

# FUNCTIONING AS A TEAM?



The 2002 Report of the  
National Confidential Enquiry  
into Perioperative Deaths

NATIONAL *CEPOD*

## EXECUTIVE SUMMARY

The 2002 NCEPOD Report, based on a sample of deaths within three days of an intervention, follows the patient's journey through an illness and the delivery of hospital care. Over 80% of the patients who died were urgent or emergency admissions. In this situation there has often been no formal assessment of comorbidities and many, otherwise remediable, medical conditions go uncorrected. Management must be pragmatic, problems are overlooked, complication rates are high and deaths occur despite the best anaesthetic and surgical expertise available.

Much can be done to pre-empt problems but this requires adequate provision of services and a team that functions in a co-ordinated manner. Continuity of care and an understanding of the case throughout the patient's journey through the hospital stay must be assured. Where does responsibility for continuity of care lie? Individual clinicians are becoming transient acquaintances during the surgical patient's passage through an illness rather than having responsibility for continuity of care. Staffing arrangements and shift working disrupts continuity of care. Currently the only constant factor is the individual consultant. There needs to be more team working. This involves not only consultants working together but also trainees, nurses, managers, professions allied to medicine and sometimes patients themselves (who must recognise their responsibility to maintain general health and fitness). No longer should individual surgeons act in isolation. Emergency situations may militate against this way of working but, with time, specialist

groups should be able to anticipate and plan for most common scenarios of presentation and the associated complications.

NCEPOD looked at how far team working has developed and most particularly at weaknesses in the systems, which create barriers to change. For example, communication failures are evident throughout many cases in this report. An encouraging finding is the increasing seniority of the clinician taking the ultimate decision to operate, a consequence of which should be a decline in the number of patients who are operated upon inappropriately.

All the pieces of the machine that delivers patient care need to be put into place and linked by co-ordinated thinking. A primary role of our health service is to care for urgent and emergency cases. The burden of this emergency work interferes with the planned functioning of the elective service.

In this report we also highlight issues around medical record keeping, an area of clinical governance which must be addressed. This extends to fluid balance charts and other areas of routine observations.

Even after death that continuity should continue with the direct interaction between the pathologist and the clinical teams. In the event of a patient's death there must be lessons to learn. These may only point out the natural progression and lethality of a particular pathology, the impact of comorbidity or the effects of age. Conversely there may be errors in decision-making, team working, diagnosis, technical performance etc. The autopsy is pivotal to uncovering these lessons. When asked to do an autopsy on a case involving a perioperative death, the pathologist effectively becomes a member of a multidisciplinary team. At present the majority of these examinations are conducted under the auspices of the coroner. The result is that the autopsy has become a process that has lost its link with clinical medicine.

The coronial system is failing to provide the lessons we need to learn in order to understand the patient's death. The system must adapt to its new role or be radically altered.

One of the roles of NCEPOD is to set agendas which other institutions or organisations can take up. This report highlights the need for the delivery of care to be a co-ordinated process, with various disciplines functioning as a team. Clinicians and managers should review current arrangements for the delivery of care.

## PRINCIPAL RECOMMENDATIONS

*See report for full details*

- 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.
- There are national agreed standards for anaesthetic monitoring. The absence of an essential anaesthetic monitor constitutes an unacceptable clinical risk that must be the subject of audit.
- There need to be national guidelines for clinical prescribing in hospitals in order to reduce the risk of drug error.
- Failure to diagnose acute appendicitis can still cause death in fit young adults. It is essential that experienced clinicians are available to ensure that cases are not missed.
- If a medical team is involved in a patient's perioperative care it should also be involved in any morbidity/mortality review of the case and receive a copy of the discharge summary and, where available, the autopsy report.
- Where perioperative complications contribute to the cause of death, these should be recorded on the death certificate.
- Autopsies should be the subject of a formal external audit process. Clinicians should be involved in evaluating the quality of reports and the basis of conclusions drawn, including the cause of death.

## KEY POINTS & OTHER RECOMMENDATIONS OF RELEVANCE TO CLINICIANS

(See full report for all recommendations & key points)

### GENERAL DATA

#### *Recommendations*

- There should be a record of the name of the supervising consultant anaesthetist.
- The adequacy of recovery beds should be reviewed.

#### *Key points*

- In 5% of the sampled cases it was not possible to identify the supervising anaesthetic consultant.
- Lack of recovery beds in some hospitals may hinder theatre throughput.
- There were 59 ICUs with one or less funded consultant sessions per day.

### CLINICAL DATA

#### *Recommendations*

- When operations are performed by a surgeon without the presence of an anaesthetist, then the existing guidelines on patient monitoring, observation and record keeping should be followed.
- Postoperative deaths should be the subject of anaesthetic and surgical review.
- It is inappropriate for an SHO to anaesthetise an ASA 5 patient.

#### *Key points*

- Disorders of the cardiovascular system were the most common comorbidities in the sample.
- There was a lower incidence of myocardial ischaemia in this sample of deaths on or before day 3 compared with deaths within 30 days of operation.
- There was a high incidence of atrial fibrillation when compared to that expected in the general population.
- There was a trend towards increasing use of regional techniques and toward use of higher epidural analgesia.
- The patient's temperature was not always monitored when active warming devices were being used.
- There were cases where operations were performed without the presence of an anaesthetist and monitoring devices were not used when indicated.
- 6% of cases could not be transferred to a critical care facility when clinically indicated.
- 57% of deaths were not reviewed by anaesthetists and 19% not reviewed by surgeons.

### PREOPERATIVE CARE

#### *Recommendations*

- National protocols should be formulated to identify which inpatients would benefit from a more detailed preoperative cardiovascular assessment, including echocardiography.
- The anaesthetist, or the anaesthetic department, should be notified of elective patients who have significant operative risks, preferably in advance of their admission.

#### *Key points*

- 88% of hospitals now run pre-admission assessment clinics for one or more surgical specialties.
- 34% of elective admissions did not attend a pre-admission assessment clinic.
- There should be comprehensive training of pre-admission assessment staff in preoperative clinical assessment skills.
- Protocols for preoperative assessment and referral of patients by the pre-admission assessment clinic need to be explicit.
- Anaesthetists should be involved in the development of pre-admission assessment guidelines.
- The findings of morbidity/mortality reviews should be considered when the pre-admission assessment clinic protocols are being evaluated and modified.
- It is essential that when the care of a patient is transferred those referring the patient give the receiving team all the necessary relevant clinical information.
- Many patients do not receive essential regular medication preoperatively.
- Legal responsibility for prescribing rests with the doctor who writes or alters the prescription.

### DECISION-MAKING & SURGERY

#### *Recommendations*

- The decision to operate in complex cases can benefit from the formal involvement of others apart from the surgeon. Critical care specialists should be more directly involved.
- When a formal preoperative medical assessment is indicated, an experienced physician, preferably a consultant, must make it. It is the responsibility of that physician to fully understand the operative risks of the patient's condition.

#### *Key points*

- The number of cases in which the consultant surgeon is involved in the decision-making continues to increase and this involvement is now very high.
- In taking the decision to operate in complex cases, which will almost certainly require critical care and where there is a high probability of death, surgeons should directly involve critical care specialists in

the decision to proceed. Their views may well assist in achieving a greater objectivity in these difficult circumstances. Local arrangements may need to be in place out of hours to achieve this.

- Physicians need to raise their awareness of surgical conditions existing or developing in patients under their care.
- Appendicitis can still result in death in otherwise fit young patients. Its diagnosis requires skill and experience. Hospitals should ensure that those seeing potential cases either have the requisite skills and experience or are adequately supported by those who do.
- The failure to have available medical notes at a subsequent admission can compromise care and be directly detrimental. It is indicative of sub-standard care and should be audited as such.
- A balance is required between the need to get an acutely sick patient to the operating theatre and the need to ensure proper resuscitation and investigation. For this to be achieved planning, co-operation and teamwork between all those involved are essential.

## POSTOPERATIVE CARE

### *Recommendation*

- The maintenance of accurate fluid balance charts by nursing staff is vital; medical staff should review these daily.

### *Key points*

- Medical record keeping is sometimes of a poor standard that needs to be improved. Poor medical records compromise clinical care.
- The benefits of critical care outreach teams still appear to be poorly recognised.
- Guidelines to determine which patients should be referred to a critical care team should be developed locally and subsequently validated.
- Medical staffing should be organised so that staff of appropriate seniority are available when a medical opinion is requested.

## COMPLICATIONS

### *Recommendation*

- Postoperative problems are common. It is essential that doctors who care for surgical patients should be trained in the management of these problems. Complications may arise following endoscopic surgery. Protocols should be available to deal with these and remedial actions should be rehearsed and involve senior experienced clinicians.

### *Key points*

- Careful patient selection (where possible), preoperative preparation and anticipation can avoid or diminish postoperative complications.
- Intra-operative haemorrhage was an unforeseen

complication in 4% of operations.

- Some patients are too ill for anaesthesia and surgery.
- Anticipation and early recognition of complications might have improved outcome.

## THE AUTOPSY

### *Recommendation*

- Autopsies should be the subject of a formal external audit process. Clinicians should be involved in evaluating the quality of reports and the basis of conclusions drawn, including the cause of death.

### *Key points*

- Most autopsies were performed for HM Coroner.
- Cases in which no autopsy was performed may not have been fully investigated.
- Autopsies continue to provide useful information and are an important part of auditing perioperative deaths. However some of these examinations were unsatisfactory and did not explain the death. Problems included undue brevity, failure to properly examine the operation site, failure to make appropriate clinicopathological correlation and failure to take histology. These findings demonstrate that pathologists often under-investigated postoperative deaths.
- Autopsy reports should be sent to all clinicians providing a case summary to the pathologist. There are agreed standards for this practice but the requirements of some coroners often restrict the communication necessary for good mortality audit.
- The structure of the coroner's autopsy sometimes conflicts with the requirements of a full investigation into perioperative deaths. In particular the flow of information between clinicians and pathologists can be severely inhibited.
- The autopsy should be seen as an essential and fundamental part of the on-going examination of clinical practice. Coroners should understand their responsibility in supporting this requirement.
- When an autopsy is to be performed, arrangements for communication between clinicians and the pathologist need to be formalised. Clinicians involved should provide a case summary to the pathologist prior to the autopsy and include details as to how they can be contacted for further discussion.
- Pathologists and clinicians must hold multidisciplinary audit meetings. Findings from autopsies need to be part of the process of learning from deaths at morbidity and mortality meetings. Pathologists undertaking autopsies should attend such meetings not only for the benefit of the clinical discussion but also as part of the pathologist's continuing professional development.

## KEY POINTS & OTHER RECOMMENDATIONS OF RELEVANCE TO MANAGERS

(See full report for all recommendations & key points)

### 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.

#### *Key points*

- NCEPOD continues to be concerned that all relevant deaths are not reported.
- In 5% of the sampled cases it was not possible to identify the supervising anaesthetic consultant. The quality of data regarding facilities within hospitals is questionable.
- Lack of recovery beds in some hospitals may hinder theatre throughput.
- There were 59 ICUs with one or less funded consultant sessions per day.

### CLINICAL DATA

#### *Recommendation*

- Postoperative deaths should be the subject of anaesthetic and surgical review.

#### *Key points*

- 8% of operations were delayed for non-clinical reasons.
- 6% of cases could not be transferred to a critical care facility when clinically indicated.
- 57% of deaths were not reviewed by anaesthetists and 19% not reviewed by surgeons.

### PREOPERATIVE CARE

#### *Key points*

- 88% of hospitals now run pre-admission assessment clinics for one or more surgical specialties.
- 34% of elective admissions did not attend a pre-admission assessment clinic.

- There should be comprehensive training of pre-admission assessment staff in preoperative clinical assessment skills.
- Some patients are admitted into an inappropriate area of the hospital because of pressure on beds.
- Legal responsibility for prescribing rests with the doctor who writes or alters the prescription.

### DECISION-MAKING & SURGERY

#### *Recommendation*

- Non-availability of a patient's previous notes at the time of an acute admission is a major administrative failure and should be exposed as such.

#### *Key points*

- The number of cases in which the consultant surgeon is involved in the decision-making continues to increase and this involvement is now very high.
- The failure to have available medical notes at a subsequent admission can compromise care and be directly detrimental. It is indicative of sub-standard care and should be audited as such.

### POSTOPERATIVE CARE

#### *Recommendation*

- The maintenance of accurate fluid balance charts by nursing staff is vital; medical staff should review these daily.

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- Medical staffing should be organised so that staff of appropriate seniority are available when a medical opinion is requested.

### COMPLICATIONS

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- Some patients are too ill for anaesthesia and surgery.

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## NCEPOD Corporate Structure

### Chairman

Mr. J. LI. Williams

### Chief Executive

Mrs. C. M. K. Hargraves

### Principal Clinical Coordinators

Mr. R. W. Hoile (Surgery)  
Dr. G. S. Ingram (Anaesthesia)

### Clinical Coordinators

Mr. K. G. Callum (Surgery)  
Mr. I. C. Martin (Surgery)  
Dr. A. J. G. Gray (Anaesthesia)  
Dr. K. M. Sherry (Anaesthesia)

### Bodies nominating members of the Steering Group

- Association of Anaesthetists of Great Britain & Ireland
- Association of Surgeons of Great Britain & Ireland
- Faculty of Dental Surgery of the Royal College of Surgeons of England
- Faculty of Public Health Medicine of the Royal Colleges of Physicians of the UK
  - Royal College of Anaesthetists
  - Royal College of Obstetricians and Gynaecologists
    - Royal College of Ophthalmologists
    - Royal College of Pathologists
  - Royal College of Physicians of London
    - Royal College of Radiologists
  - Royal College of Surgeons of England

## WHAT IS NCEPOD?

The National Confidential Enquiry into Perioperative Deaths (NCEPOD) is a registered charity whose aim is to review clinical practice and identify potentially remediable factors in the practice of anaesthesia, surgery and other invasive medical procedures. The aim is to look at the *quality* of the delivery of care and not specifically the causation of death. The commentary and recommendations made in the annual reports are based on peer review of the data, questionnaires and other records submitted to us. NCEPOD is not a research study based on differences against a control population and does not produce any kind of comparison between clinicians or hospitals.

NCEPOD is an independent body, to which a corporate commitment has been made by the Royal Colleges, Faculties and Associations related to its activity. Each of these bodies nominates members of the Steering Group.

Since 1 April 1999, NCEPOD has come under the aegis of the National Institute for Clinical Excellence (NICE), who now provide the majority of the organisation's funding. Financial support is also provided by the Welsh Office, Health and Social Services Executive (Northern Ireland), States of Guernsey Board of Health, States of Jersey, Department of Health and Social Security (Isle of Man) and many of the independent hospitals who also submit data to the Enquiry. NCEPOD does not cover Scotland, who conduct their own enquiry, the Scottish Audit of Surgical Mortality (SASM). The total annual cost of NCEPOD is approximately £550,000 (2001/02).

NCEPOD collects basic details on all deaths occurring in hospital within 30 days of a surgical procedure. A designated Local Reporter within each hospital submits this data to the Enquiry. A surgical procedure is defined by NCEPOD as *"any procedure carried out by a surgeon or gynaecologist, with or without an anaesthetist, involving local, regional or general anaesthesia or sedation"*. The Enquiry does not review maternal deaths, which come under the remit of the Confidential Enquiry into Maternal Deaths (CEMD).

The data collection year runs from 1 April to 31 March and each year, a sample of the total number of reported deaths is selected for detailed review.

### ***Future reports***

The next major NCEPOD report, to be published in 2003, will re-visit 'Who Operates When' which was undertaken in 1995/96 and published in 1997.

The 2004 report will review patients who underwent a gastrointestinal endoscopy procedure.

### ***Obtaining the full report:***

The 2002 report is available for downloading from the NCEPOD Web site.

Alternatively please send a sterling cheque for £20 (inc. P&P) payable to NCEPOD.

ISBN: 0-9539240-1-7

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