year		No.	Discharged to	
			Home	Mental Hospital
1955–6	E.C.T. only	30	7 (23·3%)	23 (76·7%)
1960–1	„ and drugs	24	18 (75%)	6 (25%)

Physical Illness

The incidence of physical illness contributing to psychiatric disturbance remained the same in the two periods, at the low level of 6% and 8% respectively of all admissions. There were only two cases of luetic mental illnesses found in 1961, as opposed to the higher incidence in Steel's (1960) findings.

There was no change in the number or diagnostic categories of police admissions.

Discussion

While the Mental Health Act of 1959 affected mainly the legal status of the patients admitted to the emergency unit and so opened the door to urgent admissions who were able and willing to accept treatment informally, the change of policy from observation ward to early treatment unit had a more direct effect on the management and fate of the patients.

No longer was the period of stay devoted only to making a tentative diagnosis and to sedate the patients until a mental hospital could be found. The time was more usefully employed in finding out how far energetic treatment could shorten the illness, avoid transfer to a psychiatric hospital, or at least shorten the stay there. The proportion of patients discharged home has doubled, and has increased further since this study was undertaken. In a number of cases transferred to the area mental hospital the reason was for extended rehabilitation and resettlement rather than treatment. This change of policy put extra strain on ancillary services, mainly the social-work agencies whose help was required in resettlement within a matter of two to three weeks of admission. The effect on families and their relationships to the patients were wholly beneficial. They were able to visit daily, and were seen repeatedly by a doctor, a psychiatric social worker, or a nurse. The opportunity to develop attitudes of rejection were avoided by the close contact of staff, relatives, and patients, and by the demonstrable effect of rapid improvement in mental state.

More difficult cases attended the unit as day-patients after discharge home, while some patients were followed up in the unit. Excessive and violent behaviour was rapidly brought under control, and thus the unit lost its reputation for noise and disturbance.

On the debit side is the increased length of stay and the decreased number of patients dealt with in the unit. It is, however, claimed that the concomitant increase in cost per case of between 20 and 25% is far outweighed by the saving in time and cost resulting from direct discharge

to their homes of an additional 60 patients. It has reduced the number of beds available to mental welfare officers for urgent admissions and has increased the need for new facilities in the community.

The results of a small emergency unit devoted to early treatment has considerable interest and importance at this stage of hospital planning. The larger units like Oldham and Bolton are well known. More recently Cohen and Haldane (1962) and Dunkley and Lewis (1963) described the needs of such units. A psychiatric unit of 24 beds for the reception and treatment of acute and disturbed psychiatric patients is described here. It is able to deal effectively with at least two-thirds of the cases without limitations regarding diagnostic categories or age of patients, with a minimum of noise and disturbance to its immediate environment, and without the necessity of the rehabilitation facilities of a modern mental hospital. A similar unit could function within the walls of any general hospital and provide there the much needed psychiatric services of the community. It has been held that small psychiatric units of 30 beds or less can deal with only one type of psychiatric disorder, which view has been disproved by the above results (see Table IV). No direct conclusions can be drawn from this paper about the optimal size and staffing of acute psychiatric units other than the indication that increase beyond 30 beds would diminish the close contact between patients, their families, and staff—which we regard as of paramount importance for success.

Some psychiatrists would regard the absence of medium- and long-stay beds as detrimental to any psychiatric unit established in a general hospital. While we agree that a divorce of psychiatric services into acute and chronic should be avoided rather by combined staffing than by geographical proximity, we advance the view tentatively that rapid treatment will prevent most of the need for chronic beds as well as forestall the rejection of the psychiatric patient by his community. For this the community care provided by an enlightened local authority will be most essential. For this unit the excellent help of the London County Council can be relied upon: it provides individual aftercare, group meetings, social clubs. day centres, and occupation centres.

Summary

The effect of the Mental Health Act, 1959, on the admissions and management in an observation ward are described, comparing two cohorts comprising all admissions in 1955–6 with those in 1960–1. Informal admissions accounted for 45% of all cases in 1960–1 against none in 1955–6.

The change of policy from traditional observation ward to early treatment unit resulted in an average longer stay by five days, and reduction in numbers dealt with. The proportion of patients discharged direct to their homes has doubled. The relevance of the results of this unit for the planning of psychiatric units in general hospitals and community services is outlined.

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FAECAL OCCULT BLOOD AND FERROUS FUMARATE

BY

L. H. BLUMGART, M.B., Ch.B., B.D.S. **D. J. BOWEN**

University Department of Surgery, Royal Infirmary, Sheffield

Chronic loss of blood is the most frequent cause of iron-deficiency anaemia, and the site of bleeding is commonly located in the gastro-intestinal tract. Consequently it is important to have a simple and reliable test for the determination of occult blood in the faeces. The difficulties and fallacies in the interpretation of the chemical tests in common use have been reviewed recently by Kay (1962) and the comment made, based on reports by Illingworth (1959) and Holliday and Cuthill (1960), that ferrous fumarate medication might interfere with the tests for occult blood in the faeces. The possibility that ferrous fumarate might cause actual bleeding seemed unlikely in the light of the experimental work of Berenbaum *et al.* (1960). The claim of Illingworth made it seem unwise to prescribe ferrous fumarate for any patient where the stool might later be examined for the presence of occult blood. These criticisms of ferrous fumarate have put a considerable restraint on its use, and it seemed to us important to re-examine this problem, particularly since ferrous fumarate has been shown to be valuable in the treatment of iron-deficiency anaemia and remarkably free from toxic and side-effects (Swan and Jowett, 1959).

We will show firstly that in the patients tested ferrous fumarate given by mouth did not cause intestinal bleeding, nor did it interfere with the interpretation of the orthotolidine test for occult blood; secondly, the "hematest" and "occultest" methods, although themselves based on the orthotolidine method, gave unreliable results, whereas the orthotolidine test proved to be an accurate and sensitive method of detecting faecal occult blood loss; finally, our results emphasize the need for careful preparation of the patient before performing any test for occult alimentary bleeding.

Materials and Methods

Selection of Patients.—In an attempt to eliminate positive faecal occult blood results due to factors other than the oral administration of ferrous fumarate, patients were selected according to the following strict criteria. All were without a history of gastro-intestinal disease and in all cases proctoscopic examination excluded the presence of haemorrhoids. An oral examination was made to exclude gingivitis or any periodontal condition likely to cause bleeding, and brushing of the teeth was prohibited during the period of study. A careful drug history was taken to exclude, in particular, the taking of aspirin or salicylates, as these have been shown to cause intestinal bleeding (Grossman *et al.*, 1961). All patients were given a meat-free diet and faecal collections were made during the stay in hospital; it was considered that collections made after the patient had returned home would provide unreliable information as the diet could not be strictly controlled.