

GENERAL DATA

Recommendations

It is the responsibility of management to ensure that all deaths are reported to NCEPOD in a timely manner.

There should be a record of the name of the supervising consultant anaesthetist.

Standard information on hospital facilities should be available and should be accurate.

The adequacy of recovery beds should be reviewed.

Management should ensure that an appropriate number of funded sessions for consultants trained in critical care are allocated to the ICU to allow appropriately qualified medical staff to be available to the ICU at all times.

INTRODUCTION

The data presented in this report relates to deaths occurring between 1 April 2000 and 31 March 2001. The period through which questionnaires were distributed ran through until 31 August 2001 with the final deadline for return being 31 December 2001. Last year, there was a reduction in the number of questionnaires that were returned too late for inclusion but it is unfortunate to note an increase in late returns for this period. The protocol for data collection is detailed in Appendix E.

As anticipated last year, it has now been made mandatory for the independent sector to participate in the Confidential Enquiries with effect from

1 April 2002. Sanctions by the National Care Standards Commission could be applied if hospitals fail to comply.

NCEPOD continues to be concerned about the accuracy of the numbers of deaths reported to it and as a result of last year's detailed comparison with Hospital Episode Statistics (HES) data, it will undertake a detailed audit in a small number of hospitals in the coming year.

Whilst NCEPOD has always requested information on deaths within 30 days of an operative procedure performed by a surgeon or gynaecologist regardless of the place of death, it has always been recognised that accurate information on deaths in the community has not been available. NCEPOD has provided evidence to both the Review of Coroner Services and the Shipman Inquiry this year in relation to death certification and it is hoped that a new method of ensuring a complete information set will be achieved in the future, although at the time of writing of this report the details have not yet been agreed.

The sample reviewed in detail during this period was of patients who died on the day of or within three days of an operation. This is a repeat of the data collected in 1994/95 [3] and, where appropriate,

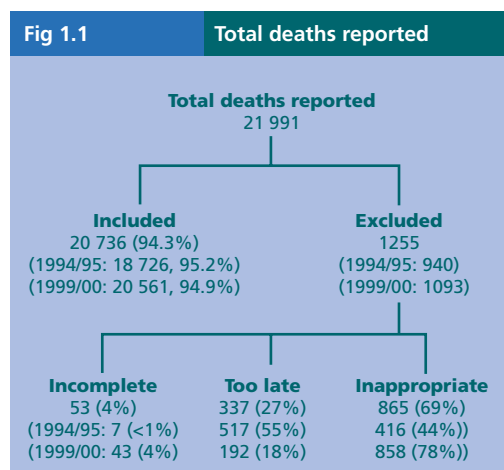
comparisons will be made both with that year and with last year. It should be noted however, that in order to ease the burden on clinicians, a detailed questionnaire was only sent for the first such death for each surgeon.

DATA COLLECTION

Data was requested from all hospitals in England, Wales, Northern Ireland, Guernsey, Jersey, Isle of Man and the Defence Secondary Care Agency. In addition, the majority of hospitals in the independent sector contributed data. Data was not collected from Scotland where the Scottish Audit of Surgical Mortality (SASM) performs a similar function.

GENERAL DATA ANALYSIS

Figure 1.1 shows that a total of 21 991 reports of deaths within 30 days of an operation were received. Of these, 1255 were excluded from further analysis: 865 were deemed inappropriate according to the NCEPOD protocol (Table 1.1 and Appendix E), 337 were received after the deadline and 53 remained incomplete despite efforts by NCEPOD staff to identify the missing information by close liaison with the hospital. This left 20 736 deaths to be used as the sample pool, which was a similar number to last year.



The number of reports received too late for inclusion has increased since last year and this is of concern to NCEPOD. Every effort is made to keep hospitals and trusts informed of progress by way of quarterly reports to the Medical Director and Local Reporter. Despite this, there has been a marked increase in reports not received within the timeframe allowed, which is some four months after the data collection ended.

Table 1.1 shows that there has been a further increase in the number of cases reported where the procedure was not performed by a surgeon, lending support to the extended remit of NCEPOD to cover physicians' interventions which takes effect from 1 April 2002.

Table 1.1		Inappropriate reports received and excluded		
Reasons for exclusion	2000/01	1994/95	1999/00	
Death occurred more than 30 days after a procedure	259	264	265	
Procedure not performed by a surgeon	383	50	319	
Duplicate report	175	41	161	
No surgical procedure performed or procedure excluded by NCEPOD criteria	48	52	110	
Other	-	9	3	
Total	865	416	858	

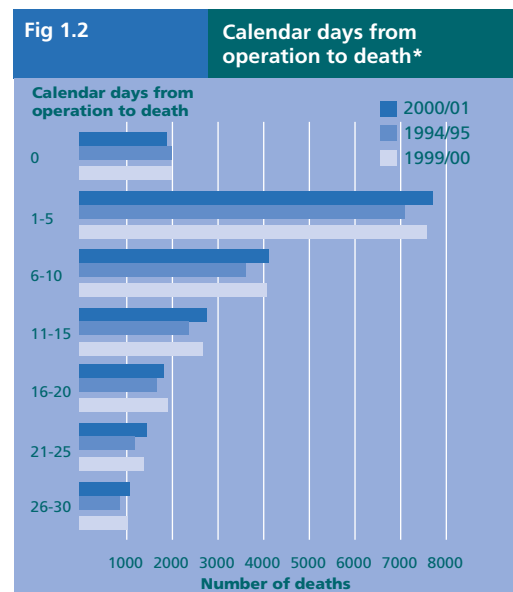
A breakdown of the remaining 20 736 deaths, by region is shown in Table 1.2. A trust or hospital (for the independent sector) breakdown is shown in Appendix A. As a result of regional boundary changes, no comparison to 1994/95 is given.

Table 1.2		Deaths reported to NCEPOD by region	
	2000/01	1999/00	
Eastern	1764	1809	
London	2718	2558	
North Western	2866	2754	
Northern & Yorkshire	3004	3183	
South Eastern	2758	2531	
South & West	2147	1834	
Trent	2077	2104	
West Midlands	1723	1895	
Wales	1017	1217	
Northern Ireland	399	360	
Guernsey	22	14	
Jersey	21	31	
Isle of Man	26	22	
Defence Secondary Care Agency	0	7	
Independent Sector	194	242	
Total	20 736	20 561	

NCEPOD continues to be concerned that all relevant deaths are not reported.

As reported last year, NCEPOD has little confidence that the number of reports received is a true reflection of the actual number of deaths that take place within 30 days of a surgical procedure being performed, and a comparison with HES in last year's NCEPOD report [2] highlighted this fact. It does not surprise NCEPOD to read in the NHS's own magazine that *...many hospitals don't even know what their body count is* [4]. NCEPOD has raised this issue for several years now and there is other evidence to support this [5]. The Audit Commission's management paper on health data published in March of this year has also pointed out the difficulties in the coding of cases, which will lead to invalid codes in HES and therefore poor information [6].

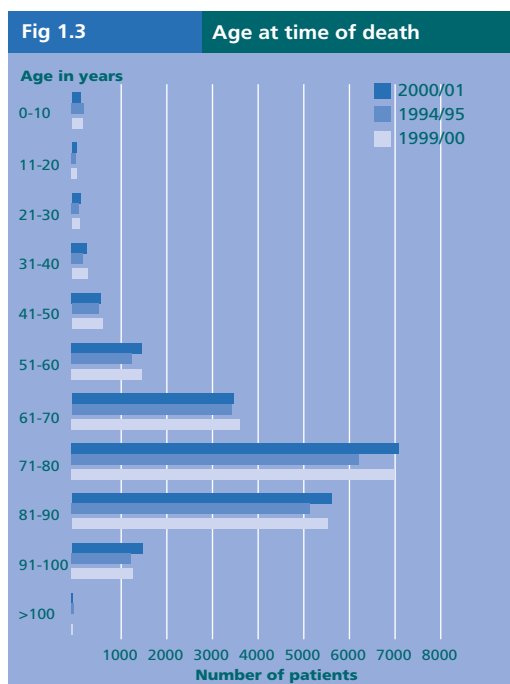
Figure 1.2 shows the distribution of the number of calendar days between operation (day 0) and death.



* Throughout this report the year 1999/00 stands apart as it is not a 3 day death sample.

Patients in this sample were older compared with previous years. This is reflected in the small but evident increase in the percentage of patients that die after their operation (Figure 1.3) who are over 70 years. This now stands at 69% of the total cases compared to 68% in 1994/95 and 61% in 1999/00.

The number of days taken for Local Reporters to inform NCEPOD of deaths is shown in Table 1.3. There is a decrease from 30% of deaths being reported within 29 days in 1994/95 to just 19% in 2000/01 that is difficult to understand. Variation in the length of time between hospitals is largely due to the different data collection methods used by Local Reporters. Whilst understanding constraints on the time available, a reduction in days taken to report deaths would undoubtedly be helpful both to



NCEPOD and to the local audit programme. The sooner questionnaires can be dispatched to clinicians the more likely it is that the medical records will be available, the case clearly remembered and the relevant clinicians still working at the hospital. In addition it allows more time for questionnaires to be completed and returned by the annual deadline of 31 December.

Table 1.3 Calendar days between deaths and receipt of report by NCEPOD

Calendar days (i.e. not 24 hour periods)	Number of deaths reported		
	2000/01	1999/00	1994/95
1-29	3872 (19%)	4330 (21%)	5547 (30%)
30-59	3975 (19%)	4213 (20%)	3915 (21%)
60-89	3495 (17%)	3277 (16%)	2733 (15%)
90-119	2188 (11%)	2089 (10%)	1800 (10%)
120-149	1586 (8%)	1581 (8%)	1146 (6%)
150-179	1391 (7%)	1179 (6%)	830 (4%)
180+	4229 (20%)	3892 (19%)	2757 (15%)
Total	20 736	20 561	18 728

From 1 April 2002, Local Reporters are being asked to return their details of deaths bi-monthly with the hope that this should improve the situation. It has also been suggested by NCEPOD that hospital information systems should be used to compile the death reports to ease the burden on Local Reporters.

SAMPLE DATA ANALYSIS

The detailed sample for 2000/01 was based around the first perioperative death reported for each consultant surgeon or gynaecologist, occurring on the day of surgery itself or within the next three calendar days. The day following the operation was counted as the first postoperative day. Using this method, each consultant surgeon or gynaecologist received a maximum of one questionnaire. From a total of 20 736 deaths reported to NCEPOD, the number of deaths falling within the first three days was 7184 (35%). (Figure 1.4).

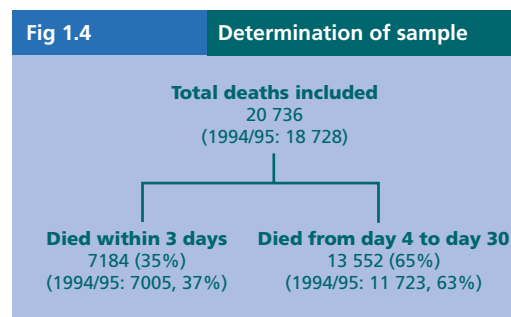
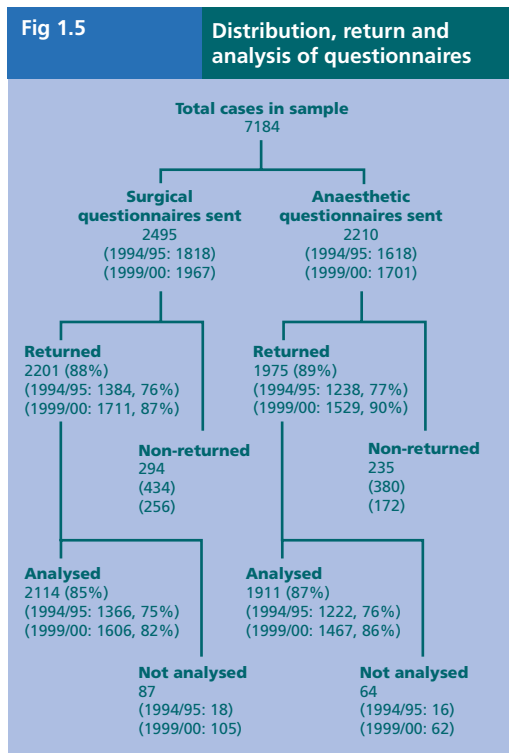


Figure 1.5 shows that 4689 surgical questionnaires were not sent, as NCEPOD had already been notified that in 80 cases the consultant had left the trust/hospital and in 4609 cases the consultant had already received one questionnaire.

In 5% of the sampled cases it was not possible to identify the supervising anaesthetic consultant.

In the 4974 cases where no anaesthetic questionnaire was sent, this was either because no surgical questionnaire was sent based on the one questionnaire per surgeon rule (4540, 91%), the consultant surgeon had left the hospital (94, 4%), the procedure was performed without an anaesthetist present (191, 7%), the name of the appropriate anaesthetic consultant was unobtainable (120, 5%), the name of the anaesthetist was notified too late (17, 1%), or NCEPOD had been notified that the appropriate consultant had left the trust/hospital (12, <1%).

Last year NCEPOD made special comment about the large number of cases where the name of the consultant anaesthetist supervising the trainee was not known. This should be recorded on the anaesthetic record. This is a fundamental failure by hospitals to ensure that all key personnel involved in the care of the patient are named.



2201 surgical questionnaires were returned (88%) and 1975 anaesthetic questionnaires (89%) were returned (Figure 1.5). These return rates are very similar to 1999/00 and an improvement on 1994/95. 87 surgical questionnaires were excluded from analysis for the reasons given in Table 1.4. Similar exclusions occurred for 64 anaesthetic questionnaires (Table 1.5). It is encouraging to see a slight reduction in excluded cases from last year, although it is interesting to note that in 1994/95 the exclusion rate was also very low.

Table 1.4 Reasons for exclusion of surgical questionnaires from analysis

Reason for exclusion	2000/01	1994/95	1999/00
Questionnaire completed for an earlier operation	24		57
Questionnaire received too late	58		40
Questionnaire incomplete	1		6
Questionnaire related to excluded procedure	3		2
Questionnaire completed for wrong patient	1		0
Total	87	18*	105

*Only total figure for exclusions available for 1994/95.

Table 1.5 Reasons for exclusion of anaesthetic questionnaires from analysis

Reason for exclusion	2000/01	1994/95	1999/00
Questionnaire completed for an earlier operation	13		25
Questionnaire received too late	47		34
Questionnaire incomplete	2		0
Questionnaire related to excluded procedure	1		1
Questionnaire completed for wrong patient	1		2
Total	64	16*	62

*Only total figure for exclusions available for 1994/95.

The response rates for each trust/hospital are shown in Appendix A. Individual trusts/hospitals are kept informed of their return rate on a quarterly basis so there is an opportunity to improve return rates where there are difficulties.

Table 1.6 Return rate of surgical questionnaire by specialty

	No of Qs sent	No of Qs returned	% of Qs returned	No of Qs analysed
Accident & Emergency	4	2	50	2
Cardiac/ cardiothoracic/ thoracic	175	143	82	133
General	1147	1032	90	999
Neurosurgery	116	94	81	89
Obstetrics & Gynaecology	58	50	86	46
Ophthalmology	18	17	94	16
Oral/ maxillofacial	9	9	100	9
Orthopaedic & Trauma	648	572	88	555
Otorhino-laryngology	60	51	85	46
Paediatric	24	23	96	23
Plastic	34	27	79	23
Spinal Injuries	1	1	100	1
Transplant	7	6	86	5
Urology	124	116	94	108
Vascular	70	59	84	59

Table 1.6 analyses the return rate of surgical questionnaires by the declared specialty of the surgeon. Some specialties are well below the average return rate of 88%.

Reasons for non-return of questionnaires

As can be seen in Table 1.7, there has been a small reduction in the number of questionnaires not returned because the patient's case notes were missing or unavailable. This is to be commended. It is NCEPOD's hope that this is due in a large part to an improvement in the storage and retrieval mechanisms for notes. However, we do in fact believe that this is because an increasing number of trusts/hospitals are utilising their Clinical Audit or Clinical Governance Departments to assist NCEPOD and more effort is being made searching for apparently missing notes. It is hoped that this trend will continue.

Despite missing notes some consultants go to great lengths to complete the questionnaires.

'I have been asked by Dr ... to help with your enquiries regarding this patient as he has now left this hospital to take up a post of a consultant anaesthetist elsewhere. I do apologise for the delay in returning your questionnaire but the medical notes have gone missing. I have tried to obtain as much of the information as I could from other records and also from memory.'

This is typical of the support that NCEPOD has received over the past fifteen years and it is this type of support that has made the Enquiry so successful.

	2000/01	1994/95	1999/00
Surgical questionnaires	<i>n</i> =2495	<i>n</i> 1818	<i>n</i> 1967
No reason given	189	323	182
Notes lost	45	78	41
Other reason	60	33	33
Anaesthetic questionnaires	<i>n</i> 2210	<i>n</i> =1618	<i>n</i> 1701
No reason given	148	212	101
Notes lost	63	125	50
Other reason	24	43	21

It is also to be commended that there has been a reduction in the number of questionnaires not returned without any reason since 1994/95. However, there is a minor increase in non-returned cases without a reason since 1999/00.

NCEPOD was interested in whether consultants were not returning questionnaires because they thought that the procedure was so minor that it

could not possibly have played a role in the cause of death (despite this not being the purpose of the NCEPOD study), or that the patient was elderly and there would be nothing to learn. We therefore looked at the age groups involved.

	0-20 years	21-40 years	41-70 years	71-80 years	80+ years
Surgical	5	7	54	55	68
Anaesthetic	5	5	48	37	53

NCEPOD is particularly concerned about the five surgical and five anaesthetic questionnaires not returned for patients under the age of 21 who died. This represented nine cases in total as there was just one case – that of an 18-year-old undergoing cardiac surgery – where neither the surgical nor the anaesthetic questionnaires were returned.

FACILITIES

The quality of data regarding facilities within hospitals is questionable.

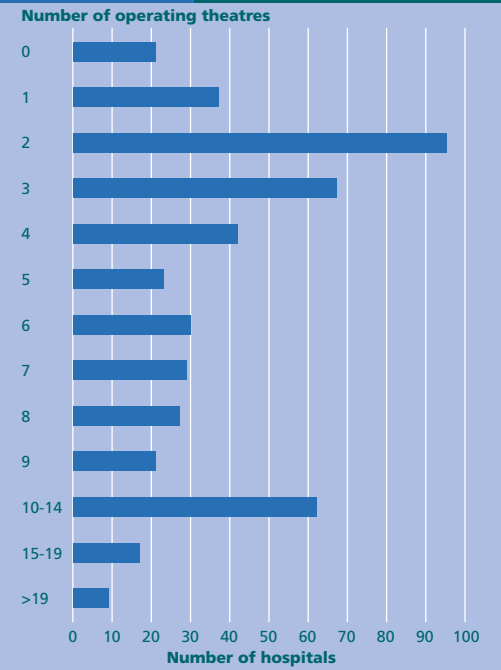
In April 2001, NCEPOD sent a separate questionnaire to chief executives at all hospitals (NHS and independent) asking about their facilities. This was in response to a suggestion that we should not be asking these questions of clinicians within the individual questionnaire. Although a return was requested for each hospital, 19 trusts could not provide the answers by hospital and therefore provided a combined return. As only 487 questionnaires were physically returned, this is the denominator used. 81% were returned (487/603). Two reminders were sent over a three month period. Questions were asked about a variety of facilities including beds, inpatient and accident and emergency activity, radiological, theatre and critical care resources. This information was used in two ways. Firstly, to assist Advisors in understanding the facilities available within each hospital when reviewing particular cases, and secondly, to allow NCEPOD to review the availability of facilities across hospitals. It is disappointing that the quality of some of this data is questionable and it is of great concern that some hospitals cannot readily provide accurate information.

Operating facilities

Operating theatres

NCEPOD asked how many operating theatres there were in the hospital. 99% (480/487) of respondents answered this question. Of those respondents 4% (21/480) had no operating theatres. 96% (459/480) had one or more operating theatres but 28% (132/480) had only one or two operating theatres. Figure 1.6 depicts the range of number of operating theatres. Reviewing hospitals with one or two operating theatres, 77 of them were private hospitals, but six of the 37 with only one theatre had more than 100 beds and five had an accident and emergency department. NCEPOD is concerned about the logistical difficulties of these hospitals providing out-of-hours medical cover, particularly for postoperative complications or emergencies.

Fig 1.6 The number of hospitals vs. the number of operating theatres



Recovery facilities

Lack of recovery beds in some hospitals may hinder theatre throughput.

NCEPOD asked hospitals with an operating theatre whether they had a recovery room and how many recovery beds/trolleys there were in the hospital. For 424 hospitals, NCEPOD could cross-reference the number of recovery beds to the number of operating theatres and so derive the number of recovery beds per theatre. This is shown in Table 1.9.

Table 1.9		Number of recovery beds per operating theatre
Number of recovery beds/theatre	No of hospitals in sample	
<0.5	4	
0.5-<1.00	56	
1.0-<1.50	177	
1.5-<2.00	87	
>2.00	100	
Total	424	

Hospitals tell us that they have problems with turning over operating lists because recovery is full and so patients have to be recovered in theatres. The current Modernisation Agency work on improving operating theatre performance [7] does

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not acknowledge this issue, yet it is a very real one. As part of the Who Operates When II study to be published in 2003, NCEPOD has sought to determine the extent of this problem. Certainly there is a guideline for new buildings that recommends that the number of recovery spaces should be calculated from the number of cases and the average time spent in recovery. It proffers a rule of thumb of two recovery beds per operating theatre [8]. It must be recognised that if there are insufficient recovery spaces for the number of operating theatres working, patients cannot be transferred out of the theatre at the end of the procedure and operating lists will be delayed, possibly resulting in cancellation of patients on the day of operation. One of the factors included in the performance rating for hospitals is the number of patients cancelled on the day of operation.

Only 46% (196/424) of recovery units were staffed 24 hours, 7 days/week. For the remainder, hospitals were invited to explain their out-of-hours recovery arrangements. In some hospitals, arrangements were not indicated as no out-of-hours emergencies were undertaken although NCEPOD is aware that there will be some patients who are not recovered in normal working hours even though their operation will have been performed within core time. Many hospitals did not specify their arrangements. Most of those that did specify their arrangement had an on-call theatre team, the training of which was not specified. One hospital stated that their team may not include a dedicated recovery nurse. Three hospitals stated that recovery was by the anaesthetist.

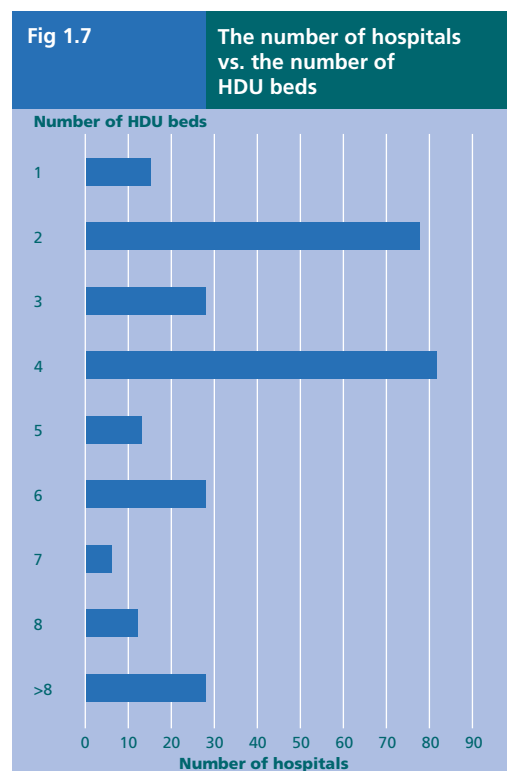
NCEPOD has previously expressed concern about the arrangements for the recovery of patients out-of-hours when the recovery facility is not formally staffed [2]. Hospitals should note the recommendations of the Royal College of Anaesthetists [9] and ensure appropriate arrangements for the recovery of patients at all times.

Critical care facilities

High Dependency Units (HDU)

61% (297/487) of hospitals had an HDU, 38% (185/487) had no HDU and five hospitals did not answer the question. Over the years, NCEPOD has been reporting an increase in the number of HDU beds. However, the increase has been slow and in 1999/00 [2] 31% of patients reviewed were treated in a hospital that had no HDU facility. The 7% discrepancy between this year's findings and

last year is due to the fact that the data presented is on facilities in all hospitals, not those available to patients who died. Included in these are some hospitals where a HDU may not be indicated e.g. those without operating theatres or undertaking only minor surgery. NCEPOD recognises that a HDU is not indicated in all hospitals but it certainly is for those hospitals admitting patients for intermediate or major surgery. For those hospitals with a HDU, the range of size is indicated in Figure 1.7.



93 hospitals had small units comprising one or two HDU beds. Seven of these hospitals had between 400 and 499 beds and nine were hospitals of over 500 beds.

Where a HDU existed, it was part time, i.e., not available 24 hours a day, 7 days a week, in 13% of hospitals (40/297). In 32 of these it was open either for booked admissions only or as required. In one it was only open Monday to Friday 07.30 to 16.00. One can only imagine the difficulties of relocating patients at the end of each day. Is it hoped that they recover sufficiently to go to a ward by 16.00? This must create difficulties of relocating patients at the end of each day and significantly interfere with the smooth running of the hospital and its delivery of health care.

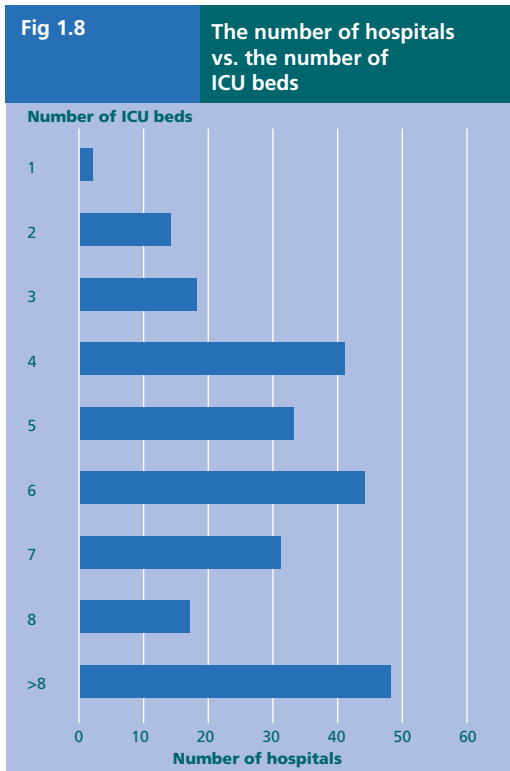
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Intensive Care Units (ICU)

There were 59 ICUs with one or less funded consultant sessions per day.

53% (258/487) of hospitals had an ICU, 46% (225/487) had no ICU and four hospitals did not answer this question. The high number of hospitals without an ICU was not anticipated, as almost uniformly there is an ICU in the hospital of the final operation of patients reviewed by NCEPOD. 117 (117/225) of these were private hospitals, 51/225 had over 100 beds and of these 7/225 had over 300 beds. The 46% of hospitals that have no ICU accords numerically with the 45% of hospitals with three or fewer operating theatres. For those hospitals with an ICU, the range of ICU size is indicated in Figure 1.8.

It is a recommendation of a recent working party of the Royal College of Physicians that units without critical care services should not admit acutely ill medical patients[10].



Of the hospitals with an ICU, 86% (223/258) had funded consultant sessions, 12% (30/258) had no consultant sessions and five hospitals did not answer this question. ICUs with no funded consultant sessions are of concern. It is difficult to see how a satisfactory standard of care can be provided in an ICU without supervision from a consultant trained in intensive care medicine and this may result in

medico-legal consequences. Indeed, the Intensive Care Society [11] states that there should be a minimum of ten fixed consultant sessions a week and a minimum of five flexible sessions for out-of-hours emergency and on-call commitments.

71% (185/258) of hospitals with an ICU supplied information on the number of funded consultant sessions each week and these are presented in Table 1.10. 32% (59/185) of these ICUs had less than seven funded consultant sessions per week, i.e. less than one per day. Who is supervising the patients on a day to day basis? No matter how this data is interpreted, it is an inescapable fact that at least a third of hospitals have inadequate funded consultant sessions for ICU.

It should be noted that 21 of these are in the independent sector. As more NHS patients are being treated in the private sector the same standards of care must apply. The National Minimum Standards Regulations [12] say that whilst a patient is in a level 2 or 3 critical care facility (i.e. ICU/HDU) then the consultant responsible for their care should visit the patient a minimum of twice daily. However, the experience required of this responsible consultant is not specified. The same guidelines also say that a designated resident medical practitioner, who has the adult advanced life support certification, should be on duty at all times. Is this level of care sufficient?

Table 1.10	
The number of funded consultant ICU sessions vs. the number of hospitals	
No. of funded sessions per week	No of hospitals
0	30
1	2
2	2
3	1
4	6
5	11
6	7
7	9
8	9
9	8
10-14	96
>14	34

There is a need to monitor the type of operations undertaken in hospitals with limited or no critical care facilities. In hospitals with a small or part time HDU as their only critical care facility, there is a need to ensure the maintenance of critical care skills of the nursing and medical staff.

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