Role of the short stay observation ward in accident and emergency departments in the United Kingdom

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Abstract

Objective—To define the role of the accident and emergency (A&E) short stay ward by a survey of departments in the United Kingdom and review of published reports.

Methods—A postal questionnaire with telephone follow up to all major A&E departments with short stay beds.

Results—95 departments were found to have short stay beds. These units received between 19 000 and 121 000 new patients per year (mean 51 000, median 50 500) and had access to between two and 20 beds (mean 7.5, median 6). The level of provision varied from one bed per 2440 new attendances to one bed per 27 250 new attendances (mean 8380, median 6625). Where data on admission rates were available the departments admitted between 0.1% and 13.3% of their new attendances (mean 2.62%, median 1.9%). Cover was typically provided by an A&E senior house officer with frequent senior ward rounds. While the casemix usually included minor head injuries and alcohol intoxicated patients, there was considerable variation in the cases admitted.

Conclusions—Short stay provision is highly variable in the United Kingdom. While there are many reports of well run short stay units, consistent evidence of clinical value and cost-effectiveness compared to other methods of care is lacking. Further comparative studies are required to define the role of the A&E short stay ward.

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Keywords: short stay ward; observation ward

The provision of short stay observation beds has been a constant feature of recommendations regarding the development of accident and emergency (A&E) facilities.¹⁻⁴ While attempts have been made to quantify the number of beds available to A&E departments of different sizes,²⁻⁵ there have been few consistent guidelines relating to practical issues, such as which cases should be admitted and what level of medical cover should be provided.

The aim of this study was to define the role of the short stay ward or observation unit by survey of the use A&E short stay facilities in the United Kingdom and review of the literature to determine the extent to which their use is supported by research.

Methods

A questionnaire (fig 1) was sent to the clinical director or first named consultant of all 114 A&E departments listed in the British Association for Accident and Emergency Medicine (BAEM) 1996 directory⁶ as having short stay beds. If no reply was received within six weeks the information was collected by telephone call to the department. The 146 remaining major units listed in the directory were contacted by telephone to ascertain if they had short stay beds and were sent a questionnaire if the answer was affirmative.

Results

Postal replies were obtained from 80 of the 114 departments initially surveyed (70%). Data were collected by telephone from the remaining 34 departments (overall 100% response rate). In 26 cases the response indicated that there were no short stay beds and these were therefore excluded from further analysis. Although we did not specifically ask why there were no short stay beds in these departments in spite of their listing in the BAEM handbook, various reasons were nevertheless volunteered: closure due to economic reasons, redevelopment of facilities, or facilities referred to in the BAEM handbook as being admissions units not under the control of the A&E department.

Telephone survey of departments not listed as having short stay beds in the BAEM directory detected seven further departments with beds. These were sent the questionnaire and replies obtained.

In total, therefore, 95 of the major A&E units surveyed have short stay beds. These departments received between 19 000 and 121 000 new attendances per year with a mean of 51 000 and median of 50 500. While 10 had unlimited bed access, the others had between two and 20 beds (mean 7.5, median 6). For these 85 units, the number of attendances per bed varied from 2440 to 27 250 (mean 8380, median 6625).

Table 1 outlines the first on call medical cover for short stay patients. Table 2 identifies the clinical staff who performed ward rounds, while table 3 shows how often such ward rounds were undertaken. Table 4 outlines the type of patients cared for on short stay wards. Numerous other categories of patient were mentioned as being routinely admitted, but with the exception of minor burns (cited in four responses) none was cited in more than two responses.

Information on admission rates was available from 74 departments (78%); the number of

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I am carrying out a review of accident and emergency short stay/observation facilities in the UK and would be very grateful if you or a member of your staff could spare a minute to answer the following simple questions regarding your department.

- 1 How many short stay/observation beds does your department have access to?
_____ -if none, please ignore the remaining questions.
- 2 Who is first on-call for patients in these beds? _____
- 3 How many times per day are ward rounds carried out? _____
-and by whom? _____
- 4 Which categories of patient are routinely admitted?

self-poisoned	[]	minor head injuries	[]
soft tissue infections	[]	hand injuries	[]
chest injuries	[]	post ictal	[]
post hypoglycaemia	[]	elderly/poor mobility	[]
social problems	[]	alcohol/drug intoxicated	[]
post-anaesthetic	[]		

 -any other categories? _____
- 5 How many patients were admitted to these beds in the last year? _____
- 6 What is the occupancy rate for these beds? ____ (if numbers are available)

It is intended that the results of this survey will provide a national picture of short stay bed use. Individual hospital responses will not be reported.
Thank you once again for your help with this project.

Figure 1 Questionnaire used to survey short stay facilities.

Table 1 Medical staff first on call for short stay

All A&E staff	6	(6.3%)
A&E consultant	6	(6.3%)
A&E registrar	4	(4.2%)
A&E "senior staff"	5	(5.3%)
A&E staff grade	3	(3.2%)
A&E senior house officer	66	(69.5%)
Orthopaedic SHO	2	(2.1%)
Surgical SHO	2	(2.1%)
No response	1	(1.0%)

admissions varied from 70 to 6925 per year (mean 1318, median 940). This represents an admission rate ranging from 0.1% to 13.3% of attendances (mean 2.62%, median 1.9%). The responses regarding bed occupancy rate were not adequate for analysis.

Discussion

The A&E short stay ward has been described as "essential for the good and safe management of patients" in a leading textbook.⁷ Guidelines from the British Association of Accident and Emergency Medicine⁵ state that it is "an essential part of every accident and emergency department" and suggest provision of one bed per 5000 new attendances. This survey shows that departments with such facilities (a minority of all departments) provide an average of one bed per 8370 new attendances. The guidelines do not cover the issue of casemix, and our survey shows that, with the exception of head injured or alcohol intoxicated patients, the

casemix of patients routinely admitted to short stay wards is varied. What then is the evidence base for short stay provision and what should be the role of the short stay ward?

To answer this question a computer search of Medline (1966 to 1996) and CINAHL (1982 to 1996) was undertaken, searching for the textwords "short stay," "observation ward," or "observation unit." In addition, the textword "observation" was searched for in any article with the medical subheading "emergency services/hospital," "emergencies," "hospitalisation," or "patient admission." All articles analysing the function of an A&E (or emergency department) based short stay ward were reviewed. Paediatric short stay provision has been surveyed⁸ and reviewed⁹ elsewhere, so only studies relating to adult short stay facilities were sought.

Table 4 Casemix of short stay ward admissions

Minor head injury	85	(89%)
Alcohol/drug intoxicated	76	(80%)
Elderly/poor mobility	66	(69%)
Social problems	64	(67%)
Soft tissue infection	62	(65%)
Self poisoned	54	(57%)
Postictal	52	(55%)
Postanaesthetic	46	(48%)
Chest injury	42	(44%)
Post-hypoglycaemia	37	(39%)
Hand injury	34	(36%)

Defined as the number (and percentage) of wards out of the total of 95 which routinely admit each category of patient.

Table 2 Medical staff performing ward rounds

A&E consultant	47	(49.5%)
A&E registrar	3	(3.2%)
A&E "senior staff"	40	(42.1%)
A&E staff grade	3	(3.2%)
No response	2	(2.1%)

Table 3 Number of ward rounds per day

One	54	(56.8%)
One to two	12	(12.6%)
Two	22	(23.2%)
Two to three	1	(1.0%)
Three	1	(1.0%)
As required	5	(5.3%)

Table 5 General descriptive studies of short stay ward function

Author	Date	Location	Cases studied	Beds	Admissions	% of Attendances
Rainer	1996	Glasgow, UK	Various	32	2460 in 1 year	3.3%
Jones	1995	Liverpool, UK	Various	18	1833 in 6 months	4.36%
Maimaris	1991	London, UK	Various	13	1046 in 1 year	2.1%
Jelinek	1989	Fremantle, Aus	Various	8	1219 in 1 year	1.5%
Clancy	1989	Leeds, UK	Various	16	1067 in 1 year	1.4%
Driscoll	1987	Glasgow, UK	Various	16	1000 consecutive	N/R
Gabbay	1987	London, UK	Various	10	3097 in 1 year	N/R
Neville	1983	Saskatoon, Can	Various	8	1000 per year	1.3%
Ramaiah	1982	Clywd, UK	"Observation"	12	431 in 6 months	N/R
Dallos	1981	London, UK	Various	12	1070 in 6 months	1.6%
		Enfield, UK	Various	10	369 in 6 months	1.1%
Morgan	1981	Newport, UK	Various	10	507 in 3 months	5%
Bobzien	1979	N Carolina, USA	Various	4	442 in 5 months	4.7%
Diamond	1976	Torrance, USA	Various	8	166 in 1 month	2%
Landers	1975	Kansas, USA	Various	7	1000 in 10 months	2.3%
Taubenhaus	1972	Manhattan, USA	Various	N/R	N/R	5.4%

The search found many descriptive studies of the general function of A&E short stay wards.¹⁰⁻²⁴ These reports, outlined in table 5, form the basis of the BAEM guidelines. Their conclusions are generally favourable, based on demonstration of effective, well run units, and reflect the authors' enthusiasm for this form of care. However, in a health care system which demands evidence of clinical value and cost-effectiveness before resources are allocated, it is perhaps not surprising that descriptive studies have not provided incontrovertible evidence of the value of short stay beds for their provision to be universal.

Other studies,^{11 25-37} outlined in table 6, have concentrated on the management of specific conditions on the short stay ward and could provide guidance as to an appropriate casemix. Patients with head injuries,^{11 26 28} thoracic trauma with normal chest x ray,³⁵ abdominal trauma with negative diagnostic peritoneal lavage,³² self harm,^{25 29 34} pyelonephritis,^{30 31} asthma,²⁷ and pancreatitis³³ can all be cared for on a short stay ward. Although these studies describe safe and effective management of various conditions on the short stay ward, it is only by comparison with other methods of care or analysis of cost-effectiveness that the importance of the short stay ward can be established.

Comparative studies have been used to evaluate the impact that access to a short stay ward has upon the care of head injured

patients, by comparison with another hospital lacking such a facility²⁶ and by comparison with a period of time when the ward was closed.²⁸ Both found that fewer inappropriate discharges occurred when short stay facilities were available. Nevertheless, debate arose as to whether admissions represented an appropriately careful approach,¹¹ application of over-cautious guidelines,^{26 28} or whether a lower threshold for computerised tomography would obviate the need for admission altogether for many cases.³⁸ Another comparative study involving a variety of cases showed that short stay patients received earlier senior medical review, fewer investigations, and earlier discharge.³⁹ This study, although opportunistic and therefore poorly controlled, suggests that comparison of A&E short stay management with formal admission deserves more consideration. Meanwhile in the USA, two studies into chronic pancreatitis³³ and asthma²⁷ compared observation units with formal hospital admission and showed no advantage in terms of reducing length of stay and reducing costs. The study of asthmatics also showed a lower initial discharge rate from the emergency department when the observation unit was available. As with head injuries, the presence of a short stay facility may encourage a more cautious approach to patient discharge.

Several studies have assessed the cost-effectiveness of short stay wards. Ryan *et al*²⁵ estimated that short stay care of self harmed

Table 6 Studies of specific cases managed on the short stay ward (SSW)

Author	Date	Location	Cases studied	Conclusions
Ryan	1996	Brighton UK	Self harm	Most self harmed patients can be safely managed on an SSW
Jones	1995	Liverpool UK	Various/head injured	The SSW is essential for the optimal management of the head injured patient
Brown	1994	Edinburgh UK	Head injured	Fewer head injured patients are discharged from A&E if the department has access to an SSW
Brillman	1994	New Mexico USA	Asthma	Use of observation unit reduces initial discharge rate without reducing eventual hospital admission appreciably
MacLaren	1993	London UK	Head injured	Fewer head injured patients were discharged from A&E when the department's SSW was available
Hodgkinson	1994	Brisbane Australia	Drug overdose	Most overdosed patients can be safely managed on an observation unit
Ward	1991	Mississippi USA	Pyelonephritis	Effective outpatient treatment is possible after brief period on observation ward
Israel	1991	Texas USA	Pyelonephritis	Treatment for selected patients can be initiated on an observation unit
Henneman	1989	Torrance USA	Abdominal trauma	Patients with negative diagnostic peritoneal lavage can be managed safely and cost-effectively on the observation unit
Saunders	1988	Denver USA	Alcoholic pancreatitis	Length of stay did not differ between patients on observation unit and those admitted directly to hospital
Ramaiah	1987	Clywd UK	Self injury/assault	The SSW is the ideal place for self injured or assaulted patients
Ammons	1986	USA	Thoracic trauma	Stable patients with normal chest x ray can be managed safely on the observation unit
Harrop	1985	Newport UK	Elderly	The SSW can be used for rapid social and physical rehabilitation
Conrad	1984	Denver USA	Trauma	An observation unit presents a viable, safe and cost-effective alternative for selected trauma patients

patients saved £45 000 per year, mainly by reducing psychiatric referrals. From the United States, Farrell⁴⁰ estimated that a six bedded observation ward in his community hospital emergency department saved 1.7 hospital admissions per day with annual cost savings of \$240 000. Conrad *et al.*,³⁷ studying trauma victims, estimated that reduced length of stay produced an observation unit admission cost of \$75, compared with \$147 for a formal hospital admission, while Henneman *et al.*³² estimated that managing 225 abdominal trauma victims with negative diagnostic peritoneal lavage on an observation unit resulted in potential savings of \$51 329. Another study from the United States⁴¹ of 193 patients amenable to either acute hospital or observation unit care showed that while observation unit admission produced overall cost savings it could also paradoxically produce reduced profits for the hospital and hence be a disincentive to observation unit admission.

Overall these studies suggest that cost savings can be made by using short stay beds, although this effect may be reduced by producing a more cautious approach to direct discharge from the department. In risk management terms this may be appropriate, but improved safety related to the presence of short stay wards has yet to be shown.

Finally, the emergency department chest pain unit is a concept that has developed in the United States⁴² and has been found to be a safe and cost-effective means of caring for the patient with chest pain but low risk of myocardial ischaemia.^{43 44} This potential function of the short stay ward does not appear to have been explored yet in the United Kingdom.

Our survey shows that medical input largely reflects the BAEM guidelines that the ward should be under the direct control of the A&E consultant, while middle grade or senior house officer A&E staff provide immediate medical supervision. In practice the casemix of short stay wards will reflect the interests of the medical staff involved. Specialised areas of care, such as hand injuries, soft tissue infections, and self poisoning, may reflect a specialist interest in the department concerned. However, as higher specialist training in A&E develops it would be reasonable to expect a more universal definition of what cases are suitable for an A&E short stay ward to form. In this respect it is of concern that guidelines for higher specialist training⁴⁵ contain few recommendations regarding training in the care of short stay patients. Any consultant expected to manage a short stay ward should have received training in this area. This deficiency should be addressed if we are to claim that A&E consultants are the ideal staff to run these facilities.

Admission rates in this survey are highly variable and reflect variability in the way beds are used and admissions defined. Some departments make very heavy use of beds by admitting patients for stays of only a few hours, while others have great difficulty preventing beds being taken by other specialties.

It would be naive to expect short stay provision to depend entirely upon formal evidence

of clinical value. Political and economic interests will continue to play a major role in determining what facilities are available. While randomised controlled trials may be impractical, the present situation does allow potential for performing comparative studies similar to those mentioned above.^{26-28 33 39} These could be used to establish evidence based guidelines for resource allocation and casemix of admissions.

CONCLUSION

The provision of short stay facilities in the United Kingdom in terms of bed numbers, admission numbers, and casemix is highly variable, although medical cover is comprehensive. Studies of short stay facilities have shown many well functioning units with considerable enthusiastic support, but objective comparisons with other methods of care are hard to find. If A&E short stay wards are to be developed beyond the requirements of managerial expediency then A&E specialists must take the lead in defining standards of training and provision and researching the clinical and economic data to justify their use.

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Faculty of Accident and Emergency Medicine

Consultant appointments, January–April 1997

Mr K A Bizos	Stoke Mandeville Hospital, Aylesbury
Mr M J Stuart	North Manchester Healthcare
Mr S Bhattacharyya	Burnley Healthcare
Mr H Dardouri	Blackburn/Ribble Health
Ms J Nancarrow	Blackburn/Ribble Health
Mr J McKeever	Greenwich Healthcare
Mr M Morris	Warwick Hospital

Consultant appointments April–September 1997

Ms M Dudek	Royal Berkshire Hospital
Ms M Grocott	Worthing Hospital
Mr A I Jones	North Tyneside Healthcare
Mr A MacNamara	Birmingham Heartlands
Mr D McCreadie	New Cross Hospital, Wolverhampton
Mr S J McGovern	Craigavon Area Hospital
Mr A L Pinto	Wigan and Leigh Health
Mr A Soorma	MidKent Healthcare Trust
Ms C Taylor	Queen Mary's Sidcup
Mr M Zahie	New Cross Hospital, Wolverhampton