

The role of the general practitioner hospital in inpatient care

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SUMMARY

The rationale of the general practitioner hospital continues to be questioned. A study of the services and case-mix of two of the four remaining general practitioner hospitals in Northern Ireland was undertaken to determine whether the nature and cost of inpatient care in these hospitals was comparable to the available alternatives. The case-notes of all non-maternity admissions (n=509) were reviewed. The two hospitals provide acute medical care for a wide range of patients. The majority of patients appeared to require hospitalisation. It is likely that the beds at the two hospitals were mainly a substitute for district general hospital care. The general practitioner hospitals were estimated to be less costly than alternative forms of care, although it was doubtful whether they fulfilled all the structural criteria of quality generally regarded as important for hospitals of this type.

INTRODUCTION

There continues to be debate concerning the role of the general practitioner hospital in modern health care. On the one hand, these hospitals are viewed as inessential anachronisms. Concerns have been expressed about their relative isolation, structures (equipment, or existence of admission and discharge policies) and outcome (quality and efficiency of care), and many have been threatened with closure. Criticisms of unnecessary admissions and uneconomical use of beds have also been made.¹ Proponents, on the other hand, stress their strengths, such as continuity of care in accessible, informal surroundings, avoiding admission to the more expensive district general hospital, shorter waiting times² and a unique type of intermediate care linking primary and secondary care³.

These conflicting views, in part, can be explained by the exceptional variety of roles which general practitioner hospitals seem to play throughout the UK. They are particularly well suited to the care of the elderly,⁴ respite care or holiday

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relief as well as for patients requiring short periods of rehabilitation or terminal care.⁵ Such diversity has hindered attempts to produce or evaluate data, for example on the standard and outcome of care. Most available studies have been carried out by highly motivated general practitioners who, in analysing and documenting their own experiences, have tended to present a largely favourable view of their hospitals often with little objective support. Nonetheless, these studies are important since they show that care in these hospitals can be beneficial, and sometimes invaluable for particular types of patients. More evidence is needed about these hospitals to determine whether the balance of favour swings toward the sceptics or the enthusiasts.

There have been very few comparative studies on the standards or appropriateness of care, outcomes and costs for similar patients treated in a general practitioner hospital and a district general hospital. A commonly cited but dated, cost-effectiveness study from the 1970s by Rickard⁶ demonstrated that community hospitals with fewer than 35 beds had higher costs than the district general hospital. Other studies from the early 1970s have compared the effectiveness of the two types of hospitals,^{1, 7} but more up-to-date studies are needed.

This study was commissioned by the Northern Health and Social Services Board in order to clarify the role of its two remaining general practitioner hospitals pending the rationalisation of hospital services. The two hospitals are situated in predominantly rural areas, although one (The Robinson Memorial Hospital) is within a short distance of two district general hospitals. The other (Dalriada Hospital) is more peripheral and located in the most isolated part of the Board area, serving a smaller and more sparsely distributed catchment population considerably more remote from the nearest district general hospital. Table 1 provides summary information on the hospitals and their respective patient populations.

The principal objectives of the study were to describe retrospectively the non-maternity case-load of the two hospitals over a 12 month period, to describe resource use at the two hospitals from routine hospital activity data and to obtain some idea of the costs of treatment at these hospitals in comparison to alternative forms of care.

METHODS

The retrospective survey was based on data extracted by a medically trained member of the research team (GMcE) from the case-notes of all non-maternity inpatients admitted at both hospitals (n=509) during the period 1 October 1990 to 30 September 1991. A form was devised for each inpatient episode and was supplemented by a brief form completed by the general practitioner responsible for the admission. The general practitioner form provided a partial validation of the case-note data, as well as providing additional information on the possible alternatives to admission if the bed had not been available (assuming that only currently available local resources could be used) and the reasons for using the hospital bed rather than an alternative form of care.

A crude costing exercise was undertaken to compare costs to the NHS of general practitioner hospital care in comparison to alternative care (mainly district general hospital but including domiciliary care). The alternatives to

general practitioner hospital care suitable for each patient were specified by the admitting general practitioners. Patients who would have been admitted to hospitals farther afield (44/509, 9%), or for whom there were insufficient data (17/509, 3%) were costed as if they had been admitted to one of the two local district general hospitals. Specialty cost data for general medicine and geriatrics (the most appropriate specialties for comparison) were used to determine the average costs of patients at the two district general hospitals and for one of the general practitioner hospitals. The medical staff, pharmacy and diagnostic components of the specialty costs were allocated according to whether or not the patient made use of that part of the service while in the general practitioner hospital. For example, pharmacy costs were attached only to those patients who were on drug treatments. Nursing staff and general services costs were apportioned equally across specialties. All inpatients were assigned to a specialty on the basis of their primary diagnostic grouping. Overall running costs were used for the general practitioner hospital for which no specialty costs were available (Dalriada Hospital).

TABLE 1

The two general practitioner hospitals: 1990/91 data.

<i>Characteristic</i>	<i>The Robinson Memorial Hospital</i>	<i>Dalriada Hospital</i>
Catchment population	24,000 (15 mile radius)	18,000 (10 mile radius)
Distance to district general hospital(s)	9 miles and 1 mile	19 miles
No. of non-maternity beds	24	22
Inpatients per year	320	200-250
sex distribution	63% female	53% female
mean age	70 years	69 years
Percentage occupancy	80%	85%
Average length of stay	23 days	18 days
Consultant outpatient clinics	None – all at local hospital 1 mile away	11 per month

It was necessary to assume that patients admitted to the general practitioner hospital were as severely ill, on average, as patients in the relevant specialties in the district general hospitals; that outcome and length of stay (or the care episode) in the district general hospital would be the same as in the general practitioner hospital across all care alternatives; and that length of stay was the principal factor affecting total costs. As so few patients were deemed suitable by the general practitioner for either nursing home or domiciliary care, rather crude cost approximations were used. Nursing home provision for 31 patients was estimated using the average cost per residential week for an old people's home in the vicinity (£30.00 per day). Due to the unavailability of suitable

information, the cost of home-based care for 27 patients was strictly nominal at £10.00 per day based on two hours of home-help. Although other forms of home care were available, a very modest level of domiciliary support was assumed since the general practitioners would only have been prepared to see the most able patients managed at home. Furthermore, 78% of this group were living with relatives and would have had direct family support (a non-NHS cost).

RESULTS

During the study period, 82% (417/509) of the total admissions at both general practitioner hospitals could be identified from the case-notes; 220/268 from Dalriada Hospital and 289/351 from the Robinson Memorial Hospital. Most cases (86%) had only one admission during the study period. The mean age of both hospital populations was 69.5 years and only 21% were aged under 60. For both hospitals, the mean length of stay was 20.5 days with a range up to 396 days. Eight per cent (39/509) stayed over two months and 57% for less than two weeks. The distribution of age and length of stay for each hospital is shown in the figure.

The primary reasons for admission are shown in Table 2. Almost two-thirds of the patients at each hospital were admitted primarily for the management and/or diagnosis of a medical and/or surgical problem, convalescence being the second most common reason. The primary reasons for admission of 39 patients who stayed over two months were analysed separately; 23 of these were admitted for the management and/or diagnosis of a medical problem and ten for convalescence or social/respite care. Only two of the 22 patients admitted for terminal care were in this long-stay group. Sixty-seven patients (13%) died in hospital.

A wide variety of primary diagnoses was recorded at each hospital. The most commonly recorded diagnostic group was disease of the circulatory system (79/509, 15%), approximately half of which involved heart disease. Other diagnostic categories included supplementary classification (59/509, 12%), ill defined symptoms and signs (56/509), and respiratory disease (54/509, 11%). On average, 18% of admissions at both hospitals were seen by a visiting consultant and for all but seven there was some evidence in the notes of a management plan and/or objectives for admission.

An average of 69% (351/509) of patients admitted at both hospitals required investigations, particularly blood chemistry/haematology (88%), bacteriological tests (39%) and x-rays (37%). For almost two-thirds (62%) of patients at both hospitals, the main objective was the introduction of a new therapy or drug treatment. A few were admitted primarily for education, but as this is not generally regarded as a specific treatment it was not often recorded in the notes. The remainder were admitted either for the adjustment or stabilisation of their existing treatment regimen (93/509, 18%), or for nursing care alone (83/509, 16%). Although one of the hospitals had an operating theatre, no surgery was performed.

According to the general practitioners' own assessments, 77% (391/509) of all patients would otherwise have been admitted to one of the local district general hospitals. They regarded only 5% (27/509) as suitable for management at home with appropriate family support and a similar proportion would have been

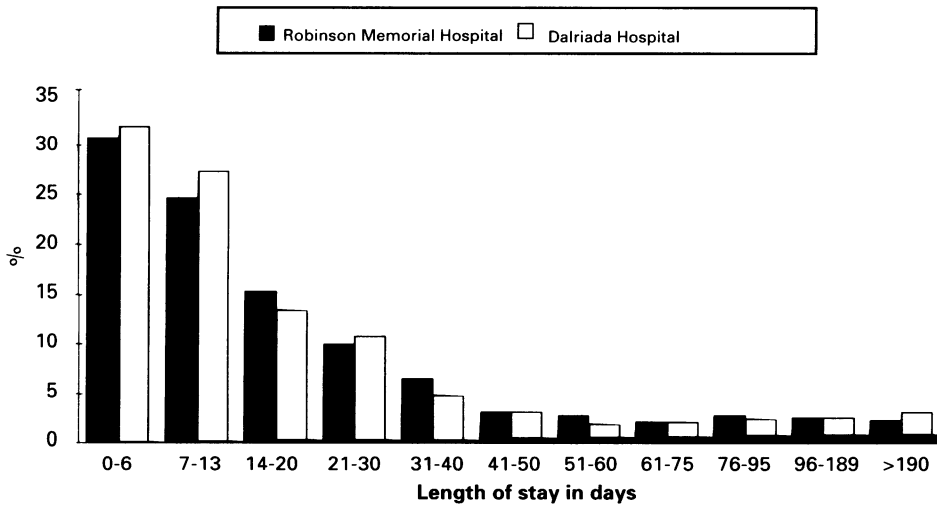
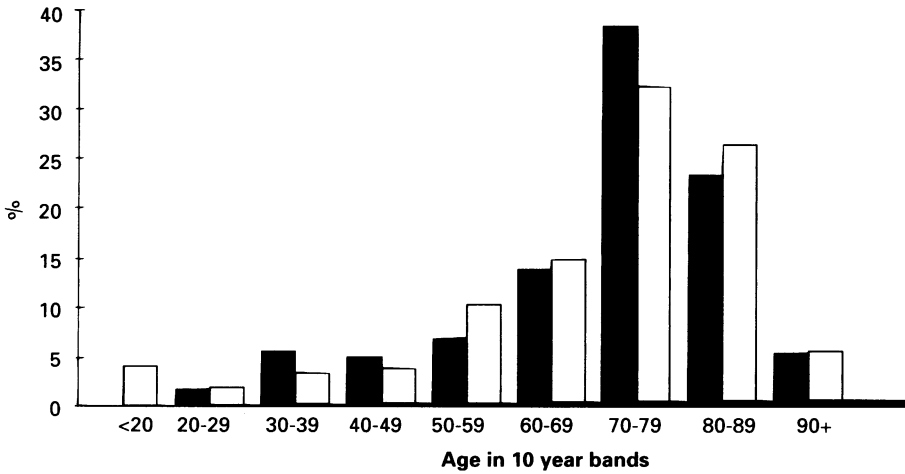


Figure. Age distribution and length of stay for patients admitted to the two general practitioner hospitals

admitted to a residential or nursing home. Continuity of care (254/509, 50%) and patient convenience and/or accessibility (196/509, 39%) were the two most common reasons for admission to the general practitioner hospital rather than one of the two local acute hospitals. Other reasons included the unavailability of beds elsewhere (17/509, 3%) and for a small number of psychiatric diagnoses, avoiding the stigma of admission to a psychiatric hospital (2%).

The total costs of care for the 289 admissions at the Robinson Memorial Hospital and 220 admissions at Dalriada hospital (during the study period) were estimated at £476,376 and £485,011 respectively, compared to £773,795

and £532,484 estimated for the specified alternative forms of care including nursing home provision and home-based care. The higher district general hospital average costs were accounted for by higher levels of nursing and medical staff costs and greater overhead (fixed) costs including diagnostic costs.

TABLE 2
Primary reasons for admission

	<i>The Robinson Memorial Hospital</i>		<i>Dalriada Hospital</i>	
	No.	%	No.	%
Management/diagnosis of medical/surgical problem	181	62.6	135	61.4
Convalescence	24	8.3	24	10.9
Investigation	17	5.9	24	10.9
Respite care/holiday relief	18	6.2	13	5.9
Terminal care	14	4.8	8	3.6
Observation	9	3.1	9	4.1
Other social reasons	13	4.5	4	1.8
Rehabilitation	11	3.8	1	0.5
Other	1	0.4	2	0.9
Insufficient data	1	0.4	-	-
TOTAL	289	100.0	220	100.0

DISCUSSION

The objectives of the study were to obtain some indication of the nature and costs of care of the two general practitioner hospitals relative to alternative forms of provision. Both hospitals appeared to be providing a mainly acute 'general medical' service to elderly patients over a wide range of diagnoses. Although the range of diagnoses was similar to those of other studies with similar sized samples in a number of different locations,^{8, 9} there was comparatively little emphasis on some of the roles typically attributed to general practitioner hospitals such as terminal care and rehabilitation.⁵ In view of this rather atypical emphasis on acute general medical care, we compared the general practitioner hospitals with the general medicine and geriatric specialties in the district general hospital.

Although there was no direct evidence on outcome or appropriateness of care, these preliminary findings did indicate that these hospitals were fulfilling a useful role; patients improved sufficiently to be discharged within a reasonable period of time after the acute episode. There was no evidence of bed-blocking

and it would appear that neither hospital was becoming a long-stay geriatric facility, a criticism often levelled at general practitioner hospitals.¹⁰ The general practitioners appeared systematic in the treatment of their patients and there was evidence of a management plan for all but 1% (7/509) of admissions at both hospitals. There were very few transfers elsewhere, which would suggest that admissions were for the most part appropriate and patients could be managed successfully without further specialist help. However, this does not preclude the possibility that patients could have been better managed at home or in other settings.

Hospital activity rates at the two hospitals demonstrated relatively economical use of inpatient resources and this was borne out by the crude estimate that general practitioner hospital provision was, on average, less costly to the NHS than an alternative pattern of care. The mean length of stay (20 days) and occupancy (80%) during the study period compared favourably with those found in other studies,² as well as those for general medicine at one of the two local district general hospitals (47 days, 68% occupancy) and for geriatric medicine at the other (63 days, 80% occupancy). However, both general practitioner hospitals failed to meet certain structural standards of quality recently cited as important for the effective functioning of such hospitals.¹¹ In particular, at the time of the survey, neither operated a system of clinical audit and one had no formal written admission/discharge policy.

There were a number of limitations in the design of this study. It was not possible to compare directly the relative quality and cost-effectiveness of general practitioner hospital and district general hospital provision in similar groups of patients. Two obvious limitations of the cost evaluation were the reliance on total and average costs and the assumption that the general practitioner hospital patients were as severely ill as those treated in the district general hospitals. (An inspection of individual diagnoses demonstrated that this was not the case). The higher average costs at the two district general hospitals were due to higher staffing levels justified by the more complex total caseload and the provision of facilities which would not normally be used by all patients such as an intensive care unit. Individual patient costs could not be calculated from the available data. The costs of domiciliary and nursing home care were also crude, but since they applied to only 11% of patients, are unlikely to affect the comparison.

In reality, the relative costs of district general hospital and general practitioner hospital care may depend on the ability of the former to absorb cases treated at the general practitioner hospital into its workload without additional facilities or staff. However, it was not possible with the routine data to carry out a marginal cost analysis to determine whether or not this would be the case. Occupancy levels at the two nearest district general hospitals would suggest that there was relatively little spare capacity for cases admitted to the general practitioner hospitals and therefore average costs were broadly appropriate. It was not possible in this study to look at the hospital utilisation rates of the general practitioner hospital catchment population. If total admission rates are higher as a result of the presence of these hospitals (due to increased accessibility), this could erode the cost advantage shown in the crude comparison. In addition, the cost comparison was confined to NHS costs with no allowance for patients and relatives travel.

In the absence of an independent measure of severity, there was no means of corroborating the general practitioners' professional judgements on whether hospitalisation was appropriate in the first place or whether the alternatives which they suggested were appropriate. In a more rigorous study, some form of independent review panel could assess the suitability of cases for hospitalisation. Patient selection effects may be present in these hospitals and general practitioners may tend to admit older patients with straightforward or clearly established diagnoses. It was not feasible to include a description of patients from the general practitioner hospital catchment areas who were primarily admitted to the district general hospitals in order to determine how they compared in terms of severity of illness.

It is likely, on the basis of the available data, that general practitioner hospital provision is both a partial 'add-on' (it may increase utilisation levels in the vicinity) and a less costly substitute for district general hospital services in this rural area. There is little evidence that it is a substitute for domiciliary care.

On the whole, these hospitals do appear to play an important, though somewhat poorly defined role in inpatient care. However, without further comparative research on costs and outcomes in similar groups of patients, it is not possible to show definitively whether the two hospitals make a cost-effective contribution to health services for the local populations served. Neither a review of the literature nor the results of this study provide definitive evidence that general practitioner hospitals are preferable to district general hospitals, or indeed, domiciliary care, for the types of cases they currently treat. There is a clear need for empirical research on the costs and benefits of general practitioner hospitals versus alternative forms of care. Ideally, a prospective case-control design incorporating some form of cost-effectiveness analysis would be required, preferably undertaken on a population rather than hospital basis. It may be worth comparing the costs of care, service utilisation and outcomes in socio-demographically similar populations with and without access to a general practitioner hospital. It would also be worthwhile to ask what the patients generally value most in the care they receive, whether from the general practitioner hospital, district general hospital, nursing home or domiciliary support. Without such studies, the role of the general practitioner hospital both in Northern Ireland and elsewhere will remain uncertain.

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