Alternatives to hospital care: what are they and who should decide?

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Abstract

Objective—To examine potential for alternatives to care in hospitals for acute admissions, and to compare the decisions about these alternatives made by clinicians with different backgrounds.

Design—Standardised tool was used to identify patients who could potentially be treated in an alternative form of care. Information about such patients was assessed by three panels of clinicians: general practitioners without experience of general practitioner beds, general practitioners with experience of general practitioner beds, and consultants.

Setting—One hospital for acute admissions in a rural area of the South and West region of England.

Subjects—Of 620 patients admitted to specialties of general medicine and care of the elderly, details of 112 were assessed by panels.

Main outcome measures—Proportion of hospitalised patients who could have received alternative care and identification of most appropriate alternative form of care.

Results—Both general practitioner panels estimated that between 51 and 89 of the hospitalised patients could have received alternative care (equivalent to 8–14% of all admissions). Consultants estimated that between 25 and 55 patients could have had alternative care (5.5–9% of all admissions). General practitioner bed and urgent outpatient appointment were the main alternatives chosen by all three panels.

Conclusion—About 10% of admissions to general hospital might be suitable for alternative forms of care. Doctors with different backgrounds made similar overall assessments of most appropriate forms of care.

Introduction

The persistent excess of demand over supply for acute hospital care continues to make headlines.^{1–3} In their search for solutions some health authorities have looked to assessments of the appropriateness of acute care,^{4–6} but, while such assessments may identify those patients who do not require the full range of facilities available in hospitals for acute admissions, they fail directly to inform policy decisions about the pattern of services that should be provided. What is required is information about how the care of these patients could be more appropriately provided and, therefore, about the potential for change in the balance between primary and secondary care.

This paper focuses on the potential for changing provision of services by using a systematic method for identifying alternatives to acute hospital care. This method requires doctors to make choices about individual patients. We used three panels of doctors to show the choices that particular groups of doctors make and, more importantly, the impact that their different choices have on the assessed potential for change.

Methods

This study was designed in two phases. The first phase involved the classification of admissions to a hospital able to provide acute care into two categories on the basis of whether the patient could potentially have been treated in an alternative form of care. Category 1 admissions were defined as those for whom there is no alternative to admission to the hospital with its high technology facilities. Category 2 admissions were defined as those for whom there may have been a lower technology alternative to hospital admission. The second phase of the study involved the identification of potential alternative forms of care for patients classified as category 2.

SUBJECTS

Between August 1993 and January 1994, 700 admissions to the specialties of general medicine and care of the elderly at a hospital for acute admissions in a rural area of the South and West region were investigated prospectively. During this period all admissions on 26 predetermined days were assessed. These days were allocated evenly across the study period and ensured roughly equal representation of each day of the week. Random allocation of days was not possible due to the workload falling on one researcher.

The sample size was based on proportions of inappropriate admissions, which have been reported to be between 15% and 24%.^{7,8} Our aim was to obtain about 100 admissions that were category 2 for further study. In order to ensure a subsample of this size, the total sample was calculated on the basis of the minimum proportion quoted of 15%. With a sample of 700 admissions, it was possible to be 95% confident that the number of category 2 admissions would be between 82 and 120. These limits were considered to be acceptable.

Admissions were assessed prospectively with a utilisation review tool developed and routinely used in the United States: the intensity-severity-discharge system with adult criteria (ISD-A).⁹ A trained researcher (AI) applied the tool to patients' notes in order to classify patients as category 1 or category 2. This classification is based on the severity of each patient's illness and the intensity of service that he or she receives. The tool has been validated in the United States and was found to have moderate validity and high reliability.¹⁰ It has also been validated in Britain for research purposes such as those reported in this study and was found to have fair to moderate validity and high reliability.¹¹

ASSESSMENT PANELS

The second phase of the study required further assessment of all category 2 admissions by three separate panels of doctors. The first panel comprised general practitioners predominantly without access to community hospital beds, the second comprised general practitioners with access to community hospital beds, and the third comprised consultant physicians.

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Panel 1 consisted of seven general practitioners (two women) with a mean age of 45 (range 38-55). Their mean number of years since qualification was 18 (14-21), and they had been in practice for a mean of 12 (5-18) years. The mean size of their practices was 6800 (3850-12 000), with a mean number of four partners (range 3-6). There were no fundholding practices. Only one doctor had access to general practitioner beds.

Panel 2 consisted of seven general practitioners (two women) with a mean age of 40 (35-50). Their mean number of years since qualification was 15 (11-21), and they had been in practice for 10 (3-21) years. The mean size of their practices was 6250 (1200-11 500), with four partners (range 2-7). There were no fundholding practices. All seven general practitioners had access to general practitioner beds and had admitted patients to the beds within the previous six months.

Panel 3 consisted of six consultants from general medicine and one from care of the elderly. They were all men, and their mean number of years since qualification was 26 (16-37).

The panel members studied one page abstracts of patients' details containing clinical and social information about each admission (see appendix). The information was acquired from medical and nursing notes and included age, sex, marital status, employment status, type of home, location of home, whether the patient lived alone, services received in the community, care received before hospital admission, reason for admission (signs and symptoms, including details on examination), medical history, presumptive diagnosis by referring doctor, and presumptive diagnosis on admission by hospital doctor.

The aim for each panel was to assess, on the basis of these abstracts, whether there could have been an alternative form of care for each patient that could have prevented the admission to hospital. When doctors stated that an alternative form of care could have prevented admission they were asked to choose the most appropriate alternative. The choice of the most appropriate alternative was taken from a list of 14, devised by the researchers in conjunction with panel 1 (see box). This list was used by all three panels in order to allow comparisons, but flexibility was maintained for panels 2 and 3 by inclusion of an "other" option.

Each patient's abstract was independently assessed by two members of each panel, and each panel member assessed an equal number of abstracts. Within a

partially balanced incomplete block design¹² the assessment of each abstract was randomly allocated to pairs of panel members. (This design ensured that each participant was asked to assess the same number of abstracts, that each abstract was assessed by the same number of participants, and that particular pairs of panel members assessed the same number of abstracts.) Both of the general practitioner panels were convened before the start of the study and at the end of the study. At the initial meetings the general practitioners completed sample abstracts. Panel 1 also helped in the development of the list and standard definitions of alternative forms of care. The final meetings were used to ascertain the general practitioners' opinions about the results. The consultants in panel 3 were, for practical reasons, sent information about the study and their role by post, as were the three general practitioners who were unable to attend the initial meeting of their panel. Information about the panel members was obtained from brief self completed questionnaires and routine sources of data.

Results

All patients admitted to the specialties of general medicine and care of the elderly in the hospital on the 26 predetermined days were enrolled into the study until the target of 700 admissions to the hospital had been reached. However, data were subsequently unavailable for 14 patients, leaving 686 admissions available for study (547 to general medicine and 139 to care of the elderly). Of these admissions, 31 were elective and 35 were classified as review admissions (patients entered the admissions unit for observation and were sent home within eight hours). These elective and review admissions were not studied further. Of the 620 emergency admissions, 501 were classified as category 1 and 119 as category 2. The three assessment panels considered the 112 category 2 admissions who were referred by a general practitioner or self referred.

ASSESSMENT BY PANELS

Panel 1—All of the patients' abstracts were assessed and returned, and table 1 shows the alternative forms of care chosen by pairs of general practitioners for each abstract. The "other" alternative (option 14) was chosen five times; continued management by the patient's general practitioner was suggested three times, on one occasion it was stated that no further care was required, and on another a same day lung scan was suggested. The alternatives chosen by general practitioners fell broadly into two groups. Firstly, urgent outpatient assessment (options 7 and 8) was commonly chosen as an alternative to hospital admission: for 19 cases, both general practitioners chose urgent (same day or next day) outpatient assessment (cells 7,7; 7,8; and 8,8). For a further 32 cases, this option was chosen by one general practitioner. Secondly, for 12 cases, both panellists chose admission to a general practitioner bed or nursing home bed for short term care as the most appropriate alternative (cells 1,1; 1,2; and 2,2). For a further 26 admissions, this option was chosen by one panellist. Table 2 provides a summary of the results emphasising these main choices.

Panel 2—All of the patients' abstracts were assessed and returned, and table 3 shows that the alternatives chosen by these general practitioners fell into the same two broad groups as those chosen by the doctors in panel 1, although the distribution between the two groups differed. This panel chose the "other" option 21 times; management by the patient's general practitioner was recommended 12 times, and on four occasions the recommendation was to provide an electrocardiograph in the surgery. Other suggestions included treatment by the patient's general prac-

List of alternative forms of care for the assessment panels

- 1 Community hospital or general practitioner bed
- 2 Nursing home—immediate access for short term care
- 3 Nursing home (elderly mentally infirm)—immediate access for short term care
- 4 Respite care home—immediate access for short term care
- 5 Residential home—immediate access for short term care
- 6 Hospice
- 7 Urgent referral for outpatient treatment or investigation—same day (including x ray)
- 8 Urgent referral for outpatient treatment or investigation—next day (including x ray)
- 9 Urgent home visit by consultant—within 48 hours
- 10 Intensive home support—provided within 2 hours
- 11 Intensive home support—provided within 12 hours
- 12 Less intensive home support—provided within 12 hours
- 13 Continuous minor social support in the home—provided within 2 hours
- 14 Other—to be specified

Table 1—Assessments by general practitioners in panel 1 of alternatives to hospital admission. Values are number of times an alternative was chosen

Alternatives suggested by second panel member	Alternatives suggested by first panel member*														Hospital
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1: Community hospital or general practitioner bed	3	7	0	1	1	0	4	1	1	0	0	0	0	0	10
2: Nursing home bed		2	1	1	0	0	0	0	0	1	0	1	0	0	4
3: Nursing home bed (elderly mentally infirm)			1	0	0	0	0	0	0	0	0	0	0	1	0
4: Respite care home				0	0	0	0	0	0	0	0	0	0	0	0
5: Residential home					0	0	0	0	0	0	0	0	0	0	0
6: Hospice						1	0	0	0	0	0	0	0	0	0
7: Urgent outpatient appointment (same day)							10	6	1	0	1	0	0	2	19
8: Urgent outpatient appointment (next day)								3	1	0	0	0	0	0	3
9: Urgent home visit by consultant									0	0	0	0	0	0	0
10: Intensive home support (within 2 hours)										0	0	0	0	0	0
11: Intensive home support (within 12 hours)											0	0	0	0	0
12: Less intensive home support												0	0	0	0
13: Continuous minor social support													0	0	0
14: Other														0	2
Hospital for acute admissions															23

Table is laid out on basis of a grid reference so that cell 1,1 shows that both assessors agreed that a general practitioner bed was most appropriate alternative to acute hospital care on three occasions.

*Code numbers in accordance with left hand column.

itioner with support from a district nurse for 24 hours, child care at home, direct access radiology, urgent x ray investigation with intensive home support, and an outpatient appointment within one week. Table 4 gives a simplified version of the results.

Panel 3—The response rate for the return of abstracts by this panel was 71%, with five consultants returning all the abstracts and two returning none. Table 5 shows the alternatives chosen by this panel; for abstracts that were assessed by only one consultant, the alternative chosen was ascribed to both consultants in the table. For six abstracts no information was available. It is evident that, although alternatives to hospital admission were chosen less often than was the case with the two general practitioner panels, the alternatives chosen fell into the two same broad groups as they did with the other panels. The "other" option was chosen

twice; on both occasions the suggested alternative was casualty assessment. Table 6 shows a summary of these results.

POTENTIAL FOR CHANGE

For each panel it was possible to derive ranges for the potential for change in the pattern of care (see table 7). The maximum potential for change was based on the assumption that a lower technology alternative could be substituted for hospital care unless both panellists assessing the abstract decided that care in a hospital for acute admissions was appropriate. The minimum potential for change was based on the assumption that a lower technology alternative could be substituted only when neither panellist thought that hospital care was required. Such ranges may be more useful than point estimates given that, in practice, even doctors with similar backgrounds and experience do not always make the same decisions.

Table 7 shows that the potential for change was less than that estimated with the intensity-severity-discharge system but was still substantial. From the assessments by the general practitioner panels, there was potential for between 51 and 89 of the 620 emergency admissions to hospital to be treated by a lower technology alternative. If this is generalised to annual admissions, there is potential for saving between 8% and 14% of emergency admissions. If the assessments of the consultant panel are used, these estimates would be reduced to between 5.5% and 9%.

Table 2—Summary of choices made by panel 1 (see table 1 for details)

	General practitioner bed	Urgent outpatient appointment	All other alternatives	Hospital for acute admissions
General practitioner bed	3	5	10	10
Urgent outpatient appointment		19	5	22
All other alternatives			9	6
Hospital for acute admissions				23

Table 3—Assessments by general practitioners in panel 2 of alternatives to hospital admission. Values are number of times an alternative was chosen

Alternatives suggested by second panel member	Alternatives suggested by first panel member*														Hospital
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1: Community hospital or general practitioner bed	15	1	0	0	1	1	4	2	1	0	0	0	1	2	13
2: Nursing home bed		0	0	1	0	0	0	0	0	1	0	0	0	0	0
3: Nursing home bed (elderly mentally infirm)			0	0	0	0	0	0	0	0	0	0	0	0	0
4: Respite care home				0	0	0	0	0	0	0	0	0	0	0	0
5: Residential home					0	0	0	0	0	0	0	0	0	0	0
6: Hospice						0	0	0	0	0	0	0	0	0	0
7: Urgent outpatient appointment (same day)							6	1	0	0	0	0	1	5	10
8: Urgent outpatient appointment (next day)								1	0	0	0	0	1	3	5
9: Urgent home visit by consultant									0	0	0	0	0	0	2
10: Intensive home support (within 2 hours)										0	0	0	0	0	0
11: Intensive home support (within 12 hours)											0	0	0	0	0
12: Less intensive home support												0	0	0	0
13: Continuous minor social support													0	4	0
14: Other														1	5
Hospital for acute admissions															24

*Code numbers in accordance with left hand column.

Table 4—Summary of choices made by panel 2 (see table 3 for details)

	General practitioner bed	Urgent outpatient appointment	All other alternatives	Hospital for acute admissions
General practitioner bed	15	6	7	13
Urgent outpatient appointment		8	10	15
All other alternatives			7	7
Hospital for acute admissions				24

likely to favour alternatives that they had experience of. The members of panel 2, who had more experience of general practitioner beds, were more likely to choose this alternative. The consultants, with their greater experience of hospital care, were more likely to choose this as the most appropriate form of care. Possibly related to this, the "hospital at home" type of alternative was rarely chosen. This may have reflected the panels' general lack of experience with such alternatives, although it is possible that these alter-

Table 5—Assessments by consultants in panel 3 of alternatives to hospital admission. Values are number of times an alternative was chosen

Alternatives suggested by second panel member	Alternatives suggested by first panel member*														Hospital
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1: Community hospital or general practitioner bed	8	2	1	0	0	0	0	0	0	0	0	0	0	0	5
2: Nursing home bed		1	0	0	0	0	0	0	0	0	0	0	0	0	0
3: Nursing home bed (elderly mentally infirm)			0	0	0	0	0	0	0	0	0	0	0	0	0
4: Respite care home				0	0	0	0	0	0	0	0	0	0	1	0
5: Residential home					0	0	0	0	0	0	0	0	0	0	0
6: Hospice						1	0	0	0	0	0	0	0	0	0
7: Urgent outpatient appointment (same day)							8	4	0	0	0	0	0	0	7
8: Urgent outpatient appointment (next day)								6	1	0	0	0	0	0	7
9: Urgent home visit by consultant									1	0	0	0	0	0	0
10: Intensive home support (within 2 hours)										0	0	0	0	0	0
11: Intensive home support (within 12 hours)											0	0	0	0	0
12: Less intensive home support												0	0	0	0
13: Continuous minor social support													1	0	0
14: Other														0	1
Hospital for acute admissions															51

*Code numbers in accordance with left hand column.

Table 6—Summary of choices made by panel 3 (see table 5 for details)

	General practitioner bed	Urgent outpatient appointment	All other alternatives	Hospital for acute admissions
General practitioner bed	8	0	3	5
Urgent outpatient appointment		18	1	14
All other alternatives			5	1
Hospital for acute admissions				51

Discussion

Overall, the response rate for the completion of abstracts was good. The lower response rate of the consultant panel may have been because it was not possible to arrange an initial meeting with the panel. This panel may consequently have had less commitment to, and understanding of, the study.

The consultant panel chose hospital admission as the most appropriate form of care much more often than any alternative form of care and was much more likely than the general practitioner panels to state that there was no alternative to acute hospital care. This may be because decisions about where patients should initially be treated are not usually made by consultants. They have not traditionally had the gatekeeping role that general practitioners have, and thus they may be less familiar with different forms of care. This raises the question as to which group of doctors is best suited to make such decisions. Should it be consultants, who presumably have greater experience of the particular clinical conditions under consideration, or should it be general practitioners, who have greater knowledge of the potential alternatives and greater experience of the gatekeeping role?

All three panels made similar concentrations in their choices of alternatives despite their different experiences. There were, however, marginal differences which might have been due to the panels being more

natives were not the most appropriate for the particular admissions studied. The general practitioners in panel 2 chose the "other" option more often than those in panel 1. These doctors were not involved with the development of the list of alternatives, and this may have affected their use of the "other" category.

At the final meetings with the general practitioner panels some useful views were expressed. It was stated that, in retrospect, a category for a home visit within 24 hours, rather than within 48 hours, would have been more useful, though it was acknowledged that home visits in rural areas are time consuming and may not be the most efficient use of resources. It was also stated that very few admissions to hospital occur for entirely non-medical reasons and that this was why alternatives reflecting purely social care were rarely chosen. There was general agreement among the general practitioners that urgent access to an outpatient assessment was not always to obtain a consultant's opinion but was

Table 7—Potential for use of alternatives to hospital admission for care of patients as assessed by three panels. Values are numbers (percentages) of cases assessed

	Potential for use of alternatives to hospital*	
	Minimum	Maximum
Panel 1 (n=112)		
Alternative to hospital appropriate	51 (46)	89 (79)
Hospital for acute admissions appropriate	61 (54)	23 (21)
Panel 2 (n=112)		
Alternative to hospital appropriate	53 (47)	88 (79)
Hospital for acute admissions appropriate	59 (53)	24 (21)
Panel 3 (n=106)		
Alternative to hospital appropriate	25 (24)	55 (52)
Hospital for acute admissions appropriate	71 (76)	51 (48)

*See text for details of how minimum and maximum values were estimated.

Key messages

- The persistent excess of demand over supply for acute hospital care has led to interest in assessing the appropriateness of acute care
- This paper investigates the potential for providing alternatives to acute care for patients admitted to a rural general hospital
- General practitioners estimated that between 8% and 14% of 620 emergency admissions to the specialties of general medicine and care of the elderly could have been managed in an alternative manner
- Hospital consultants estimated this proportion to be between 5.5% and 9%.
- The most favoured choices among all doctors were general practitioner beds and urgent outpatient appointments

sometimes solely for access to diagnostic tests. One panel member reported that, as a result of participating in the study, she had become aware of the potential for urgent outpatient appointments and had managed to arrange such an appointment for a patient who had not wanted to be admitted to hospital.

Our study has some limitations. Firstly, the panels' decisions were based on abstracts taken from patients' case notes rather than on the full case notes or on examinations of the patients themselves. Secondly, if the panel members' choice of alternatives was limited by their own experience then the results obtained must be dependent on the local medical setting. Thus, for example, if the study had been conducted in an area with a long running, successful, hospital at home scheme, the results could have been very different. Thirdly, the study examined the views of medical staff only. Nursing staff were not consulted. Finally, the response from the consultant panel was not 100%. Although we considered replacing the two consultants who did not respond, it was not possible within the time limits set for completing the work.

Despite these limitations, our paper shows that, although doctors with different backgrounds and experience made slightly different choices about the most appropriate form of care for particular patients, their assessments of the overall most appropriate forms of care were similar. Our results also suggest that there is a considerable potential for substituting lower technology alternatives for care in hospital. In the two specialties we studied this potential for alternative forms of care amounted to the equivalent of between 8% and 14% of all emergency admissions according to the two general practitioner panels and between 5.5% and 9% according to the consultant panel. Research is now needed to assess the effectiveness and cost of these alternatives.

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Conflict of interest: None.

Appendix

Example of an abstract of patient's details

1 ABOUT THE PATIENT

Age: 75 Gender: Male
Marital status: Divorced Employment status: Retired

2 ABOUT THE PATIENT'S HOME

Type: Private h/h Location: Town
Lives with: Alone

3 ABOUT THE PATIENT'S CARE

Services received in the community: Home care 7 times a week.

Other care received prior to admission: Recent admission for recurrent falls. Discharged 4 weeks prior.

4 ABOUT THE ADMISSION

Reason for admission (signs and symptoms)

Many recent falls and increasing confusion.

O/E—BP 110/60, Pulse 80 irregular, Temp 37°C, Respiratory rate 18. Resting tremor, appears confused but orientated. Vague abdominal tenderness, soft, no masses, chest clear. No neurological findings except ataxia and tremor.

Past medical history

Hernia operations, irregular heart rhythm of unknown cause 20 years ago.

Presumptive diagnosis by GP/referring doctor

Falls ? cause.

Presumptive diagnosis by hospital doctor

Falls ? cause.

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ONE HUNDRED YEARS AGO

SECURITY OF TENURE FOR MEDICAL OFFICERS OF HEALTH.

The present position of the Public Health service in England, in respect of the lack of security of tenure for its officers, must be regarded as in the highest degree unsatisfactory, and as indefensible upon grounds of public policy. The officer who does his duty to the public without fear and without favour, and who is unpossessed of that form of "tact" which consists in keeping on complaisant terms with the members of his local authority, irrespective

of the interests of his district, lives with the sword of Damocles suspended over his head. True, the sword does not very often fall; public opinion is a force which a defaulting local authority has still to reckon with. But the sword may fall any day, and the officer may be practically ruined. It may be regarded as axiomatic that, other things being equal, the smaller the unit of sanitary administration the less efficient it is. But under existing circumstances of insecurity of tenure, every year sees the most promising and efficient combinations of sanitary districts fall to pieces. (*BMJ* 1896;i:546.)