practitioners have been accustomed to the use of beds in cottage hospitals there is evidence that this facility is highly prized and that its removal would be strenuously resisted.⁴ The growth of vocational training schemes for general practice and the increasing spread of group practices and health centres will increase the demand for inpatient facilities, and to the doctor practising from a health centre with x-ray and physiotherapy equipment and with access to a hospital laboratory, a hospital bed will become a natural additional extension of the care which he can give to his patient. In Livingston, where all practitioners work from health centres and are continuing their contact with hospital, this demand has been concentrated and accelerated in relation to the rest of the general practitioners in the hospital area.

The nursing staff of the ward have proved to be both adaptable and helpful and have found little difficulty in dealing with practitioners who visit patients at varying times throughout the day. Nurses in this type of unit have increased responsibilities, but these have added to the satisfaction of their work and they have stated that they learn more about their patients, their domestic situation, and their future progress than they do when working in other hospital departments. Without question, we have found that the ability to look after our patients in hospital has added a much valued dimension to our work. With the

entry into practice of doctors more versed in the practice of hospital medicine, more will wish to apply the skills learnt during training and will find it frustrating to have to practise without the facilities to use this knowledge.

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Establishment and Use of a General Practitioner Medical Unit in a District General Hospital

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Summary

An analysis of the establishment and running of a general-practitioner medical unit in a district general hospital has shown that it fulfills a useful and positive role in the area health services and is well used. It shows that selectivity of admission can and does work and that the theoretical drawbacks to such a unit did not materialize in practice during the study.

Introduction

At this time of change in the organization of the National Health Service and in view of the emphasis on integration it seems important to consider all the ways in which general practitioners can work in hospital to provide the best service for patients in terms of quality of care and total National Health Service economics. One of the ways in which practitioners can work in hospital is outlined in this paper.

Objective and Organization

The objective was to set up a unit in the district hospital to which doctors in the area could admit patients solely under their own care and treat them with the support of the hospital's diagnostic and therapeutic facilities. This arrangement would simplify consultation between practitioners and consultants and enable the unit to take part in the postgraduate teaching arrangements in the district hospital. It seemed im-

portant that general practitioners be encouraged and given the opportunity to participate in postgraduate teaching.

ESTABLISHMENT OF UNIT

The unit was opened in November 1970 after two years of negotiation with the hospital staff, the hospital authorities, the local medical committee, and practitioners. It was possible to establish the unit without additional finance by redeployment of existing beds. Associated with the district hospital (Bangour General Hospital) are four peripheral units varying from 25 to 78 beds, formerly fever hospitals. These hospitals contained mainly long-stay geriatric patients, but also scattered throughout the four hospitals were 33 general-practitioner beds. These beds were used virtually as long-stay geriatric beds and not for short-stay, acute medicine, partly because of geography, partly because of inadequacy of supporting resources. It was agreed that the 33 beds in the peripheral hospitals be exchanged for an 18-bedded unit in the district hospital—eight male and 10 female beds sited in the same ward but separated by the bathrooms and dayroom. It was finally accepted that 18 "viable" beds would be of greater use than 33 "blocked" beds.

ADMINISTRATION

The board of management agreed that the day-to-day administration of the unit should be undertaken by the medical superintendent. (In Scotland the medical superintendent is a wholetime medical administrator based at hospital level and with no clinical duties.) A small management committee comprising the medical superintendent, the principal nursing officer, and three general-practitioner users was also established.

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It was agreed at a meeting of general practitioners in the area that a set of rules be drawn up and followed. These included a maximum stay of 28 days, that users should be in contract with the board, that contracts be renewable yearly, that the unit be available to all practitioners in the area, and that existing hospital documentation be used, augmented by a special discharge form—one copy for the practitioners' own records and one for the hospital records. An admission form was devised to be sent in with the patient to enable the sister to initiate treatment or diagnostic procedures before the doctor arrived. All patients must be seen by their own doctor within 18 hours of admission and practices must provide all medical cover, including emergencies. Junior medical staff are not used. The only exception is a life-and-death emergency, when the duty medical team in the hospital take appropriate action.

USE OF THE BEDS

A grant was made to me to undertake a 12-month study to try to measure the use of the unit and the extent to which the objectives for which the unit was created were met. A comprehensive form was completed for each patient and the data are analysed below.

Results

The following are some of the findings which emerged from 1 February 1971 to 31 January 1972. Altogether 284 patients (38% male, 62% female) aged from 12 to 97 years were admitted to the 18 beds. The distribution by age at admission is shown in Table I. Nearly half of all the patients admitted were under 55 years of age. Seventy-nine per cent. were admitted between 08.00 hours and 16.00 hours, and 12.7% between 16.00 hours and 20.00 hours.

TABLE I—Age Distribution of the 284 Patients Admitted to the Unit

Age on Admission (Years)	Total Patients		Cumulative %
	No.	%	
Under 25	18	6.3	6.3
25-29	17	6.0	12.3
30-34	21	7.3	19.7
35-39	25	8.8	28.5
40-44	14	5.0	33.5
45-49	18	6.3	39.8
50-54	21	7.3	47.1
55-59	27	9.5	56.7
60-64	20	7.0	63.7
65 and over	103	36.0	100.0

Altogether 91% were discharged within the agreed period of 28 days (Table II). The 26 patients who overstayed the maximum time did so for special reasons, medical or social. For example, patients admitted for terminal care could not be discharged in extremis.

TABLE II—Duration of Stay in Unit

Length of Stay (Days)	Total Patients (n = 284)		Cumulative %
	No.	%	
<1	1	0.3	0.3
1-6	104	36.6	36.9
7-13	80	28.2	65.1
14-20	45	16.0	80.9
21-28	28	10.0	91.0
>28	26	9.0	100.0

The disposal of patients admitted to the unit is shown in Table III. The fatality rate of 7.4% was not unexpected (medical division rate 12.5%), and the 6% who were transferred to other units within the district hospital is an interesting finding. The fact that 83.5% of the patients were treated

TABLE III—Disposal of the 284 Patients

	No. of patients
Home	327 (83.5%)
Geriatric ward	1 (0.3%)
Bangour general hospital	17 (6.0%)
Other hospitals	1 (0.3%)
Mental hospital	4 (1.4%)
Local health authority	3 (1.0%)
Evening home	0
Died	21 (7.4%)

successfully and discharged home seems very encouraging. Among the 21 fatal cases four necropsies were performed.

Acute illness, investigations, and exacerbation of chronic illness accounted for 73% of the admissions (Table IV). It is interesting to note that "age and infirmity" was never the reason for admission. Acute illness included such conditions as pneumonia, coronary thrombosis in older patients, peptic ulcer, and psychiatric illness. Conditions investigated included anaemia, indigestion, and neurological problems and involved such procedures as lumbar puncture and sternal puncture. It seems reasonable to claim from Table IV that the use made of the unit was good by any standards. Further analysis of the social reasons for admission showed that 91% were admitted for reasons with no social factor. Social reasons for admission were all related to lack of facilities for home care. In none of the cases was overcrowding or poor housing given as reason for admission.

TABLE IV—Reasons for Admissions among the 284 Patients

	No. of Patients
Acute illness	101 (36.0%)
Acute illness with complications	7 (2.4%)
Exacerbation of chronic illness	21 (7.3%)
Exacerbation of chronic illness with complications	5 (1.7%)
Social	11 (3.8%)
Investigation	89 (31.3%)
Chronic illness	13 (4.5%)
Age and infirmity	0
"Holiday" care	14 (5.0%)
Nursing	4 (1.4%)
Other	19 (7.7%)

Only 1.7% of the patients were admitted for nursing procedures only (Table V). It is interesting to note that physiotherapy and dietetic treatment featured in a large number of cases—64 and 38 respectively. The categories in Table V are not mutually exclusive and some patients received several of these treatments. All patients obviously received basic care.

TABLE V—Treatment Given

	No. of Patients
Nursing procedure only	5 (1.7%)
Oral drugs	224 (78.9%)
Parenteral drugs	88 (31.0%)
Transfusion	6 (2.0%)
Physiotherapy	64 (22.5%)
Dietetic (including diabetic stabilization and obesity)	38 (13.0%)
Social work	3 (1.0%)
Other	10 (3.5%)

The diagnostic tests and investigations carried out are shown in Table VI. Positive and negative findings can be equally important in deciding on treatment. Eighty-one per cent. of the patients admitted were treated solely by their own doctor, and 14% were seen once and 5% twice by a consultant at the general practitioner's request.

TABLE VI—Diagnostic Tests and Investigations carried out, Expressed as Percentages

	None	One	Two or More	Positive	Negative
E.C.G.	82.0	14.9	3.1	27	73
Haematology	27.0	56.0	17.0		
Bacteriology	39.4	27.5	33.1		
Biochemistry	37.0	27.8	27.8		
Biopsy		1.4			
Radiology	41.6	36.0	23.0	27	73
Contrast radiology	91.0	5.4	3.0		

Discussion

A divisional system of clinical organization operates in Bangour Hospital as recommended in the Brotherston¹ and Cogwheel² reports. One of the special features of this organization³ is a division of community medicine which comprises hospital medical administrators, two medical officers of health, and eight general practitioners elected by all the practitioners in the area. This division provides a particularly effective platform from which to launch ventures like the general-practitioner unit and also to integrate closely the hospital and community medical effort.

Another special feature of the area is the Livingston integrated health services experimental project⁴ in which each doctor is a general practitioner/specialist with a list limited to 1,500 and a five-session appointment as a medical assistant in Bangour Hospital.

It is noteworthy that Livingston doctors used the unit considerably more than other doctors in the area. The eight Livingston doctors out of 24 doctors who used the unit admitted 130 (46.5%) of the 284 cases. It can be assumed that this is a result partly of the practitioner's specialist training and partly because he is in the hospital frequently and regularly. There may also be other motivations, such as proximity of the practice to the hospital, but whatever the reasons this type of appointment clearly results in greater use of the unit by these practitioners and consequently reduces the demands on consultant services.

When the proposal to establish the unit was under consideration some of the hospital staff opposed the idea on the grounds that the unit would quickly become "another long-stay unit," that it would make demands on the back-up

facilities to the detriment of the rest of the hospital, and that practitioners would not provide full care for their patients but that hospital staff would be left to deal with emergencies and other problems. None of these forebodings in fact emerged.

Patients were all regularly and conscientiously visited—64% were visited five times or more by their doctor while in the unit. The unit has been incorporated in the hospital's postgraduate teaching programme and practitioners have presented cases in teaching ward rounds. There is great potential for further development of this aspect of the unit's activity.

The nursing staff have found work in the unit stimulating and rewarding and have not found difficulties in working with a large number of doctors and their patients.

This study shows the practicability and desirability of such a unit in a district general hospital.

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Contemporary Themes

Cardiovascular Disease in the Tropics*—IV, Coronary Heart Disease

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British Medical Journal, 1972, 4, 32-35

For the purpose of this presentation I would like to outline briefly the "nutritional-metabolic" theory of atherogenesis,⁵⁷ which has received considerable support from the epidemiological studies of Ancel Keys and his collaborators.⁵⁸ I will then examine how certain situations in the tropical environment appear to challenge this major hypothesis and will discuss other contributions which the tropical situation makes to the world-wide problem of coronary heart disease.

Nutritional-Metabolic Theory

A very personal view of the nutritional-metabolic theory is shown in Fig. 1. There are two major indices of a community's

* Conclusion of the Milroy lectures delivered at the Royal College of Physicians of London on 9 March 1972.

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susceptibility to coronary heart disease. (1) Epidemiological studies have clearly and repeatedly shown that populations with a high mortality from coronary heart disease have relatively high

FIG. 1—Illustration of the nutritional-metabolic concept of community susceptibility and incidence of coronary heart disease.