Acute admissions to medical beds

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RECENTLY, the relationship between inpatient care, care in the community, and the possible contribution general practitioners might make to the care of their own patients in hospital have been subjects of increasing study (Oxford Regional Hospital Board, 1969; Royal College of General Practitioners, 1971; Israel and Draper, 1971).

Much of this interest stems from an appreciation of the need to unify medical effort and make the most effective use of limited resources, while recent developments in general practice itself have provided a further stimulus. So far, published studies have been concerned with earlier discharge from hospital (College of General Practitioners, 1966; Ruckley *et al.*, 1971; Hockey and Buttimore, 1970) as well as with the period in hospital (Hockey, 1966), while individual general practitioners have reported their experiences at the admission phase of hospital care (Crombie and Cross, 1959; Fry, 1959; Evans and McBride, 1968; McGregor, 1964). Loudon (1970) studied acute admissions as a general practitioner working in hospital.

Most of these studies have originated from those working outside hospital, and comparatively few studies have been reported from hospital doctors although Patel (1971) has recently published observations on modes of admission to hospital. This report is concerned with emergency admissions to acute medical beds and is based on the professional opinions of both general practitioners and hospital doctors.

It has long been recognised that a significant proportion of patients requiring inpatient care could be cared for perfectly well by their general practitioners except where home circumstances or the nursing or other requirements make such an arrangement unsuitable or unsafe (Scottish Home and Health Department, 1971). "It does not require much clinical expertise to know and prove that a patient is suffering from pneumonia. The more important diagnostic point is to uncover the reason that made it necessary to give the course of antibiotics in hospital rather than at home" (Kemp, 1969).

In how many admissions do general practitioners assess as unnecessary the consultant skills and special resources of teaching hospitals? How do the hospital team view these same admissions? Might some admissions have been dealt with in other ways, such as strengthening domiciliary nursing, home help, or other social services, or possibly by admission to a general practitioner unit?

In an attempt to answer these questions it was decided to study admissions to acute

medical beds, this being a major (though not the only) way in which general practitioners use hospital inpatient facilities.

Method

A prospective survey was planned to last for three months, this period being short enough to maintain the momentum necessary for a multi-observer survey and yet long enough to provide an appropriate number of admissions without complications through too many re-admissions.

Fifty-four general practitioners, i.e. approximately half of all general practitioners in the Dundee area, were recruited on a voluntary basis and they submitted independent assessments on all the patients they referred for admission from Dundee and the immediate area. Practitioners were asked to include all patients for whom they sought emergency admission (defined as admission the same day) to a medical bed in the Dundee Royal Infirmary, Maryfield Hospital (the general teaching hospitals) and King's Cross Hospital (the communicable diseases hospital). Paediatric and infectious diseases were included, but the following were excluded:

(a) waiting list patients—(significant participation by the geriatric service was thereby excluded).

(b) specific referrals to mental hospitals.

(c) patients who were receiving general continuing care from the hospital, i.e. congenital abnormalities, renal failure—unless the general practitioner intervened or a new episode occurred.

In addition to basic information about the patient, participating practitioners recorded those factors they assessed as being relevant to each admission, under four headings:

(1) Medical needs

(2) Nursing needs

(3) Social needs and pressures

(4) Practice pressures.

The last heading was included because of the possibility of an influenza epidemic—the survey was deliberately mounted during the busiest part of the year. However, during the survey no major epidemics were encountered, though there were minor waves of pertussis and diarrhoeal diseases.

The various classifications had been selected in the light of prior experience and confirmed by a pilot survey in the autumn of 1970 (Appendix 1).

Practitioners were invited:

(1) to assess and record factors relevant to the circumstances of the admission

(2) to select the most important factors influencing admission

(3) to indicate whether consultant help was required

(4) to indicate whether alternative care might have been provided at home or possibly in a general practitioner unit

(5) to state the principal diagnosis or diagnoses.

During the same period all patients admitted to acute medical and paediatric beds were assessed by hospital medical colleagues participating in a similar but independent exercise.

The completed forms were transmitted to the Department of General Practice where

the checking, validating, sorting and coding of the information was co-ordinated. The data was punched on 80 column punch cards and processed by the regional hospital board computer department.

Results

Information was obtained from 1,684 admissions, and figure 1 shows that about one in three patients admitted to a medical bed may be admitted without immediate and direct involvement of their general practitioners. Such patients may be self-referrals or they may come from works doctors, nurses, ambulances, or from other hospital out-patient departments. Although it has many interesting features this group is not considered further here.

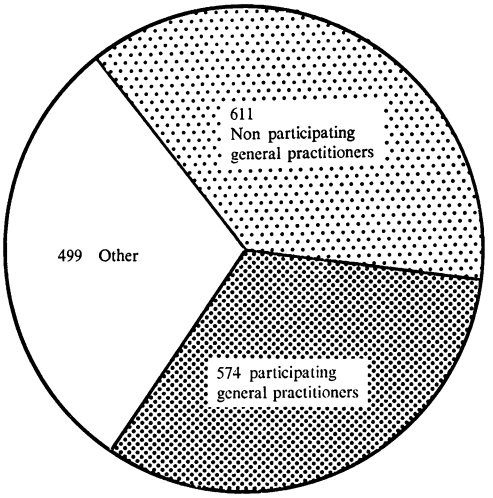

Figure 1

1,684 admissions—source of referral

Those admissions referred directly from general practitioners fall into two main groups: those from participating general practitioners on each of whose admissions two linked assessments are available, and those from non-participating general practitioners on each of whose admissions only one assessment—from the hospital—is available. The group of 574 linked assessments forms the basis of most of this paper, but in one case not enough information was given by the hospital, and 573 admissions have been analysed.

In rather less than half of these admissions (258) the participating practitioners felt the needs warranted not only admission to hospital but also consultant help. Conversely, in 315 admissions (figure 2) medical expertise beyond that of the general practitioner was considered unnecessary.

The hospital thought that consultant help was not required in 206 out of these 573 admissions. These two views concerning the level of patient care did not entirely coincide, thereby giving rise to four groups of linked assessments.

Group A

This is the traditional, or 'real' hospital admission where both general practitioner and hospital agreed that a hospital bed and consultant care were needed. (189 admissions, about 1 in 3).

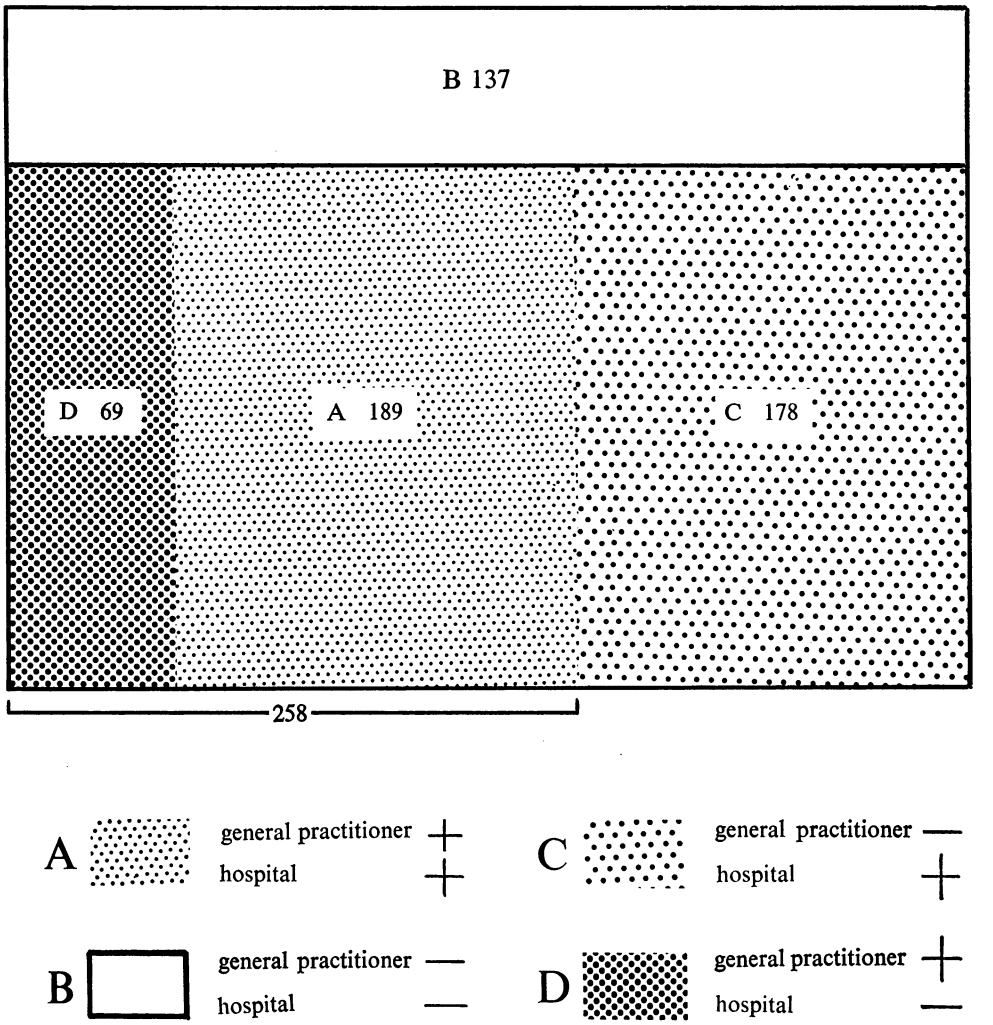

Figure 2

General practitioner and hospital assessment of need for consultant care
573 admissions

Example 1: Mr T.H. 49 years

General practitioner assessment (own doctor): ?Myocardial infarction admitted because diagnosis in doubt, no other factors recorded. Requires medical expertise beyond primary care, would not be suitable for domiciliary care nor for admission to general practitioner unit.

Hospital assessment: Myocardial infarction admitted because of severity of illness and need for specialised nursing. Would require a hospital bed with consultant care (information from registrar).

Group B

This is a group where both general practitioner and hospital agreed that consultant care was unnecessary. (137 admissions, about 1 in 4).

Example 2: Mrs E.P. 82 years

General practitioner assessment (own doctor): Cerebrovascular accident, admitted because nobody available for everyday needs (police had to force entry), and requires basic nursing. Does not require

medical expertise beyond primary care, might have been cared for at home with strengthened nursing and social services, and is suitable for admission to general practitioner unit.

Hospital assessment: Cerebrovascular accident admitted because nobody available for everyday needs; no other factors recorded. Could have been cared for in a hospital bed without consultant care (information from senior house officer).

Group C

The general practitioner did not feel the need for consultant opinion, while the hospital assessed the patient's needs as requiring consultant care. (178 admissions, about 1 in 3).

Example 3: Mr James S. 82 years

General practitioner assessment (own doctor): Left ventricular failure and mitral stenosis (this last for many years). Two attacks of bacterial endocarditis. Admitted because of severity of illness with medical complication developing and failure to respond adequately. Elderly relative now unable to give adequate care. Suitable for general practitioner unit but not for domiciliary care. Does not require medical expertise beyond primary care.

Hospital assessment: Left ventricular failure and mitral valve disease. Admitted because of severity of illness and needs continuous basic nursing. General practitioner and home care adequate in the past but the situation has deteriorated. Requires hospital bed with consultant care (registrar).

Group D

The general practitioner felt the need for consultant opinion, but the hospital felt that the *patient's* needs might be met in other ways. (69 admissions, about 1 in 9).

Because of the small numbers, this sub-group will be considered separately later.

Example 4: Mr Albert M. 66 years

General practitioner assessment (own doctor): Cardiac asthma, angina pectoris. Admitted for severity of illness, diagnosis in doubt and failure to respond with increasing dyspnoea. Needs technical nursing. Suitable for a general practitioner unit but requiring consultant opinion.

Hospital assessment: Left ventricular failure. Admitted for severity of illness but could have been looked after at home under family doctor care (registrar).

There is a breakdown in communications here as the patient appeared to come via casualty without his doctor's letter.

The salient demographic characteristics of these groups are set out in table I.

TABLE I

PERCENTAGE DISTRIBUTION BY AGE OF 573 ADMISSIONS IN THREE SUB-GROUPS

	Overall	*Agreement on consultant care*		*Disagreement on level of care*
		A	*B*	*C*
Number	573	189	137	178
Male/Female	0·99	1·22	0·71	0·91
Age (years)				
Under 20	30	29	32	31
20–69	39	57	17	33
Over 70	31	14	51	36

The admitting general practitioner was usually the patient's own family doctor, and although many of the illnesses were in the early stage of evolution there was good correlation between general practitioner and admitting hospital doctor in respect of diagnostic labels, with agreement in 90 per cent of admissions.

The factors considered by the general practitioner to be most relevant in determining admission are shown in table II.

TABLE II

MAIN FACTOR IN 573 ADMISSIONS

Main factor, general practitioner assessment	*Total number 573*	*Need for consultant care*		
		Agreement		*Disagreement*
		A (number=189)	*B (number=137)*	*C (number=178)*
	per cent	*per cent*	*per cent*	*per cent*
Medical	*78*	*96*	*55*	*72*
Social	*19*	*3*	*38*	*27*
Nursing	*3*	*1*	*7*	*1*
	100	*100*	*100*	*100*

General practitioners recorded not only their assessment of the main factors operating but of *all* factors they considered relevant in any given admission. These assessments are shown in table III.

TABLE III

PERCENTAGE DISTRIBUTION* OF ALL FACTORS RECORDED BY GENERAL PRACTITIONERS IN 573 ADMISSIONS AND SUB-GROUPS

Factors in general practitioner's assessment	*Total number =573*	*Need for consultant care*		
		Agreement		*Disagreement*
		A (number=189)	*B (number=137)*	*C (number=178)*
	per cent	*per cent*	*per cent*	*per cent*
Medical	*92*	*100*	*82*	*89*
Social	*45*	*23*	*71*	*56*
Nursing	*45*	*37*	*52*	*46*

*Since more than one factor was commonly recorded percentages do not add up to 100.

Group D

The characteristics of the 69 admissions in this category (general practitioner assessment requiring consultant care, hospital assessment that patient's needs might be met at home or in hospital without consultant care) resemble group A (complete agreement on the need for consultant care). Nearly two-thirds of the group were contributed by the main teaching hospital, and contained patients with myocardial ischaemia, elderly patients with myocardial infarction, diabetes mellitus and isolated examples of major morbidity.

Alternative care

In 130 instances general practitioners considered that they might have continued to care for their patients at home, granted additional services, as shown in table IV.

TABLE IV

ALTERNATIVE SERVICES NEEDED FOR DOMICILIARY CARE

*Service required**	*Number*
Strengthening of nursing services	89
Strengthening of social services	63
Medical diagnostic	17
Medical therapeutic	3
Other	5

*More than one service was occasionally indicated.

General practitioner unit

In 300 instances general practitioners indicated that the patient's needs might have been met by admission to a general practitioner unit. These admissions comprise group B and most of C (most of the 130 admissions above also occur in this group).

Discussion

Several questions are raised by the finding that both general practitioner and hospital doctor agreed that one in four acute medical admissions in this survey did not require the skills and facilities of the large teaching hospital. Should some alternative to the present system be made available to meet the needs of such patients? If so, how can these needs be met?

It may be argued that the presence in an acute ward of elderly patients with respiratory infection or cerebrovascular accidents (two of the disease categories predominating in group B) present to the hospital certain advantages such as ensuring more complete bed occupancy and contributing to stability in the ward routine. On the other hand, such patients merely by their inappropriate presence in an acute bed may also deny the acutely ill access to the necessary facilities and skills.

Group B

Among the 137 admissions whose medical needs were assessed by both practitioners and hospital staff as being within the competence of the general practitioner, the hospital staff estimated that for some, alternative care might have been provided at home but that for about one half a hospital bed was required (i.e. about 11 per cent of 574 admissions).

Since the provision of continuity of care is an essential part of the general practitioner's role (Royal College of General Practitioners, 1969) it is logical to suggest that the general practitioner should be given the opportunity to exercise this function for this group of patients. Israel and Draper (1971) suggest that the purely economic advantages of such an arrangement may be marginal, but they may be underestimating savings likely to result from such factors as speedier return to care in the community and less intensive investigation.

Group C

For those admissions where there was disagreement on the level of care, the larger of the two subgroups (178) comprised admissions in which the general practitioner assessed the patient's needs as being within his competence. The factors commonly recorded by general practitioners were nursing needs; information from the hospital case histories sometimes makes it difficult to understand why the hospital assessment should

involve consultant care. There was a strong impression that there was a tendency especially amongst junior hospital staff to interpret all needs in terms of medical needs—" the patient was admitted to hospital, *therefore* he was ill."

The morbidity of this group contained a wide range of pathology—such as possible myocardial infarction where the diagnosis was in doubt or the known duodenal ulcer with a possible haematemesis. Often the real needs appeared to be time for the diagnosis to become clear and continuous professional (not necessarily medical) supervision during that time. Most of the admissions in this group were deemed by the general practitioners as suitable for admission to a general practitioner unit.

Group D

The small group of 69 admissions comprising the other component of disagreement is more apparent than real. In most, the hospital assessment indicated the need for a *hospital* bed without consultant *care*, while the general practitioner suggested that admission to a general practitioner unit with the addition of a consultant *opinion* was appropriate.

Communicable diseases hospital

A feature of the survey was the use made by general practitioners of the communicable diseases hospital. Half the admission in group C while apparently caused by communicable diseases proved to be respiratory diseases in children or social problems where diarrhoea was a factor. From the total admissions to the three hospitals, most of the patients considered by general practitioners as suitable for a general practitioner unit were found in the infectious disease admissions.

This suggests that any experiment in providing general practitioner beds should include facilities for isolation and for basic physiotherapy (for the elderly and for cerebrovascular accidents).

Conclusion

About one in four admissions might have been avoided by strengthening domiciliary nursing and social services. Most of these admissions might have been admitted to a general practitioner unit. Attachment of nurses to the general practitioner has been shown to reduce the number of admissions to hospital (Kuenssberg, 1970). At present attachment of nursing staff is the exception rather than the rule in Dundee.

This survey confirms the view that as many as a quarter of medical admissions do not require the full facilities automatically made available under the present system. Alternative care would allow specialists to devote a higher proportion of their time to the kind of medical practice for which they alone are trained.

Alternative care was seen by the general practitioners as being provided in a general practitioner unit in over half of the admissions. Since these admissions involved the elderly (often with cerebrovascular accidents) and the young (often with relatively minor infectious diseases) the unit would require appropriate facilities for dealing with such problems. The need to co-operate with consultants and specialists on admissions to such a unit was often expressed and indicates the need for proximity of the unit to the main hospital.

The evidence from this survey strongly suggests that under existing arrangements general practitioners operate not to the best of their capabilities, but within the restrictions of a limiting system.

Although the findings are influenced by many local factors, it is suggested that there are important implications which may apply on a much wider scale.

Acknowledgements

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APPENDIX 1

ADMISSION FACTORS (Ring number as appropriate)

Medical needs

37 Severity of illness
38 Medical complication developing
39 Requires monitoring or technical help
40 Diagnosis in doubt
41 Psychological needs of patient
42 Failure to respond adequately
43 Would require too frequent visits
44 Other—specify:

_____

_____

Social needs

45 Pressure from relatives, friends or patient
46 Nobody available for everyday needs
47 Inadequate toilet or bathing facilities
48 Unsuitable surroundings (overcrowding, etc.)
49 Other—specify:

_____

_____

Nursing needs

50 (1) Technical or specialised
(2) Continuous basic
Other—specify:
51 _____
52 _____

Professional pressures

53 Epidemic (or similar) situation
54 Practice temporarily undermanned
55 Other—specify:

_____

_____

56 Other factors—specify:

_____

57 _____