are almost infinitely reusable, as are the glass bottles. Disposable plastic giving sets should be used, not rubber tubing. Efficient autoclaves are another essential, and here again, as with stills, appropriate technological interests should be enlisted with regard to design, power sources, and easy maintenance. Any risk of contamination should be slight provided that sufficient care is taken at all stages, including the cleaning of all apparatus. Staff who take on this responsibility at the periphery must receive proper training, which may best be undertaken centrally.

Plasma and blood

Plasma cannot be prepared locally, but freeze dried plasma has a long life if kept in a refrigerator. It may be reconstituted as required using freshly prepared and filtered distilled water. Blood supplies frequently come from a central blood bank and can be stored safely in a refrigerator for up to 21 days at a temperature that does not exceed 4°C. Blood grouping and cross matching must also be available, and therefore blood may be collected locally at health centres or small hospitals, using containers as prepared for other intravenous fluids. Again, it is recommended that prepacked plastic disposable taking and giving sets should be used. As it is already recognised that plastic disposable syringes are often resterilised for multiple use, however, research ought to be done into all so called disposable equipment to establish how and how often it may safely be reused.

Sterilisation of some types of equipment may be improvised—for example, syringes and needles, some instruments, and ligatures may be simply boiled in any container over any source of heat—although autoclaving is essential for many purposes. PATH is developing a sterilisation safety marker, which is shortly to be tested in the field. It consists of a coloured plastic disc protected by a metal ring. The colour changes when the

disc has been kept at a temperature of 100°C for not less than 20 minutes. The disc is reusable and cheap and should be a useful way to check the adequacy of sterilisation by boiling, as for instance in home deliveries or in field conditions for immunisation.

Adequate storage facilities in hospitals and health centres are essential, and there are several simple ways in which they may be readily improved. A useful handbook has recently been published by AHRTAG called *How to Look After a Health Centre Store*.⁵ This makes a good companion volume to their earlier publication *How to Look After a Refrigerator*, which is soon to be reissued in an updated version. Undoubtedly efficient refrigeration is crucial for the proper functioning of any medical centre, not only for the storage and transport of vaccine but also for the safe storage of serum; antitoxin; reconstituted antibiotics for injection; drugs such as some forms of insulin; and, finally, plasma and blood.

To look at immunisation, rehydration, and transfusion as peripheral procedures, clearly there is great scope for modification of existing methods and the imaginative application of appropriate technologies.

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Hospital Topics

Contribution of general practitioner hospitals in Scotland

J A GRANT

Abstract

The results of a survey of 64 Scottish general practitioner hospitals showed that in 1980 these hospitals contained 3.3% of available staffed beds in Scotland; 13.6% of the resident population had access for initial hospital care, and 14.5% of Scottish general practitioners were on their staffs. During the year of the survey they discharged 1.8% of all non-surgical patients, treated almost 100 000 patients for accidents and emergencies and 140 000 out-patients, and 4.4% of all deliveries in Scotland were carried out in the hospitals surveyed.

Most communities which are served by general practitioner hospitals in Scotland are rural and on average are more than 30 miles from their nearest district general hospital. The contribution that these small hospitals make to the overall hospital workload has not previously been estimated. It has been shown nationally to be small but not inconsiderable. In terms of the contribution to the health care of the communities they serve it cannot and should not be underestimated.

Introduction

The contribution of the general practitioner hospital in providing health care in Scotland has not been well documented. In an extensive study Cavenagh showed that 3% of short term hospital beds in England and Wales were in general practitioner hospitals and they provided initial hospital care for up to 20% of the

population.¹ Berkeley showed the importance of community inpatient facilities to general practitioners in the Grampian region.² No comparable data, however, have been published for Scotland. This study was undertaken to find out what contribution these hospitals make to the overall hospital workload.

In Scotland it was estimated that approximately 70 hospitals could be classified as primarily general practitioner. A general practitioner hospital is any hospital for which an area health board is obliged to create a staff fund under the terms of paragraph 87 of the *Hospital Medical and Dental Staff, Scotland, Terms and Conditions of Service* (June 1981 edition). The exact number was not easy to determine owing to the complexities of the classification of hospital function.³ In the end several hospitals did not respond to the survey even though they came under the appropriate classification, one even denying strongly that it had anything to do with general practitioners. Several of these non-responders were subsequently found to have been reclassified as long stay geriatric units under the care of a geriatrician. Despite these problems, it is estimated that data from over 90% of the general practitioner hospitals in Scotland were obtained.

Each hospital in this survey is unique, having developed—usually in the early part of this century—out of a response to the needs of the local community and through the generosity of local benefactors. The range of services such hospitals provide is inevitably subject to these past influences as well as to geographical location.

Current economic pressures and the fundamental questioning about the way health care should be provided continue to pose questions about the role of the general practitioner hospital in the future. The results of this survey attempt to help provide some answers to these questions by defining more clearly the work that they carry out.

Method

Published data from the Scottish Home and Health Department listed 53 general practitioner hospitals with short stay medical beds and a variable number of obstetric, surgical, and long stay beds. A further seven general practitioner independent obstetric hospitals were included, along with 10 small general hospitals where general practitioners were in charge of short and long stay medical beds.

A questionnaire was sent to the senior general practitioners working in each of the 70 hospitals identified. A covering letter explained the reasons behind the questionnaire, emphasising that statistical data about the hospital and not about patients were being asked for. Information was requested for the year 1980, the last full year that complete statistics were available. Each respondent was advised that data could be obtained through local medical record officers from SMR1 (Scottish medical record) returns as well as from "casualty books" required to be kept in each hospital, which recorded all outpatient and casualty work. Where problems arose in completing the questionnaire direct contact with the hospital concerned was made to try to clarify collection of data.

Owing to the distances—from Shetland in the north to Daliburgh in the Western Isles and Coldstream in the Borders—it was not possible to visit all the hospitals contacted and therefore doctors were asked to return questionnaires by post.

Results

General practitioners from 64 hospitals (91.4%) replied to the questionnaire. The hospitals contained a total of 1938 beds, range 8 to 80 beds. Most had between 10 and 20 beds. All beds were designated as short stay, medical, long stay, surgical, or obstetric (table I). During the year of the survey this bed complement represented 3.3% of available staffed hospital beds in Scotland.³

The number of residents who were estimated to have access to Scottish general practitioner hospital beds was 775 000 (13.6% of the total population).³ Some overlap was inevitable between practices, but in contrast to England and Wales most general practitioner hospitals in Scotland are widely scattered in rural areas. It was therefore estimated that this overlap would not be appreciable. The total

TABLE I—Statistical data on 64 Scottish general practitioner hospitals (1980)

	Total	Range
No of staffed beds	1938	8-80
No of general practitioner acute beds	935	6-35
No of general practitioner long stay beds	481	6-53
No of general practitioner surgical beds	150	19 hospitals only
No of general practitioner maternity beds	372	2-26
Average distance from district general hospital (miles)	31	1-130
Average occupancy (%)	71.8	21-99
Mean length of stay in general practitioner acute bed (days)	24.8	14-35
No of deaths among patients discharged from acute beds	736	
Death rate (per 1000 patients discharged from general practitioner acute beds)	74.1	51.8-112.2
No of general practitioners	425	
No of state registered nurses working either full time or part time	649	
Resident population (n)	775 500	1150-35 000

TABLE II—Facilities located in hospitals in survey

Facility	No of hospitals
Obstetric beds	35
Surgical beds	19
x ray units	38
Physiotherapy departments	44
Outpatient clinics	55
Day centres	12

population who might have access to a general practitioner hospital in Scotland in any one year will be very much greater than the resident figure because a large number of temporary residents are also treated. Most hospitals in the survey were in rural areas where large influxes of tourists were the norm.

Four hundred and twenty five general practitioners were receiving bed fund payments in the 64 hospitals in the survey. This represented 14.5% of unrestricted Scottish general practitioner principals in 1980.⁴

FACILITIES

X ray units were functioning in 38 hospitals. Most were used mainly for plain x ray films of chest and suspected fractures. Contrast investigations were carried out in 15 hospitals under the supervision of a trained radiographer. Where simple x ray films for fractures were required trained nursing or medical personnel usually performed the investigation and processed the film.

Forty four hospitals had physiotherapy units or were served by visiting physiotherapists. The service provided ranged from two sessions a week to full time. Day centres for the care of elderly people, who are normally looked after at home, were found in 12 hospitals. These usually consisted of a purpose built or adapted day room in the hospital where an elderly infirm patient could be brought daily for nursing care and attention.

STATISTICS ON INPATIENTS

During the survey 9936 patients were discharged from 935 general practitioner acute beds, and 497 patients were discharged from 481 general practitioner long stay beds: a total of 10 433 patients discharged, 1.7% of all discharges from Scottish hospitals.⁴ In 1980 the number of patients discharged from general practitioner acute beds included 736 who had died—a death rate of 74.1 per 1000 discharges.

In 19 hospitals there were 150 general practitioner surgical beds. An estimated total of 6454 operations were carried out either under general anaesthesia or under local anaesthesia. Procedures ranged from stripping varicose veins, dilatation and curettage, and vasectomy to major procedures including cholecystectomy and hemicolectomy. Most procedures were minor. All hospitals that contained obstetric beds responded to the questionnaire (table II). These contained 372 general practitioner maternity beds in which an estimated 2950 deliveries were carried out: 4.4% of the total number of deliveries carried out in Scotland in 1980.⁴

STATISTICS ON OUTPATIENTS

Fifty five hospitals had consultant outpatient facilities. A mixture of clinics were provided, including general medicine; surgical; ear, nose and throat; ophthalmology; orthopaedic; gynaecology; and obstetrics.

The types of clinics varied according to population density but in most hospitals clinics were provided in the major specialties at least once, and sometimes twice, a month. A total of 59 271 "new" outpatients and 78 944 "return" outpatients were seen during 1980—a total of 138 215 outpatient appointments (table III).

TABLE III—Statistics on inpatients and outpatients from 64 Scottish general practitioner hospitals (1980)

	Total	Range
No of patients discharged	10 433	41-1873
No (estimated) of operations	6 454	50-1100
No (estimated) of deliveries	2 950	6-350
No of "new" casualties	55 522	79-3577
No of "return" casualties	38 280	139-5606
No of "new" outpatients	59 271	40-4165
No of "return" outpatients	78 944	35-6293

Patients needing treatment for casualties were seen by general practitioners in 57 hospitals (the exception being those who provided only obstetric care). An estimated 55 522 new casualties were seen as well as 38 280 "returns"—a total of 93 802 attendances for casualty (table III).

NURSING STAFF

A total of 649 nurses, including staff midwives, were identified in the category of state registered nurses (table I). Though most were full time, a considerable number worked only part time. The number of enrolled nurses and auxiliary nurses was not estimated, but it would probably be much greater than the above total, given the normal pattern of hospital staffing.

Discussion

The individuality, the geographical isolation, and the variability of services provided by the Scottish general practitioner hospital makes any study inevitably difficult and open to criticism. A further complication is classification, which makes accurate identification of all hospitals where general practitioners have overall control of beds extremely difficult. It was one of the aims of this project to include all the general practitioner hospitals in Scotland. Though this has not been achieved, some estimate of the hospital workload undertaken by general practitioners in Scotland who have direct responsibility for hospital beds has been obtained.

These hospitals contain 3.3% of all hospital beds in Scotland and potentially provide inpatient and outpatient facilities for 13.6% of the resident population,³ compared with 3% of short stay hospital beds found by Cavenagh in England and Wales. The provision of community hospital beds has been studied in the Oxford region and in Grampian.^{5, 2} In Oxford it was estimated that two beds per 1000 out of a total requirement of seven or eight beds (of all categories) per 1000 should be in general practitioner hospitals.

I do not know of any officially recognised figure for general practitioner short stay bed provision in Scotland. It seems from the not inconsiderable number of patients discharged from short stay beds under general practitioner control—almost 10 000 a year—that such provision should be made. Almost 100 000 casualties and over 140 000 outpatients were dealt with during the year of the survey. The care and treatment of this number of patients in the local district general hospitals, on average over 30 miles distant, would place much strain on resources. Problems of transport for both visiting relatives and patients are alleviated by providing services in the community.

The total number of operations carried out was small. In terms of convenience to isolated communities, however, it may be considerable. It is essential that more information is provided on this and all other aspects of the clinical work of these hospitals. Standards of care must be seen to be as high as those in the district general hospital. There is some controversy over general practitioners providing intrapartum obstetric care. Nearly 3000 deliveries were carried out in 35 hospitals. The total number of deliveries carried out by general practitioners in Scotland is certainly higher than this since an undetermined number of beds are used by general practitioners for intrapartum care in obstetric units under the overall control of consultants.

It is impossible to discuss general practitioner hospitals without considering the current pressures, including threats of closure, that many are being subjected to. The results of this study show the many facilities provided for a not inconsiderable proportion of the residents and tourists in Scotland. Large numbers of patients are apparently satisfactorily dealt with in hospital by their general practitioners in their own communities. It is well recognised that most patients in general practitioner hospital beds are elderly. The care of these patients in hospital by their own doctor and within easy reach of family and friends should not be underestimated as a factor in their recovery and rehabilitation. General practitioner hospitals use many local nurses, physiotherapists, and radiographers. Though it is difficult to assess, given the distances between hospitals, many of these expensively acquired and much needed skills might be lost to the community if these hospitals ceased to exist.

Since the Dawson report in the 1920s it has been official government policy for general practitioners to be able to care for their own patients in hospital.⁶⁻⁸ It seems paradoxical that there are constant threats to remove this ability from the minority of Scottish general practitioners who are able and willing to practice in this way. The results of this study show the considerable contribution that general practitioners make to reducing the hospital workload in rural communities in Scotland. It suggests the need for effective planning at local level to maximise the care that may be provided efficiently and economically in the community. More information about the work carried out in these hospitals should be published so that such planning may take place with a greater understanding of the needs and resources required. The debate about which medical services should be provided locally as opposed to the level of the district hospital has once again been raised. The outcome of this debate will have profound implications not just for individual doctors and hospitals in Scotland but for the way in which health care is delivered to local communities in the future.

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