

The provision of cottage hospital beds

J. S. BERKELEY, F.R.C.G.P., M.F.C.M., Dip.Soc.Med.

Department of General Practice, University of Aberdeen

SUMMARY. The existence of cottage hospital beds is historically determined rather than planned, and there is apparently no official ratio for the provision of such beds. A comparative study, in North-east Scotland, of populations with and without access to cottage hospital beds suggests that providing 1.5 beds per 1,000 population is a reasonable basis for future discussion and planning.

Introduction

The desirability of general practitioners having access to hospital beds, in which they may care for some of their own patients, has been a recurring theme in many reports since the inception of the National Health Service (Cohen Report, 1954; Platt Report, 1961; Hospital Plans for England and Wales, and Scotland, 1962; Porritt Report, 1962; Gillie Report, 1963). The Brotherston Report (1971) recognised the great benefit to smaller communities of cottage hospitals staffed by general practitioners and suggested that it was desirable to consider how the means could be found to extend these to all general practitioners.

There is, however, a notable lack of comment on the optimum ratio for the provision of general-practitioner beds in official publications or individual reports. Under very different circumstances Burdett (1877) suggested one bed per 1,000 as "the standard laid down by the best authorities," while in more recent times the Oxford Regional Hospital Board estimated (Loudon, 1972) two beds per 1,000 in a community hospital. A recent memorandum (Department of Health and Social Security, 1974) although distinguishing between the different functions of community and cottage hospitals, again makes no statement on the scale of provision of beds in the latter.

Aim

The aim of this study was to determine a rational basis for the provision of general-practitioner beds in rural areas.

Method

Two sources of information were used. Firstly, an analysis was made of all patients discharged during 1972 from 352 general-practitioner beds in the 16 cottage hospitals in North-east Scotland.

Secondly, a comparison was made of the use of cottage hospital beds and general beds in Aberdeen hospitals by two defined populations, one of which had access to cottage hospital beds, the other having no choice and all patients for admission being necessarily referred to a general hospital.

The characteristics of the two populations were similar, and there was a total study population of 34,000 patients on the practice lists of 20 general practitioners.

Admissions of obstetric and geriatric patients (over the age of 65) were excluded, as beds for these patients are separately designated in cottage hospitals. Similarly, psychiatric patients were excluded as not being involved in the use of general-practitioner beds in cottage hospitals.

Results

There were 3,363 patients discharged from cottage hospital general-practitioner beds in the area during 1972. These included 425 patients (12.6 per cent) who died in hospital. Three-quarters of all patients admitted to cottage hospitals were entirely treated there (table 1). In the remaining quarter the care of the patients was shared between the cottage and general hospital, half of these being transferred to a general hospital after initial admission to a cottage hospital, and the other half were transferred from the general hospital to a cottage hospital for convalescence or continuing care.

TABLE 1
COTTAGE HOSPITAL DISCHARGES 1972—ALL COTTAGE HOSPITALS NORTH-EAST SCOTLAND
GENERAL-PRACTITIONER NON-OBSTETRIC BEDS

ICD	First diagnosis	A	B	C	D	
1	Infective and parasitic diseases	30	8	0	1	
2	Neoplasms	152	22	71	8	
3	Endocrine, nutritional, and metabolic diseases	46	5	3	5	
4	Diseases of blood and blood-forming organs	19	3	2	2	
5	Mental disorders	65	19	1	1	
6	Diseases of nervous system and sense organs	63	27	9	2	
7	Diseases of circulatory system	633	85	67	14	
8	Diseases of respiratory system	359	35	11	1	
9	Diseases of digestive system	122	33	79	6	
10	Diseases of genitourinary system	264	22	40	3	
11	Complication of pregnancy and puerperium	20	9	3	0	
12	Diseases of skin and subcutaneous tissue	45	5	4	0	
13	Diseases of musculoskeletal system	118	18	9	3	
14	Congenital anomalies	2	1	2	0	
15	Certain causes of perinatal morbidity and mortality	1	0	1	0	
16	Symptoms and ill-defined conditions	367	71	14	7	
17	Accidents, poisonings and violence	240	35	36	14	
TOTAL		2,546	398	352	67	
		%	75.7	11.8	10.5	2.0

A=Fully treated in cottage hospital

B=Transferred to other hospital

C=Transferred from other hospital

D=Transferred in and transferred out.

TABLE 2
COTTAGE HOSPITAL DISCHARGES 1972—SIX SELECTED PRACTICES—ALL HOSPITAL DISCHARGES

Type of practices	Discharge rates (per 1000 practice population)		
	Cottage hospital	General hospital	All discharges
With cottage hospitals	25	95	120
Without cottage hospitals	—	110	110

In the comparative study of the selected practice groups the total discharge rate (table 2) in the practices with no cottage hospital facilities was 110 per 1,000, and on the other hand, in the practices with access to cottage hospital beds the discharge rate from a general hospital in Aberdeen was 95 per 1,000.

In addition there was a discharge rate from the cottage hospitals of 25 per 1,000. The cottage hospital was contributing to the hospital care of 25 patients per 1,000 practice population, which represented a reduction in demand by patients on Aberdeen hospital beds of 15 per 1,000, and in addition apparently met the needs of an extra ten patients per 1,000 practice population per year.

Patients may be admitted to any of 33 hospital divisions or units, and discharges from units of general surgery and general medicine formed one third of all discharges. The discharge rate for the five most often used surgical units was the same for practices with and those without access to cottage hospitals (table 3). As in the cottage hospitals selected for this study surgery was not done, therefore the similar surgical discharge rates for the two groups of patients would suggest a uniformity in the use of Aberdeen hospitals by the practices.

TABLE 3

COTTAGE HOSPITAL DISCHARGES 1972—SIX SELECTED PRACTICES—ALL HOSPITAL DISCHARGES—DISCHARGE RATE BY UNIT (RATE PER 1,000, PRACTICE POPULATION) LISTING UNITS WITH MORE THAN 100 DISCHARGES TO SIX PRACTICES

	<i>Practices with cottage hospitals</i>		<i>Practices without cottage hospitals</i>	
	<i>Discharges</i>	<i>Rate per 1,000</i>	<i>Discharges</i>	<i>Rate per 1,000</i>
General surgery	457	25	347	22
Gynaecology	220	12	233	15
Orthopaedic surgery	157	9	122	8
E.N.T. surgery	119	7	107	7
Urology	59	3	45	3
		56		55
General practice non-obstetric	463	25	—	—
General medicine	287	16	329	21
Paediatric, medical	75	4	87	5
Medical specialties*	44	2	60	4
Convalescent	27	1	86	5
		48		35
TOTAL	1,908	105	1,416	89

86.9
all discharges

80.9
all discharges

*Cardiology, neurology, dermatology and chest medicine.

Use of medical units

On the other hand, the use of medical units by the two groups of practices differed considerably. For practices with access to cottage hospital beds, the discharge rate for the four Aberdeen medical units was 23 per 1,000, while from the three practices with no access to cottage hospital beds the discharge rate was 35 per 1,000. This represents a

difference between the two groups of patients of 12 per 1,000 for the use of medical units in central hospitals by the different types of practice.

This figure of 12 per 1,000 was almost half the discharge rate (25 per 1,000) from the general-practitioner beds being studied and supports the hypothesis that cottage hospitals protect general hospital beds. The extent of this effect in this study was half of the general-practitioner bed usage.

Discussion

The existence of general-practitioner beds in cottage hospitals is historically determined rather than planned, the variations often depending on the benefaction and enthusiasm of the local community.

In seeking to determine a ratio for the provision of general-practitioner beds the average days' stay for all general-practitioner non-obstetric beds in the Grampian Health Board area was taken as 24.3 days (North Eastern Regional Hospital Board, 1972).

The cottage hospital discharge rate of 25 per 1,000 was distributed into 15 patients who represent a reduction in demand on Aberdeen hospitals and ten patients representing a need being met by the cottage hospital. This was taken as a reasonable projection of the patient-demand on such beds. In other words, for the three practices with access to cottage hospitals, over 200 patients were treated per cottage hospital bed during one year, who would otherwise have had to be admitted to an Aberdeen hospital.

Since 15 discharges per 1,000, taking duration of stay into account, equals exactly one bed per 1,000 practice population this was the minimum bed requirement for the conditions which existed at that time. If the need being met by the extra ten discharged patients per 1,000 was added, then the requirement was 1.7 beds per 1,000 population.

A similar result may be obtained in an alternative way by considering the differences in the discharge rates from the medical units (table 3). It was found that the combined discharge rate for patients from the practices without cottage hospitals was 35 per 1,000, whereas from the practices with cottage hospitals the comparable rate was 23 per 1,000.

From these results of discharge by unit, general-practitioner beds were saving 12 discharges per 1,000 population from the general hospitals. This gave a minimum bed requirement of just under one bed per 1,000 population. The additional 13 discharges per 1,000 represent an area of demand being met by the cottage hospital, and the total of 25 discharges per 1,000, taking duration of stay into account, is therefore a general-practitioner bed requirement of 1.7 beds per 1,000 practice population.

These two sets of results demonstrate a minimum bed requirement of 1.0 per 1,000, and a maximum requirement of 1.7 per 1,000 population. One further observation to be made is that these calculations are on the basis of 100 per cent bed occupancy, which for planning purposes is unrealistic. If a bed occupancy of 85 per cent (the average for all hospital beds in the Grampian Area) is suggested as realistic for planning purposes, then the minimum requirement would be 1.2 per 1,000 and the maximum 1.9 per 1,000 population.

Geographical factors must play an important part in the decision to provide cottage hospital beds in this part of Scotland, and it can be shown that the further patients live from Aberdeen the more likely they are to be treated in a cottage hospital.

The general practitioner's reasons for referral and his choice of hospital will be considered in a subsequent paper. In this study, from the practices with cottage hospital facilities only 21 per cent of patients were admitted to a cottage hospital, whereas Meredith *et al.* (1968) and Loudon (1972) concluded that one third of all patients were suitable for general-practitioner care.

It appears that the minimum ratio for the provision of general-practitioner beds

in cottage hospitals in the Grampian Health Board area should be 1.5 per 1,000 practice population, and the optimum ratio should be between 1.5 and 2.0 beds per 1,000 population under prevailing conditions. Any alteration of the variables, such as the duration of stay, or the transfer of certain elderly patients to geriatric care, would change the general-practitioner bed requirements. An agreed ratio for the provision of such beds at least provides a basis for future discussion and planning.

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