Royal College of Anaesthetists

National Audits

I - Supervisory role of consultant anaesthetists

II - Place of mortality and morbidity review meetings

Report Version 16

Contents

1. Introduction

The Royal College of Anaesthetists carried out two national audits during 2003. This work builds on their 2000 publication, *Raising the Standard; a Compendium of Audit Recipes*.[1] The College's choice of topics reflects some of the findings of the 2002 NCEPOD report '*Functioning as a team*?' [2]

Audit one investigated the supervisory role of consultant anaesthetists. The aims were to explore the role that consultant anaesthetists play in supervising other anaesthetists; to ascertain prevalent beliefs and practice; and to investigate the scope for improvement.

Audit two investigated the place of mortality and morbidity reviews. The aims were to explore the role that anaesthetists play in M&M meetings and the value they obtain from them; to ascertain prevalent beliefs and practice; and to investigate the scope for improvement.

Anaesthesia audit coordinators and NCEPOD assessors contributed to the development, piloting and execution of these audits, backed up by a steering group and a small specialist team at the University of Manchester.

2. Principal findings

1. Forty-three percent of anaesthesia departments in the UK hospitals took part in the two audits

2. Randomly selecting 10% of hospitals and asking for a high response rate was not worthwhile

3. We received 2297 questionnaires from the 135 departments which took part

The anaesthesia record

4. Most departments (75%) believe their anaesthesia chart enables adequate recording of anaesthesia personnel

5. Improvements in anaesthetic records are seen as highly desirable, including addition of fields to record grade of trainee, logging handovers and details of supervising consultant and prior discussions

Supervisory role of consultant anaesthetists

6. Few departments have written guidance on supervision policy

7. Few departments have guidelines for management of ASA 3, 4, or 5 patients

8. The most frequently encountered system to allocate supervisory responsibility to consultants involves doubling up a consultant with a capable trainee so as to enable a rapid response

9. Most trainees and NCCGs are highly satisfied with the supervision and training they receive

10. Most consultants are not free (whether through being accompanied or being free from clinical duties) to provide immediate assistance to those they are supervising. Consultants can find the conflicting demands very difficult when not provided with such support

11. The main reasons for involving a consultant are advice on preoperative anaesthesia assessment, sick patients and complex cases, and children

12. Judging from the one-week audit period, about one third of non-consultants need practical assistance from a consultant, less than 10% have to hand a case over, and fewer than 2% report that consultant input is needed but not obtainable soon enough

Place of mortality and morbidity reviews

13. Most anaesthesia departments (74%) have a system in place to enable identification of deaths related to anaesthesia; and most have mortality and morbidity review meetings

14. Only half of anaesthesia departments have a nominated person to review deaths

15. Around half of anaesthesia departments have a formal system for taking on board learning from NCEPOD (or SASM in Scotland)

16. Most anaesthetic departments (93%) have a system in place to report critical incidents

17. Good attendance is reported at M&M review meetings from all grades of staff

18. Consultants value M&M review meetings. Lessons learned are the major benefit

19. Proposed improvements to make M&M review meetings more effective are: joint meetings with surgeons; an open and blame-free culture; constructive criticism; learning from incidents.

3. Background and methods

3.1 Exploratory phase

Before embarking on the audits, so as to gain understanding of issues underlying the two subjects for audit, we set up several discussion panels of interested audit coordinators, clinical directors and NCEPOD assessors; all business being conducted by email. These panels, together with other experts we approached, assisted us with …

- mapping current audit needs in anaesthesia
- defining what makes a successful anaesthesia audit
- exploring the feasibility of proposed topics
- clarifying wider expectations from the project
- creating a new IT infrastructure including electronic data transfer
- setting up a regular dialogue with all audit coordinators.

Intelligence gathered from the expert panels was endorsed by the project's formal steering group.

The approach we used, inspired by the Delphi technique, involved questions that become more focused as issues emerge and are clarified.[3] We also provided these groups with the information available to us about standards and references relevant to each topic (Appendix 6.1). Members of the expert panels assisted with crystallising the aims and design for each audit, and four panellists kindly piloted questionnaires for us.

3.2 Audit one: supervisory role of consultant anaesthetists

NCEPOD (2002) found that a consultant, who could be clearly identified as responsible, was not always traceable when trainee anaesthetists undertook elective lists. The exploratory phase suggested that there are wide variations in the level of supervision provided from place to place. Our expert panel concluded that significant variation in attitudes, organisational systems, tolerance of risk and threats to quality may lie behind this original NCEPOD finding. We agreed that the detailed aims for audit one should be:

(1) To explore the role consultant anaesthetists play in supervising other anaesthetists
(2) To ascertain the beliefs, (professed) practice and possible scope for improvement, from three viewpoints:
    a. the formal or official position as portrayed by the clinical director or deputy, usually the audit coordinator
    b. the perspective of the consultants providing supervision
    c. the perspective of those supervised - both anaesthetists in training and non-consultant career grades (NCCGs).

3.3 Audit two: place of mortality and morbidity review

NCEPOD (2002) stated "… *it is unacceptable that anaesthetists did not review 57% of deaths*." Our expert panel suggested that many anaesthetists may not regularly attend or contribute to formal mortality and morbidity (M&M) reviews, and

may attach little value to the learning that comes from M&M reviews in their own workplace. The aims for Audit Two were determined to be:

(1) To explore the role that anaesthetists play in M&M meetings and the value they obtain from them

(2) To ascertain the beliefs, (professed) practice and possible scope for improvement, from two viewpoints:
   a. The official department position (from clinical director or deputy)
   b. The perspective of consultants.

3.4 Carrying out the audits

Questionnaires were developed and piloted in September 2003. By the end of October 2003, the audits were ready to be rolled out nationally. Audit coordinators were provided with questionnaires and instructions; and asked whether they wanted to take part.

We randomly selected a 10% sample of anaesthesia departments and encouraged this group to achieve 100% coverage, offering additional assistance with data handling as a subtle incentive.

Data were collected using three questionnaires (see appendix 6.2)

- Tool one – for consultants
- Tool two – for non-consultants (trainees and NCCGs)
- Tool three – giving the official departmental position.

For audit one, tools 1 and 2 collected data to:

- establish identity and role details
- explore attitudes to supervision, its value and importance
- explore trainees' and NCCGs' own experience of induction relating to supervision
- explore consultants' own views on their normal supervisory role
- track respondents through a one week experience of supervising or being supervised.

Tool 3 collected data on the official departmental position relating to:

- anaesthesia charts
- supervisory systems and policies in place.

For audit two, tool one collected data on:

- consultants' contribution to and experience of Morbidity and Mortality reviews
- their perceived value of these reviews.

There was no non-consultant component to audit two. Tool Three collected data on the official departmental position relating to:

- systems in place for morbidity and mortality review
- their perceived value.

Audit coordinators managed the local level tasks of distributing, collecting and collating paperwork, and returned completed questionnaires to the University of Manchester; and sent us a copy of their anaesthetic record to allow us to understand its content. They also used a checklist to ascertain numbers of …

a. consultants, trainees and NCCGs working in their hospital
b. questionnaires distributed to each group
c. questionnaires returned.

Departments were offered an electronic database in which to enter questionnaires, so as to be able to produce results locally. When this offer was accepted (16 sites), we either received both electronic and hard copies (7 sites) or an electronic audit return only (9 sites).

The majority of audit coordinators returned questionnaires by the end of January 2004, though some material continued to reach us until June 2004. Because of the large volume of data and the loss of key staff from the project team at a critical point in the project, a professional data entry company was employed to input questionnaires onto a database. The company employed industry standard quality assurance processes, such as double data entry on 5% of questionnaires. The data preparation stage over-ran by approximately three months.

4. Results

4.1 List of Tables and Figures

4.2 Coverage and data

i. Participating anaesthesia departments

Anaesthesia audit coordinators and clinical directors were contacted (315 departments) and invited to take part in the audit; and 135 departments (43%) indicated that they wished to do so. Some audit coordinators who did not take part in the audit wished to be involved in future Royal College audits. Most participating audit coordinators (90%) stated that their intention was to aim for 100% coverage.

ii. Participating anaesthetists

We asked coordinators to ascertain numbers of questionnaires issued and returned. We calculated coverage rates in each hospital.

Table 1: Anaesthesia department coverage, by questionnaire type

Coverage banding	**<20%**	**20–39%**	**40-59%**	**60-79%**	**80-99%**	**100%**	**No info**	**No trainees**	**Total Depts**
Tool one: consultant questionnaires	2	29	33	35	14	10	12		135
Tool two: non-consultant questionnaires	21	36	22	19	10	11	10	6	135

Table 1 shows the numbers of anaesthesia departments in each coverage banding. Many departments achieved high response rates, with most achieving over 50%. Response rate for consultants was higher than for non-consultants. In participating anaesthesia departments, mean response rate was 55% for consultants and 44% for non-consultants. Around 20% of anaesthesia departments deserve particular praise for achieving very high coverage of over 80%.

We explored the impact of our request to achieve a particularly high coverage in a 10% random sample of departments. We over-sampled, expecting an approximate 50% compliance, and therefore approached 35 randomly selected hospitals asking for high coverage. In the event, 18 (51% of those approached) decided to take part in the national audits.

Table 2: Coverage level for "high return" subgroup

	"High return" group	**Remainder**	**% in "high return" group**
Return > 75%	5	25	16.6
Return 25-75%	9	78	10.3
Return < 25%	0	9	0
No checklist	4	6	40
Total (= 135)	18	118	13.2

Table 2 shows the coverage level for this “high return” subgroup, compared with the remainder. The 18 departments approached regarding a high return, amount to 13% of the sample. There may be a very small compliance effect at the top end of coverage but this is unlikely to be significant, since had only one department acted differently, the results would show no impact at all of the request to achieve high coverage.

iii. Data available to us

We received 1315 tool one questionnaires from consultants, 720 tool two questionnaires from trainees, 252 tool two questionnaires from NCCGs and 131 tool three questionnaires from anaesthesia departments. Further details of those completing questionnaires are in Tables 3 and 4, and Figure 1.

Table 3: Details of anaesthetists responding

	Not a Locum	**Locum**	**Not specified**	**Totals**
Tool one, consultants	1237	46	32	1315
Tool two, trainees	658	17	45	720
Tool two, NCCGs	227	15	10	252
Tool two, not stated			10	10
Totals	**2122**	**78**	**97**	**2297**

Table 3 shows that the majority of trainee and NCCG anaesthetists who responded were permanent members of staff. Locums made up a very small percentage (3.6%) of the total sample.

Table 4: Details of trainees responding

SHO 1	**SHO 2+**	**SpR 1**	**SpR 2-3**	**SpR 4-5**	**No grade stated**	**Total**
166	181	93	141	129	10	720

Figure 1: Grade of trainee

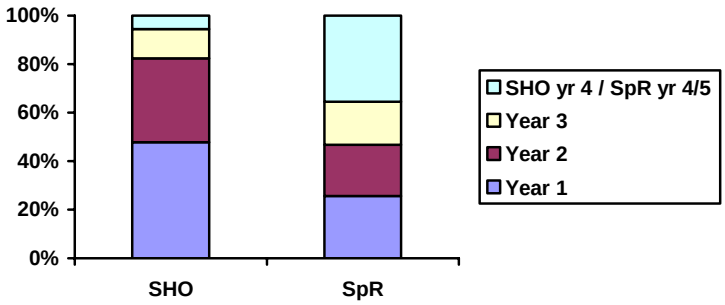


Table 4 and Figure 1 show that trainees responding were evenly spread over the training years.

4.3 Audit one: supervisory role of consultant anaesthetists

i. Anaesthesia chart information

Data on this issue came solely from tool three (the official anaesthesia department position). We sought information on perceived general adequacy of anaesthesia charts for recording names and roles, details on names and roles that might ideally be recorded in the future, and prospects for improvement.

Q1: Do you think that, in general, your anaesthesia chart adequately records the anaesthesia personnel involved in every case?

Tool 3 – official department view

Table 5: Believe anaesthesia chart adequately records personnel

	Number (%)
Yes	95 (75%)
No	31 (25%)
Blank	5
Total	131

Ninety-five departments out of 126 (75%) report that they believe their anaesthesia chart enables adequate recording of the anaesthesia personnel involved in every case (Table 5).

Q2: Indicate by writing **"Yes" or "No"**, if your anaesthesia chart prompts recording of the following **at present**; and whether you think it should - ie. **desirable**

Tool 3 – official department view

Table 6: Anaesthesia chart content

	Presently Records	**Desirable**
Name of main anaesthetist providing care	98%	
Grade of primary anaesthetist (+ year for trainees)	21%	82%
Primary anaesthetist locum or permanent	4%	60%
Details of anaesthetist handed over to	19%	85%
Name of consultant anaesthetist providing supervision	29%	82%
Supervising consultant involved in discussion of case	32%	93%
Supervising consultant present during case	61%	92%

The data field on anaesthesia charts that is universally present (Table 6) is the name of the anaesthetist providing care. Over 60% of charts also enable recording of the name of the supervising consultant when present during the case.
Other details (grade, locum status, degree of involvement of supervising consultant, handovers of care) are seen as desirable; but these data fields are rarely provided on the chart to prompt recording of these details.
Recording of prior discussion with supervising consultant, is the field scoring highest amongst the ideas proposed for collecting more detail on anaesthesia personnel.

Q3: What additional improvements would you say need to be made so as to record the anaesthetist's role and contribution?
Tool 3 – official department view

Thirty-two of the 131 respondents provided proposed improvements to the anaesthetic record regarding identities and roles. The most commonly suggested data fields for the future would enable recording of…

- Informed consent obtained for anaesthetic procedures
- Identity of anaesthetist seeing patient preoperatively
- More detailed preoperative information
- Information given to patient by anaesthetist.

ii. Policies in place

Data on this issue comes both from tool two (trainees and NCCGs) and from tool three (the official anaesthesia department position).

We sought information on provision of written guidance relating to supervision and accountability.

Q4: Does your Anaesthetic Department have written guidance on consultant supervision for Trainees / NCCGs?
Tool 3 – official department view

Table 7: "We provide written guidance on our supervision policy"

	Yes	**No**	**Blank**	**Totals**
For trainees	58 (48%)	64 (52%)	9	131
For NCCGS	23 (21%)	87 (79%)	21	131

Just under half of departments report that they have written guidance on consultant supervision for trainees. Only 21% have written guidance on consultant supervision for NCCGs, (Table 7). When written guidance on consultant supervision is available, this is normally provided at induction. Guidance may only cover children and ASA 3-5 cases. A few respondents mentioned the Royal College as a source of guidance.

Q4: When you joined the anaesthetic department in which you are now working, were you given an introductory/induction session or other similar process?

Tool 2 – trainees/NCCGs

Q5: Was the department policy on accountability to consultants explained?

Tool 2 – trainees/NCCGs

Table 8: Induction to department (trainees + NCCGs considered together)

	Yes	No	Don't know	Blank	Totals
Induction session given	739	200	28	15	982
Policy on accountability to consultants explained	347	437	179	19	982

Most trainees (86%), but fewer NCCGs (44%), report having had an induction session on joining the anaesthetic department (Table 8). It seems that departmental policy on accountability to consultants is explained to only a minority (about 40%) of non-consultants. Of the 347 (trainees and NCCGs considered together) who had the department policy on accountability explained, 117 (34%) had received a written copy.

Q7: Are written guidelines for the management of the following patients available ASA3; ASA4; ASA5?

Tool 2 – trainees/NCCGs

Table 9: Availability of guidelines for ASA 3-5 patients

	Yes	No	Blank	% Yes
ASA 3	147	668	167	18
ASA 4	186	635	161	23
ASA 5	186	631	165	23

Guidelines for the management of ASA 3, 4 or 5 patients are only available in around 20% of hospitals (Table 9).

iii. Supervisory system in place

Audit coordinators were asked about the systems in use in their departments for ensuring consultant supervision of trainees and NCCGs who are doing solo elective lists.

Q4: Systems for allocating consultant responsibility to cover trainee solo elective GA lists, vary enormously. Please indicate which model below most closely matches your own system or describe your own) if there is no close match.

Tool 3 – official department view

Table 10: Supervisory system

System in place	Number
1. "Starred"consultant for the session or for the day who does a routine list; doubled up with a trainee thereby enabling rapid response to trainees' or NCCGs' needs	61
2. "Starred"consultant for the session or day who is covering emergency theatres; and is generally - but not always - free to respond to trainees' and NCCGs' needs	31
3. A named consultant covers trainees and NCCGs who are doing solo lists, each knowing clearly who the other is; and precisely what is going on at any time	13
4. Consultants can generally be found when needed; but there is no allocation system for consultant supervision	28
5. The named consultant for the session or day has no other duties and is always free to respond to trainees' and NCCGs' needs, but may not know all that is happening	8
SUBTOTAL – NUMBER OF SYSTEMS DEFINED	141
6. We don't see providing consultant supervision for solo trainees or NCCGs as a problem	7
7. We don't have any trainees	3
8. We don't have any NCCGs	10

Some of these supervisory allocation systems are capable of coexisting in one hospital. There are therefore more systems (141) than there are respondents (131), (Table 10). Most departments appear to have a supervisory system in which there is a duty consultant, also frequently referred to as the "starred consultant" or "underlined consultant", who may do a routine list working with a competent trainee; thereby enabling rapid response to needs of those supervised.
Audit coordinators frequently report that in their hospital there are very few solo trainee lists, since there is essentially a consultant service.
A very small minority of hospitals have no system in place for explicit supervision. Most of these stated that the issue is being addressed.

iv. Workload over a five-day audit period

We asked consultants and non-consultants about their elective theatre sessional workload in our five-day audit period.

Q2&3: For the 5-day period, how many elective sessions in theatre did you do? Of these how many were: i) Solo consultant lists? ii) lists with trainee or NCCG attached? iii) other?

Tool 1 - consultants

Q8,9,11 &12:: For the five-day period, how many elective theatre sessions did you do? How many elective lists were solo trainee lists? How many patients were ASA 4?
How many labour ward sessions did you do? Did you have direct consultant supervision for these labour ward sessions?
How many ICU sessions did you do? Did you have direct consultant supervision for these ICU sessions?

Tool 2 – trainees/NCCGs

Table 11: Elective theatre sessions per week, consultants

	Mean	Median
Consultants - trainee or NCCG attached	2.7	5
Consultants - solo sessions	2.8	2
Consultants - total sessions	4.8	6

Table 12: Elective theatre sessions, non-consultants

	Mean	Median
Trainee or NCCG - elective theatre sessions	4.0	4
Trainee or NCCG - solo lists	1.8	1
Trainee or NCCG - attached to consultant	2.6	2

Consultants do an average 4.8 elective theatre sessions per week whilst trainees and NCCGs considered together do 4.0 (Tables 11 and 12). Solo lists appear to run at 1.8 per week for trainees and NCCGs considered together. Means in the tables for attached lists and for unattached lists do not add up to equal the value for total lists, because of blanks.

We investigated further the working pattern of non-consultants, in respect of solo elective theatre sessions.

Table 13: Non-consultants. Total and solo sessions during 5-day audit

	Elective theatre sessions							
	Total			Solo			Doctors	Sessions
	mean	range	IQR	mean	range	IQR	Average % of solo	Solo as % of total
Trainees	4.1	0-10	2-6	1.1	0-10	0-1	30%	28%
NCCGs	4.9	0-8	3-7	3.4	0-8	2-5	74%	72%

Whether one focuses on doctors or on sessions, there are markedly different patterns of solo working between trainees (mean 1.1 sessions per week) and NCCGS (mean 3.4 sessions per week), (Table 13). Some trainees however had a well above-average proportion of solo working.

v. Views and feelings on supervision issues

We asked consultants and non-consultants their views on the issue of supervision. Sentiments that were put to the test largely emanated from the email panel discussions, which were then converted into statements in the questionnaires. Respondents were asked to state their agreement or disagreement, or neither, using a five point scale.

Table 14 shows strongly held beliefs that a strong chain of supervisory command is desirable and largely in place; but the sentiment about every NHS patient having a named consultant anaesthetists is less of a landslide, particularly amongst trainees. About half - approximately - of consultants seem not to be clear on their exact supervisory responsibility at all points in time. Table 15 also suggests that a

number of consultants are uneasy about supervisory responsibility which is not explicitly about patients known to them or for whom they are directly providing care.

Table 14: Views on supervision - sentiments agreed with

Sentiment	**Consultants agree…**	**Non-consultants agree…**
There should be an identified consultant anaesthetist responsible for every solo trainee elective list	1094(84%)	841(87%)
Trainees in this hospital are well supported by an identified consultant anaesthetist when they do solo elective list	855(67%)	541(57%)
Every NHS patient should have a clearly identified consultant anaesthetist	763(59%)	418(44%)
NCCGs in this hospital are well supported by an identified consultant anaesthetist when they do a solo elective list	522(46%)	-
When our trainees are anaesthetising ASA 4 patients, they are well supported by an identified consultant anaesthetist	1166 (92%)	525(84%)Trainees
When our NCCGs are anaesthetising ASA 4 patients, they are well supported by an identified consultant anaesthetist	825 (73%)	179(74%) NCCGs
I always know which solo trainee elective lists I am supervising	562(45%)	
I am a final year trainee (otherwise leave this blank), and now feel prepared to supervise others, with occasional advice from a consultant		88(95%)

Table 15: Views on supervision – sentiments disagreed with

Sentiment	**Consultant's disagree…**
Unless a trainee contacts me for advice, I am generally unaware that I am providing supervision	596(47%)
It is acceptable for consultants to take ultimate responsibility for a trainee without personally seeing the patient	730(56%)
Ultimate responsibility for solo elective trainee lists lies with the clinical director/lead clinician rather than with an identified consultant anaesthetist	735(57%)
I am only content to supervise trainees when they accompanying me on my own theatre list	885(69%)

We also asked trainees about direct consultant supervision for labour ward and ICU for those involved during the audit period including their views on whether trainees felt supported during these sessions (Table 16). There was a lower level of direct consultant supervision on labour wards with 33% of non-consultants feeling unsupported during labour ward sessions.

Table 16: Non-consultant direct consultant supervision

Session type	Direct consultant supervision for non-consultants	Number of non-consultants responding	Yes - I am well supported by an identified consultant anaesthetist
Labour Ward	123 (46.8%)	263	496(67%)
ICU sessions	249 (92.6%)	269	686(85%)

vi. Consultants as supervisors

Consultants were asked whether they had supervisory responsibility for trainee colleagues and NCCGs.

Q5: Do you have supervisory responsibility for SpRs, SHOs and NCCGs?

Tool 1 - consultants

Table 17: Consultants' supervisory role

Role	Yes	No	Blank
Supervises SpRs	1133 (90%)	127 (10%)	55
Supervises SHOs	1131 (89%)	140 (11%)	47
Supervises NCCGs	816 (68%)	389 (32%)	13

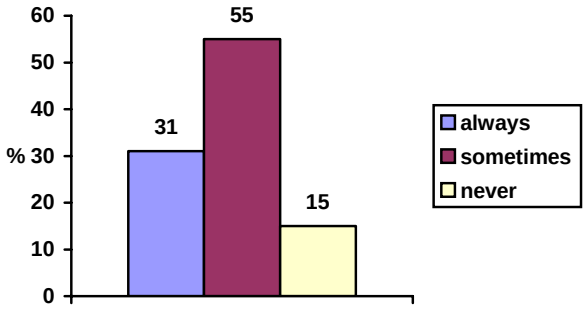
Most consultants have supervisory responsibility for trainees and non-consultant career grades (Table 17). Some departments do not currently have trainees or NCCGs.

Consultants were asked whether they were freed from clinical duties when providing supervision to non-consultant grades.

Q6: When you are providing supervision for trainee and NCCG lists, are you accompanied or freed up from clinical duties, to allow for you to provide immediate assistance in theatre? (always, sometimes or never)

Tool 1 - consultants

Figure 2: Ability to provide supervision



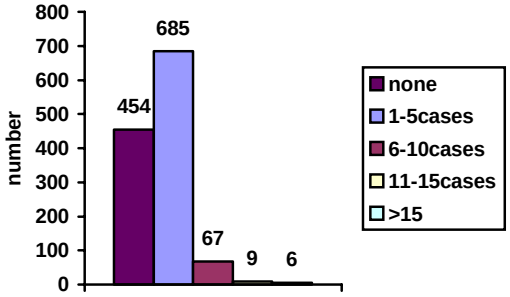
Only around 30% of consultants have freedom, whether through being accompanied or being free from clinical duties, to provide immediate assistance to those they are supervising (Figure 2). Most report that they are sometimes (55%) or never (31%) free to provide immediate assistance to junior colleagues.

During the five-day audit period, consultants were asked how many cases undertaken by junior staff were discussed with them.

Q8: During this five-day period, how many cases being undertaken by junior staff were discussed with you?

Tool 1 - consultants

Figure 3: Number of cases discussed with consultant



Most respondents had discussed between 1-5 cases during the audit week (Figure 3).

vii. Reasons for requiring consultant input

Consultants were asked what the main reasons were for the trainee requiring their input during the audit period.

Q9: In your experience, what are the main reason(s) for a trainee needing your consultant input? (please insert other reasons if you wish).

Tool 1 - consultants

The main reasons for involving a consultant as reported by the consultant were a sick patient, a complex case or a child (Table 18).

Table 18: Reason for consultant's input - reported by consultant

Reason	often	sometimes	rarely	Blanks
Sick patient	836	386	17	76
Complex case	772	438	23	82
Child	539	368	205	203
Preoperative anaesthetic assessment	228	700	254	133
Critical Incident	213	520	425	157
Problem in anaesthetic room e.g. airway management	97	663	428	127
Special expertise needed e.g. unusual blocks	96	575	478	166
Problem in theatre e.g. siting epidural	88	739	349	140
Equipment difficulty	46	307	766	196
Problem in recovery e.g. pain and PONV	38	404	711	162

Trainees were asked to provide the main reasons for involving a consultant.

Q14: During this 5-day period, what do you feel were the main reasons for involving a consultant anaesthetist. Please add new reasons whenever you wish. Please indicate number of cases next to each reason

Tool 2 – trainees/NCCGs

Table 19: Number of cases for which a consultant was involved, reported by trainees/NCCGs

Reason	1-3	4-6	>7	0 cases	blanks
Complex case	222	28	8	49	675
Sick patient	181	12	3	57	729
Child	105	18	10	76	773
Preoperative anaesthetic assessment	93	30	12	60	787
Special expertise needed e.g. unusual blocks	55	7	2	79	839
Problem in theatre e.g. siting epidural	39	1	0	77	865
Critical Incident	24	0	0	84	874
Problem in anaesthetic room e.g. airway management	22	0	0	83	877
Problem in recovery e.g. pain and PONV	18	0	0	81	883
Equipment difficulty	9	1	0	83	889

The main reasons that non-consultant anaesthetists involved a consultant was for a sick patient, a complex case, advice on a preoperative anaesthetic assessment and care of a child (Table 19).

Consultants were asked whether they needed to take over the care of a patient or running of a list during the five day period.

> **Q10&11:** Did you need to take over the care of a patient and/or running of a list from a trainee or NCCG list during this 5-day period? If **yes**, for how many patients (insert number)? Please provide details of your involvement….
>
> Tool 1 - consultants

Table 20: Take-over of list by consultant

	Number (%)
Yes	108 (8.6%)
No	1152 (91.4%)
Blanks	55

Only a small percentage (8.6%) of consultants had to take over from a non-consultant during the audit period (Table 20). The main reasons for intervening as reported by the consultants are in Table 21. Operational and logistic reasons appear to come first, followed as before by complex cases and children.

Table 21: Reason for intervening

Reason	**Number**
Breaks/ finished shift/ needed elsewhere	15
Complex patient	13
Paediatric case	12
Siting spinal /epidural	6
ASA IV	6
Difficulty intubation	6
Post op management	4
ITU	4
Massive blood loss	4
Cardiac arrest	3
Preop assistance	2
Laryngospasm	1
Sedation	1

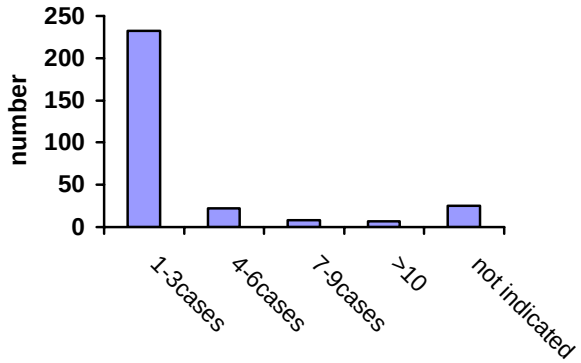
Trainees and NCCGs were asked whether, in the one week audit period, a more senior anaesthetist was needed to provide practical assistance for any case.

Q15,16&17: In this period, did you need a more senior anaesthetist need to provide practical assistance for any case? If **yes**, for how many cases (insert number)? Please give details of what input was needed and who (include grade) provided it?

Tool 2 – trainees/NCCGs

Around a third of non-consultants, (296 out of 892 or 33%) needed practical assistance from a consultant. Of this 296, the majority of respondents only needed assistance for 1-3 cases during the audit week (Figure 4).

Figure 4: Number of trainees requiring assistance



Non-consultants provided details of the input needed from a consultant colleague during the audit period. We condensed this data into themes (Table 22). Regional blocks, children and sick or complex cases again top the list. Some trainees state that elective lists involving children or unusual blocks were normally supervised by consultants. Many respondents also report that having the consultant present or nearby results in them feeling more comfortable. Some SHOs report that they never work alone.

Table 22: Reason for involving consultant anaesthetist

Anaesthetic problem	**Number**
Assistance siting epidural/spinal	43
Assistance with a child	36
Sick patient or complex case	34
Difficult airway or intubation	35
Consultant presence always required	31
ASA 3 or 4 patient	29
Assistance with block	32
ITU involvement	21
Cardiac anaesthetist required	17
Post operative management problem	8
Assistance at induction	7
Second opinion re cancellation	7

Fibreoptic intubation required	5
More than one patient needing care	4
Phone advice re management of patient	4
Obese patient	4
Management of laryngospasm	3
Advice on drug management	3
Inter-hospital transfer issues	2
Preoperative management	3
Assistance with neurologically impaired patient	2
Assistance with chronic pain management	2

Trainees and NCCGS were asked whether, in their opinion, consultant input had been needed during the audit period but was not obtainable soon enough.

Q18,19&20: During the week, was there any situation where a consultant's input was needed but not obtainable soon enough, in your view? If **yes**, for how many cases (insert number)? Please provide brief details of what input was needed and why assistance was not obtainable.

Tool 2 – trainees/NCCGs

Less than 2% of respondents (17 of 917) report that consultant input is needed but not obtainable soon enough. The help needed for these 17 anaesthetists is as follows:

- Assistance with obese patient (3)
- Assistance with ASA III and IV patient (3)
- Failure of block (2)
- Discussion of case (2)
- Needed to do inter-hospital transfer whilst acute cases also needed to be done. Consultant on call refused to come in, therefore trainee had to do them late in the night on return (1)
- Epidural (1)
- Induction (1)
- Child (1)
- Obstetric anaesthesia assistance required and consultant on-call not obstetric trained (1)
- Bradycardia and near cardiac arrest (1)
- Reason not stated (1)

viii. Trainee suggestions: improvements in supervision

Trainees and NCCGs were asked about potential improvements of supervision of solo elective trainee lists by consultants.

> **Q21:** In your opinion, does anything need to be done to improve supervision of solo elective trainee lists by consultants in your current hospital, and if so, what?
>
> Tool 2 – trainees/NCCGs

This question was answered mainly by trainees rather than NCCGs, probably because supervision issue are more regularly discussed with trainees. Responses have been categorised into main themes (Table 23). Many trainees said they were happy with the level of supervision that they were currently receiving, claiming to be well supported and well supervised. A named consultant and more discussion with consultants top the list of definitive issues raised in this question.

Table 23: Improvements in supervision suggested by trainees

Suggested Improvements	Number (n=403)
Already well supported, excellent supervision	103
Named consultant needed	83
No improvements required	69
Already have identified consultants	24
More opportunity needed to discuss with consultant and better 'moral support'	23
More support required as not well supported	20
Trainees requesting more solo elective lists	18
Improved communication between anaesthetic medical staff	15
More consultants	14
Improved support on labour ward	9
Prompt arrival of consultant when called for	9
Support for consultants so as to enable supervision	5
More trainees to do trainee list	4
Consultant to carry bleep enabling trainees to get hold of consultant	4
Better ITU cover when designated consultant away	3

Trainees' comments further illustrate issues they feel need addressing.

"A named consultant who is not tied up during lists should be available for assistance maybe covering 2-3 trainees"

"*A named consultant for lists rather than checking who is available next door*"

"Decrease the number of solo lists done by SHOs, I did 5 out of 10 sessions solo"

"More solo elective trainee lists, at present I do one list in 15 days"

"The introduction of a new shift rota – opportunity for training and learning for more experienced trainees is limited and needs addressing"

"Trainee would benefit more if first year was allocated mainly to concentrate on general anaesthetic skills and in 2nd year trainee should have postings of 3 months on different attachments"

"Problem with isolated theatre sites, maybe a dedicated supervisor at the end of a phone would be enough."

Consultants were asked for any further comments they wanted to make on the supervisory role of consultant anaesthetists.

Q13: Do you have any further comments to make on the supervisory role of consultant anaesthetists?

Tool 1 - consultants

Comments most frequently received were…

- The difficulty in supervising while doing other lists
- Trainees do need to be supervised and it is essential that they know that there is a named consultant.
- When help is needed from the consultants, it is usually required immediately.

Consultants' comments further illustrate issues they feel need addressing.

"*I do not think the terms 'support', 'supervisory' and 'responsibility' have been addressed in our hospital*

"It is increasingly difficult to leave a patient and rescue a junior in the next theatre"

"To attend a trainee is trouble – usually have to leave my own patient"

"Would like the College to develop more formal guidance on supervising roles"

"Concerned at current position on lack of supervision nationally"

"You can only look after one case at a time"

"We baby-sit too much, trainees need more solo lists."

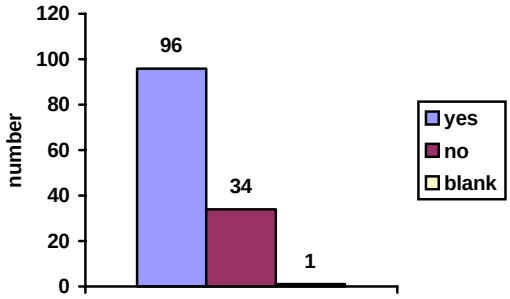
4.4 Audit two: place of mortality and morbidity reviews

i. Mortality and morbidity systems in place

Audit coordinators were asked about their departmental system for identifying deaths related to anaesthesia**.**

Q18: Does your department have a system in place which enables identification of deaths related to anaesthesia? If **yes**, briefly what system do you have?
Tool 3 – official department view

Figure 5: System in place for identification of deaths



The majority of departments (96 or 74%), report having a system in place which enables the identification of deaths related to anaesthesia (Figure 5).

The main systems that the departments have in place are:

- Multidisciplinary M&M meetings
- Audit meetings
- Critical incident system
- Reporting via NCEPOD coordinator
- SASM (Scottish Audit of Surgical Mortality)
- Individual anaesthetists informed by surgeon.

Audit coordinators were asked who was responsible for reviewing deaths relating to anaesthesia within the department.

Q9: In your hospital, does someone review all deaths related to anaesthesia? If **yes,** what is their role or title?
Tool 3 – official department view

Table 24: "Someone reviews all deaths"

	Number (%)
Yes	64 (49.6)
No	65 (50.4)
Blanks	2

Around half of the audit coordinators report that someone in their hospital reviews all deaths related to anaesthesia (Table 24).

Various members of staff review the deaths related to anaesthesia, including the NCEPOD coordinator or equivalent, the audit coordinator and a nominated consultant anaesthetist (Table 25).

Table 25: Identity of staff reviewing deaths related to anaesthesia

Role	**Number**
NCEPOD/ SASM or M&M co-ordinator	15
Consultant anaesthetist	11
Audit coordinator	10
Clinical governance lead	7
Clinical director	6
Risk manager	3
Critical incident lead	2
Associate medical director	1
Consultant critical care	1
NCCG	1
Trainee	1
General manager	1
Mortality grading committee	1

Audit coordinators were asked if a formal system exists in their hospital for learning from NCEPOD or SASM (in Scotland) reports.

Q10: Is there a policy or formal system to take on board learning from NCEPOD (or SASM) in your hospital?

Tool 3 – official department view

Table 26: System for learning from deaths related to anaesthesia

	Number (%)
Yes	68 (53)
No	61 (47)
Blanks	2

Around half of departments have a formal system for taking on board learning from NCEPOD (SASM in Scotland), (Table 26).

ii. Critical incident systems in place

Audit coordinators were asked about systems in place to learn from critical incidents**.**

Q11: Do you have a system in place to learn from critical incidents? If **yes**, briefly what system do you have?
Tool 3 – official department view

The majority of hospitals (122 or 93%) have a system in place to learn from critical incidents. The most common system in place is filling in CI forms and discussion at regular audit or M&M meetings. Some hospitals mentioned a trust-wide critical incident reporting system, including critical incidents being reviewed by a clinical risk consultant. Several respondents also referred to the Royal College critical incident form.

iii. Frequency of meetings

Audit coordinators were asked about frequency of mortality and morbidity meetings within their department.

Q13: Does your department have anaesthetic–related mortality and morbidity meetings. If so, what is the frequency?
Tool 3 – official department view
Tool 1 – consultants (**Q14**)

Figure 6: Frequency of M&M meetings – audit coordinators' response

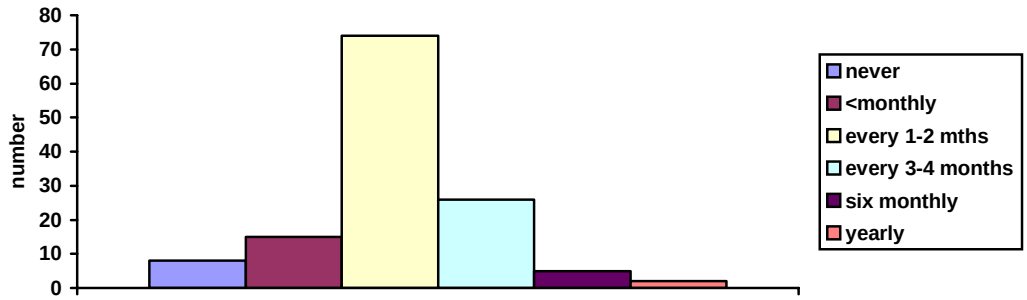
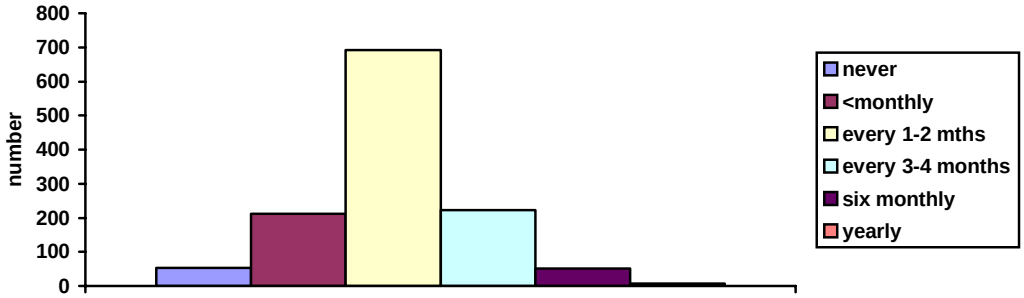


Figure 7: Frequency of M&M meetings- consultants' response



The frequency of anaesthetic-related mortality meetings in departments is every 1-2 months, with only 8 departments (6.1%) indicating that they never had M&M review meetings (Figure 6 & 7).

Audit coordinators were asked about attendance by anaesthetists at the M&M review meetings.

Q14: Approximately what percentage of your anaesthetists would you say regularly attend the M&M review meetings?

Tool 3 – official department view

Table 27: Reported attendance of anaesthetists at M&M meetings

	Mean
% attendance of consultants	64%
% attendance of trainees	61%
% attendance of NCCGs	63%

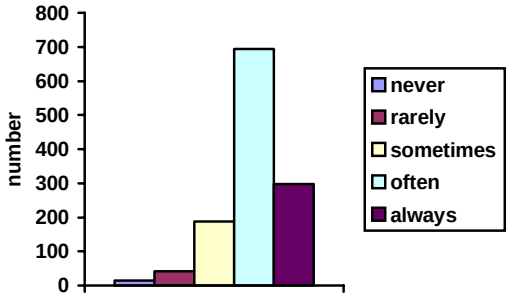
Of the 123 departments who regularly have M&M review meetings, around 60% of anaesthetists are believed regularly to attend (Table 27). Seven departments (5%) report that less than 25%of consultants attend and 10 departments (8%) report that less than 25% of trainees attend

Consultants were asked how often they attend the mortality and morbidity review meetings.

Q15: If your department has Mortality and Morbidity review meetings, how often do you attend them?

Tool 1 - consultants

Figure 8: Frequency of attendance by consultants at M&M meetings



The majority of the consultants state that they regularly attend these meetings regularly (Figure 8).

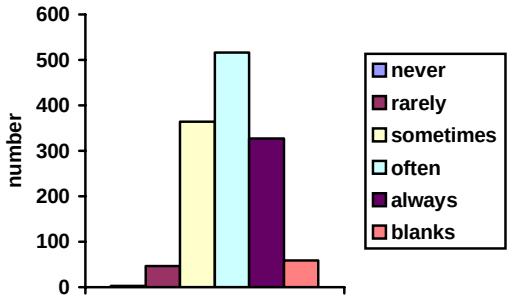
iv. Perceived usefulness of M&M meetings

Consultants were asked for their opinion on the value of M&M review meetings.

Q16: Do you feel your Mortality and Morbidity review meetings are useful?

Tool 1 - consultants

Figure 9: Rating of usefulness of M&M meetings by consultants



Perceived usefulness of these meetings varies, with most consultants reporting that the M&M review meetings are often useful (Figure 9).

Consultants were asked to provide an opinion on specific benefits that they believe arise from attending M&M meetings.

Table 28: Perceived value of M&M meetings, consultants' viewpoint

	Number
Lessons learned	77
Learning from mistakes and mishaps	39
M&M meetings are excellent	36
Feedback and discussion	28
Teaching and learning for trainees	28
Benefit from multidisciplinary involvement	24
Improved care and practice	21
Identifying system problems and failures	21
Limited value	20
Improvement in communication	16
Difficulty to fit in around work	9
Monitoring quality of practice	9
Highlighting difficult cases	9
Don't have them	6
Depends on who is present	5
Change of practice	4

The key benefits that consultant reported from having M&M meetings were the lessons that are learned from hearing about individual cases (Table 28). Some specific comments from consultants on the value of M&M meetings were:

"*Excellent learning opportunity when used correctly*"

"*One can learn from near mishaps and mistakes. It allows for sharing of problems and solutions and exploration of others' practice. It is very valuable from an education and training aspect, both for trainees and consultants"*

"Under reporting is common due to fear of adverse criticism".

Audit coordinators and clinical directors were asked their opinion on the value of M&M meetings. The majority of respondents report them to be of value, in particular to review standards of care and quality of practice. Some however feel even though they may be seen as valuable in generating discussion, that there is no real action or change in practice as a result of M&M reviews. They commented that sometimes M&M meetings are difficult to organise jointly with surgeons.

v. Joint M& M Meetings

Audit coordinators were asked whether their departments have M&M meetings, jointly with surgeons.

Q15: Does your department have joint meetings with surgeons to review mortality cases? Please give your opinion on their value

Tool 3 – official department view

Eighty out of 129 (62%) of anaesthetic departments have M&M meetings jointly with surgeons, to review mortality cases.

vi. Improvements resulting from mortality and morbidity reviews

Consultants were asked whether, as a result of M&M meetings, problems had been discovered or corrected.

> **Q18&19:** Do you think that as a result of your M&M reviews, problems have been discovered or corrected? Please briefly give details.
>
> Tool 1 - consultants

Table 29: Impact of M&M review

	Yes	No	Not applicable	Blanks
Discovered	972 (88%)	135 (12%)	72	136
Corrected	877 (84%)	165 (16%)	85	188

The majority of consultants reported that M&M reviews resulted in problems being discovered and corrected (Table 29).

Table 30: Type of anaesthetic problems discovered or corrected

Anaesthetic problem	Number
Equipment problem or failure	50
Lack of essential equipment	19
Drug mishap or drug error	18
Failure of preoperative workup	17
Communication failure	15
Inadequate protocols	15
Inadequate supervision of trainees	13
Change in anaesthetic practice needed	12
Mismanagement of patients	12
Epidural complications	12
Staffing shortage	10
Failure of post-operative monitoring or management	8
Training need identified	7
Organisational issues	7
No critical care availability	5
Inadequate monitoring	2

Equipment problems followed by drug hazards, top the list of learning points from these meetings (Table 30). Some specific comments from consultants were:

"Drug errors are reduced by standardising contracts for purchasing drugs"

"Better equipment is needed on the difficulty airway trolley"

"We need to improve the protocol for ward management of epidurals"

"Monitoring of epidurals in wards needs improving"

"We need a change of manufacturer for our circle tubing as it keeps tearing"

"There is inadequate handover between anaesthetists"

"We have inadequate preoperative assessment"

"There is delay in the delivery of cross-matched blood to theatre".

Anaesthesia departments were asked to provide examples of improvements that had occurred as a result of M&M reviews.

Q16: Please give two examples of improvements that members of your department have made, as a result of mortality and morbidity reviews?

Tool 3 – official department view

Audit coordinators and clinical directors report a number of improvements in anaesthetic practice as a result of the mortality and morbidity reviews such as:

- Alterations to policies (i.e. NSAIDs, drug regimes)
- Paediatric equipment review
- Improved pain management
- Reinforcement of policies (supervision policy; transfer protocol)
- New guidelines introduced (i.e. epidurals; blood transfusion)
- Improved follow up care
- Equipment changes
- Better preoperative care
- Improved communication
- Drug storage changes
- Dedicated consultant for emergencies.

These respondents were asked what improvements a better M&M system might make.

Q17: Please suggest any two improvements that a better M& M review system might give to practising anaesthetists?

Tool 3 – official department view

Suggested improvements are:

- Better monitoring
- Learning from critical incidents and encouraging reporting
- Introducing a 'no-blame' culture
- Identification of risks
- Detailed post-operative follow up and care
- More time for preoperative assessment
- Anonymity
- Keeping track of trends in morbidity and mortality
- Improved accountability and follow up of incidents
- Closer supervision
- Early anaesthesia involvement in patient care.

Some respondents feel that many of the big issues for improvement within anaesthesia have already been identified, but that making improvements to avoid recurrence of problems that occurred is difficult or impossible.
Some anaesthetists feel that they often do not hear results of post-mortems; or do not get the complete information about the death of a patient whose care they were involved in.

Consultants were asked for their opinion on what is needed to make M&M systems more effective.

Q20: In your opinion, what is needed to make M&M systems effective. Please give any examples of good practice you've come across.
Tool 1 - consultants

The key issues in making M&M systems effective identified by consultants are:

- Receiving intelligent and useful feedback
- Learning more with actual case presentation
- Conducting joint meetings
- Ensuring anonymity
- Achieving an open and blame free culture
- Enabling better data collection of incident
- Discussing near misses as well as M&M
- Improving reporting of M&M cases
- Having regular meetings
- Identifying lead for M&M meetings
- Receiving adequate time off for meetings
- Making such meetings compulsory.

In order to understand consultants' feelings on this subject, they were asked to consider the extent to which they would agree or disagree with certain sentiments.

Table 31: Consultants' perceptions of M&M meetings

	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**	**Blanks**
Every anaesthetic and surgical death should be reviewed by an anaesthetist in my hospital	547(43%)	497(39%)	113(9%)	93(7%)	15(1%)	50
Joint meetings between anaesthetists and surgeons to review deaths are important	592(46%)	609(48%)	61(5%)	15(1%)	3(2%)	35
In our Mortality and Morbidity review meetings, I have freedom to speak openly	589(48%)	540(44%)	55(5%)	21(2%)	10(1%)	100

The majority of respondents feel that every anaesthetic and surgical death needs to be reviewed by an anaesthetist. There is even stronger agreement with the sentiments relating to the value of joint M&M review meetings with surgeons. Although 92% of those responding feel free to speak openly, we note 100 blanks, which are hard to interpret (Table 31).

5. References

1. Royal College of Anaesthetists. *Raising the standard: A compendium of audit recipes*. London: RCoA; 2000.

2. National Confidential Enquiry in Patient Outcome and Death. *Functioning as a Team*. London: NCEPOD; 2002.

3. Linstone HA, Turoff M. eds *The Delphi Method: Techniques and Application*. Reading, MA: Addison-Wesley Publishing Company, 1979.