Anaesthetists’ skills are used throughout the hospital…
• anaesthetists are directly involved in the care of two-thirds of patients, underpinning £10 billion of income
• advances in anaesthesia allow shorter stays and more day surgery
...but rapidly rising costs and a fall in the patient care provided by trainees are putting pressure on services.
• the number of consultant anaesthetists increased by 41 per cent between 1986 and 1996
• more than half the trusts surveyed report a shortage of consultants and one in five has been unable to solve the problem
• the cost of locum consultant anaesthetists has grown to £6 million
There is often a mismatch between resources, skills and need…
• on paper, most clinical sessions have a consultant’s name written against them, but legitimate absence means that on average one-third of planned sessions, and most out-of-hours care, is provided by less senior doctors
• consultants should ensure that patients with complex anaesthesia needs are not anaesthetised by unsupervised trainees

...and the quality of patient care can suffer.
• one in three patients do not meet the anaesthetist before entering theatre or do so for only a few minutes
• patients should receive good quality written information about anaesthesia and pain relief
• to prevent patients from suffering pain after surgery better multidisciplinary teamworking is needed, even in the 57 per cent of hospitals that have acute pain teams

Trusts must review the way that anaesthetists’ time is used…
• the resources that trusts invest in maternity and chronic pain services vary greatly, without clear evidence about the effects on patients
• managers and anaesthetists should work with purchasers to review the balance between surgical and non-surgical services
...and improve their management arrangements.
• clinical directors are best-placed to co-ordinate the agenda, but many lack the time or power to achieve all the changes recommended
• directorates and individual anaesthetists need to work and communicate effectively with other hospital specialties

Rapidly rising anaesthetist costs prompt important questions about whether the NHS can afford this rate of increase, and whether enough new anaesthetists can be supplied year after year. To ensure effective care for patients, a national debate is needed to decide whether consultants’ contracts should change and who might provide anaesthesia in the future.
The building blocks of an anaesthesia service

1. Anaesthetists are doctors whose clinical skills are used throughout the hospital [BOX A]. They are directly involved with two-thirds of patients, underpinning £10 billion of income at a pay cost equivalent to 3 per cent of this sum. While there are many good things about the current arrangements, the NHS still faces important challenges. The way that anaesthesia services are organised varies considerably, with a 15 per cent difference between the top and bottom quartiles in the staff costs of clinical sessions, and a 77 per cent difference between trusts at the extremes.

2. The number of consultant anaesthetists increased by 41 per cent between 1986 and 1996. One way to reduce cost pressures and ease consultant recruitment difficulties is to make good the reducing service contribution of trainees by increasing the number of non-consultant career grade doctors. If such staff are employed, they should be deployed only for work appropriate to their levels of skill and experience. The grade mix must take account of both supervision and the need to provide a quality service. Trusts can also ensure that consultant anaesthetists are contracted to deliver the maximum number of clinical sessions recommended under national terms.

3. The majority (62 per cent) of trusts have experienced a shortage of consultant anaesthetists over the past five years. The national picture is patchy but, on average, trusts with shortages had 13 per cent of posts vacant. Two-thirds of trusts affected say that they have been successful in solving their shortage of consultant anaesthetists over the past five years. The national picture is patchy but, on average, trusts with shortages had 13 per cent of posts vacant. Two-thirds of trusts affected say that they have been successful in solving their

[BOX A]

Anaesthetists work throughout the hospital

Anaesthetists’ special clinical skills are used throughout the hospital. They:

1. are needed at all planned and emergency operations where a general anaesthetic is used, to allow surgery to take place (and administer most local anaesthetics also);
2. advise on or are involved in the preparation of surgical patients and the relief of pain and side-effects afterwards;
3. often take the lead in managing patients in intensive care units (ICU);
4. play an important part when women are giving birth (for example, administering epidurals for pain relief, and providing anaesthesia at caesarean section operations);
5. work with patients with long-standing debilitating pain (chronic pain management), and usually lead acute pain teams;
6. play a major role in cardiac-arrest ‘crash’ teams;
7. provide pain relief and anaesthesia for patients with major trauma in accident and emergency departments;
8. sedate, ventilate or manage the airway of some patients undergoing radiology and radiotherapy procedures;
9. provide anaesthesia and pain relief for some dental patients; and
10. provide anaesthesia for psychiatric patients receiving electro-convulsive therapy (ECT).

Source: Audit Commission, based mainly on publications by the Royal College of Anaesthetists and Association of Anaesthetists
recruitment problems, but in some cases this has incurred extra costs. The one in five trusts that has a shortage and has not solved the problem may lose contract income and will find it difficult to schedule enough operations, offer a full epidural service for mothers or staff chronic pain clinics.

4. Differences in the grade mix of operating theatre staff, in staffing levels, and in the degree to which trusts merge the previously separate roles of operating department assistants (ODAs) and anaesthetic, theatre and recovery nurses will all contribute to the costs of the service. The barrier between nurses and ODAs - with each group having their own basic training and qualification processes - makes it difficult for trusts to use available staff flexibly.

5. Some anaesthetists have delegated tasks that do not make the best use of their time, such as the preoperative gathering of patient history and test information, to others. They have also delegated other parts of their work to nurses - who set up patient-controlled analgesia in recovery, and work in acute and chronic pain teams - and to midwives who top up epidurals.

While these measures are unlikely to reduce the number of anaesthetists needed, they do reduce unnecessary stress for consultants and help to ensure that they can spend their time on work that makes the best use of their skills and experience.

6. Trusts can make savings on equipment and drugs via competitive tendering, standardising and bulk-buying, basing purchases on total lifetime costs, and making use of cost-efficient ‘low-flow’ methods of delivering anaesthetics.

Matching skills to surgical patients’ needs

7. On average, only a small proportion of operating sessions are cancelled because no cover is available for an absent anaesthetist. But although, on paper, most clinical sessions have a consultant’s name written against them, legitimate absence means that one-third of planned consultant sessions are provided by trainees or non-consultant career grade doctors. Many consultants go out of their way to try to cover for absent colleagues, but arrangements generally depend on good will, and can be a hit and miss affair. Some trusts provide better cover by, for example, expecting consultants to work an extra session in the future if one of their own is cancelled, and by including variable sessions in the job plans of some consultants to cover absences.

8. Each patient should be anaesthetised by someone with the experience and skills to match their needs. But some complex patients are anaesthetised by trainee doctors either because surgery is performed at night when consultants are on-call but not in the hospital, or during the day when trainees are covering for consultant absences.

9. Trusts should agree guidelines about which grade of anaesthetist is appropriate for each level of complexity and ensure that only genuine emergencies are operated on at night. This accords with recommendations made by the National Confidential Enquiry into Perioperative Deaths (NCEPOD). Less than one in three trainees knew of guidelines in their trusts and few directorates systematically audit whether doctors actually follow guidelines. Consultants should take active responsibility for ensuring that more trainees and non-consultant career grade doctors follow procedures designed to deliver a safe service.
The quality of surgical patients’ anaesthesia care

10. Efficient ways of admitting patients – often on the day of surgery, both for day case patients and inpatients – can cause problems for anaesthetists and risk leaving patients anxious and ill-informed. One in three patients either do not meet the anaesthetist before theatre at all, or do so for only a few minutes [EXHIBIT 1A]. Problems are compounded when anaesthetists cannot find patients quickly [EXHIBIT 1B] or get little advance warning of who is on the list. Written information and guidelines that prompt staff about what to tell patients at each stage, along with rules about recording what they have been told so that omissions can be rectified, can improve matters.

EXHIBIT 1A
Anaesthetists’ contact with patients before their operation
One-third of patients either do not meet the anaesthetist before theatre at all, or do so for only a few minutes.

EXHIBIT 1B
The main reasons are that many patients are admitted only on the day of surgery, and because anaesthetists cannot find patients quickly.

Source: Audit Commission study sites; 539 consultant anaesthetists’ questionnaire replies from 45 trusts. Patients’ replies from seven trusts report similar visit lengths.
Some trusts have found that a small investment in an acute pain team can make a long-lasting and substantial improvement to the management of postoperative pain.

11. Some hospitals are better than others at controlling pain after surgery because they achieve good collaboration between surgeons, anaesthetists and nurses. Too many patients suffer pain after surgery because of poor co-ordination. Trusts need to recognise the importance of training ward nurses who are best placed to monitor patients’ changing pain levels.

12. Some problems arise because individual clinicians do not use best practice pain relief methods, and because the mechanisms for helping staff to change their practice are weak. Problems also arise because of inequity in the availability of resources. For example, patient-controlled analgesia (PCA) pumps allow the patient to self-administer small amounts of analgesic at frequent intervals. But the number of patients using PCA varies between trusts to a degree that is unlikely to be entirely explained by patients’ choice or by suitability.

13. Some trusts have found that a small investment in an acute pain team can make a long-lasting and substantial improvement to the management of postoperative pain. Acute pain teams can offer leadership, expert advice and training. Today, 57 per cent of UK hospitals have formal acute pain teams, as compared with 1990 when only a handful had them. Purchasers and trust boards need to take a more strategic view of pain management. But purchasers often remain unaware of the issue, and specific standards on pain relief are rare in the contracts of either health authorities or GP fundholders.
Deciding priorities between surgery and other anaesthesia services

14. Trusts vary greatly in the amount of anaesthetic resources that they invest in the non-surgical services, without clear evidence about the outcomes for patients. (Anaesthetists’ work in intensive care units is the subject of a separate Audit Commission study, due for publication at the end of 1998.) The two non-surgical areas of their work considered in this report are anaesthesia for obstetrics and chronic pain services.

- Mothers: Information about caesarean section and epidural rates can assist trusts in their decisions about staffing levels, but nationally sponsored research is needed to establish evidence based standards for staffing.

- Chronic pain: In some trusts contract income does not cover the cost of even the limited services provided. Most clinics are providing some procedures that have been shown by science to be ineffective. But effective chronic pain clinics can provide relief for a needy and neglected group of patients, and should reduce costs in primary care and elsewhere in the service.

Leadership and change

15. The report sets out a challenging agenda for change [BOXES B and C, overleaf]. But in many trusts clinical directors have too little time, and in others too little power, to make changes. Changing consultants’ contractual arrangements may be the way forward, allowing for more flexibility in defining commitments than the present job plan allows, and linking with the development of appraisal systems. These problems are not unique to anaesthesia directorates, and pose wider questions for the NHS as a whole.
The 50 hallmarks of a value-for-money anaesthesia directorate

What does a high quality anaesthesia directorate look like? One that has few of the problems outlined in the preceding chapters, obviously. Anaesthesia directorates can use this Audit Commission summary as a checklist for self-audit:

**Ensures good quality**
- provides a high standard of anaesthesia and analgesia;
- sets clear standards and values that take into account guidelines issued by the Royal College of Anaesthetists, Association of Anaesthetists, General Medical Council and other relevant bodies;
- develops evidence-based guidelines, audits achievement, and acts to ensure compliance with guidelines;
- has good written information for patients about the different types of anaesthetic (general, local, regional), pain and the side-effects that can be expected and what will be done to alleviate them;
- makes sure that every patient receives the right written information, either by providing it directly or ensuring that the admitting nurse does so;
- develops a system to ensure that priority patients receive a visit by the anaesthetist of adequate length;
- ensures that ward or day unit nurses have been trained to discuss the basics of the anaesthetic and pain-relief techniques likely to be used, especially when admitting regimens restrict the time that anaesthetists can spare to talk to patients; and
- ensures that subconsultant doctors do not anaesthetise complex patients.

**Plans ahead**
- has an up-to-date business plan with time-limited objectives that are assigned to specific individuals;
- plans costed responses to developments in surgical and other directorates’ plans;
- plans how to meet future costs – for example, assesses whether New Deal costs could be met by reducing costs due to session cancellations;
- plans response to expected changes in patient numbers in each care group;
- considers how the trust can meet the demands of the New Deal and Calman; and
- calculates the trade-off between investment in different services when anaesthetists are in short supply.

**Communicates effectively with its own and other staff**
- communicates effectively with its staff;
- links with other directorates (for example, sends lead consultants to other directorates’ meetings);
- has a forum for encouraging and discussing feedback from those directorates that see themselves as ‘users’ of the anaesthesia directorate’s services;
- has good ongoing communications with surgical secretaries about list changes and planned absences, allowing for re-scheduling and reduction of cancellations;
- informs anaesthetists if their expenditure on agents and drugs is different from the average;
- has written agreement with surgeons about their responsibilities for monitoring and relieving pain throughout the patient’s stay and at home afterwards; and
- trains nurses and trainee surgeons in pain relief.

**Matches staff resources to contracts**
- helps the trust to employ the range of skills needed to deliver anaesthesia and pain relief services throughout the hospital;
- analyses the anaesthesia event-rate in maternity and provides an appropriate number of consultant sessions;
• agrees contracts for chronic pain that match resources input; and
• monitors activity against contracts.

Is a good employer
• appraises consultants and other staff, linking personal development needs to those of the directorate and the trust;
• involves trainee and non-consultant career grades in audit;
• creates a culture that allows part-time working and other good recruitment and retention techniques;
• has tried other options for reducing shortages – for example, linked posts with universities, paying for extra sessions;
• offers high-quality training;
• keeps actual trainee doctor hours to New Deal requirements;
• offers non-consultant career grades continuing education opportunities, and monitors the quality of their work;
• works with the medical director to develop a set of job plans with as close to seven clinical commitments per anaesthetist as possible;
• designs a template that translates contracted commitments into an efficient rota that provides sufficient solo and directly supervised lists for trainees;
• devises on-call systems of reasonable frequency and intensity;
• controls incremental drift;
• has optimal ODA/anaesthetic nurse grade mix and staffing levels;
• looks to minimise expensive temporary staff costs (locums, agency);
• has a policy on ODA enhanced roles, and has explicit reasons for extending roles; and
• has progressed on ODA/theatre nurse multi-skilling.

Covers absences
• keeps session cancellations to the bare minimum;
• meets standards for advance notice about absences, allowing sessions to be re-scheduled;
• contracts some anaesthetists to provide unallocated sessions, to cover for absences; and
• ensures that session complexity matches the skill of the cover anaesthetist.

Develops a sound physical environment
• provides modern equipment in each theatre that ensures safety without excessive duplication or downtime in usage;
• has procurement and maintenance plans that reduce costs via tendering and single-supplier volume-purchase discounts;
• has a formulary which includes expensive alternatives only when clinically indicated, and monitors usage against guidelines; and
• invests in low-flow equipment and ensures payback by training staff and monitoring the achievement of low flows.

Structure encourages value for money
• has a properly resourced business manager and administrative staff;
• gives those with most influence over expenditure responsibility for budgets;
• identifies a lead for each main clinical area; and
• provides a reasonable number of sessions for management tasks.
16. Although trusts can offset the cost of rising demand by improving their efficiency and quality within the present framework, these measures may not be enough to meet the challenges set by the reduction in the service contributions of trainees. One radical way forward is to reconsider the concept of non-physician anaesthetists. In the USA and parts of Europe such mid-level practitioners are frequently called ‘nurse anaesthetists’, although they do not have to come from a nursing background. There is professional opposition, but the Audit Commission shares the view of some anaesthetists interviewed that the UK should conduct carefully controlled research into the possibilities. This might begin with a trial involving operating sessions that require two anaesthetists, which are often staffed by a consultant and a trainee. As the availability of trainees reduces, a trial involving non-medically trained staff to replace the trainee is an option. If successful, trials involving a consultant supervising non-medically trained staff in two operating theatres might be tried.

17. Finally, it is important to remember that 75 per cent of anaesthetists’ costs are spent supporting surgery. Anaesthesia costs are rising in response to a demand created by others, and over which anaesthetists do not have control. To solve future anaesthesia staffing problems, trusts will not only have to control costs within the anaesthesia directorate, but also consider aspects of their service strategy that go beyond the specialty of anaesthesia.
### BOX C

#### Key recommendations from the report

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Action needed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Employ consultants on contracts with seven half-days for ‘fixed’* commitments, a high proportion of which should be directly clinical, unless there are clear reasons why this is not appropriate locally.</td>
<td>Chief executive, medical director, clinical director</td>
</tr>
<tr>
<td>2. Review grade mix, especially considering whether an increase in non-consultant career grades is appropriate for lists that have been covered in the past by trainees.</td>
<td>Medical director, clinical director</td>
</tr>
<tr>
<td>3. Agree and issue screening checklists for completion by patients and/or nurse before admission, to help ensure that the necessary information is available for the anaesthetist in advance of surgery, and to avoid wasting expensive doctor time.</td>
<td>Clinical director, director of nursing</td>
</tr>
<tr>
<td>4. Develop a proactive on-call system, embodied in a written policy, so that sub consultant doctors know when to seek help. Make consultants aware of their specific responsibilities in ensuring that sub consultant doctors do so.</td>
<td>Clinical director, individual clinicians</td>
</tr>
<tr>
<td>5. Designate more of the clinical sessions in consultants’ job plans as variable – that is, not fixed in time and place to a particular weekday morning and afternoon – making risk-sensitive cover of absences easier.</td>
<td>Medical and clinical director</td>
</tr>
<tr>
<td>6. Agree a policy that states who is responsible for giving information about anaesthesia and pain relief to patients – with a multidisciplinary form incorporated in the notes to record who has given information at each stage.</td>
<td>Chief executive, surgical and anaesthesia clinical directors, director of nursing</td>
</tr>
<tr>
<td>7. Where anaesthetists are unable to visit all patients preoperatively, introduce a systematic way of assigning priorities, to ensure that the most at-risk patients do receive a visit.</td>
<td>Clinical director</td>
</tr>
</tbody>
</table>

*Review the use of the term ‘fixed’, since it is good practice if some of these are used flexibly to cover for absent colleagues.*

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**Chief executive, medical director, clinical director**

**Chief executive, surgical and anaesthesia clinical directors, director of nursing**

**Clinical director, individual clinicians**

**Clinical director, director of nursing**

**Medical and clinical director**

**NHS Executive**

**Chief executive, medical director, clinical director**

**Clinical director**

*cont./

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11
### Recommendation

**8** Include specific standards about pain relief in contracts; these should include targets.

**9** An acute pain team can provide written information and guidelines, train staff about the management of pain, and provide a focus for improved teamworking; trusts that do not wish to adopt or fund a formal team approach will need some other mechanism to ensure that these activities take place.

**10** Sponsor research to establish new evidence-based guidelines for determining staffing levels and grade mix for obstetric anaesthesia. Then the national standard relating anaesthesia input to delivery rates can be revised to also take account of anaesthesia event-rates.

**11** Sponsor research on whether the demand for doctors can be reduced, and the best use made of consultants’ time, by allowing others who are appropriately trained to monitor/maintain anaesthesia without a medically qualified anaesthetist continually present in the operating room – for example, via carefully controlled pilot schemes.

### Action needed by

- **Health authorities, GP fundholders**
- **Chief executive, lead consultant**
- **Royal College of Anaesthetists; Obstetric Anaesthetists Association, NHS Executive**
- **NHS Executive**

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The Audit Commission promotes the best use of public money by ensuring the proper stewardship of public finances and by helping those responsible for public services to achieve economy, efficiency and effectiveness. The Commission operates independently.

The following publications are being released simultaneously with this briefing. Copies have been sent to each trust chief executive and clinical director for anaesthesia in England and Wales:

Audit Commission, *Anaesthesia Under Examination: The Efficiency and Effectiveness of Anaesthesia and Pain Relief Services in England and Wales* (national report)

ISBN 1 86240 060 1 £20.00

Copies are available from:

Audit Commission Publications
Bookpoint Ltd, 39 Milton Park
Abingdon’ OX14 4TD
Freephone 0800 502030

The following leaflets accompany the national report:
- **Key Messages for Clinicians**
- **Questions for Non-executive Directors**

Consultant Shortages: Summary of Results from a National Survey
Pain after Surgery: Summary of Results from a National Survey

These leaflets are available from:

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Telephone 0171 828 1212
(http://www.audit-commission.gov.uk)

Over the next year the Commission’s appointed auditors will be assessing where each local trust in England and Wales stands, and how services for patients can be improved.