



National audit of major airway complications

The 4th National Audit Project (NAP4) is an ambitious project being conducted jointly by the Royal College of Anaesthetists (RCoA) and the Difficult Airway Society in collaboration with several other organisations including the College of Emergency Medicine (CEM). The aim is to discover the incidence of serious airway complications and examine each reported case for common themes and learning points.

All major complications of airway management (regardless of the specialty of the doctor involved) that occur in theatres, the ED or ICU should be reported to NAP4, during a one year period starting in September 2008. Reports are welcomed from emergency physicians, nurses and all other healthcare staff.

WHAT IS INCLUDED?

We are interested in the major complications of airway management occurring in any patient. These are defined as:

- ▶ Death.
- ▶ Brain damage.
- ▶ Emergency surgical airway or needle cricothyroidotomy.

- ▶ Unanticipated ITU admission, but only where the complications of airway management are the cause of the admission and lead to an adverse outcome.

For this project to be achievable we need to focus only on those cases with a poor outcome clearly identified as caused by airway management. Therefore we do not wish to be informed of cases which would have been admitted to ICU without airway difficulty, unless this results in a significant adverse outcome.

HOW ARE DATA REPORTED?

All cases should be reported by email to the project team at: tcook@rcoa.ac.uk. The reporting and recording process is secure, confidential and anonymous. It will not be possible to identify individuals, or associate reported events with a particular hospital. No patient- or physician-identifying data will be requested. Support will be available if required.

HOW IS THE COLLEGE OF EMERGENCY MEDICINE INVOLVED?

The project is supported by a network of reporters based in hospital anaesthetic

departments. Reporting from the ED will be facilitated by the CEM "airway link". I invited consultants to represent their ED in this new role during July, but if your department has not yet nominated an airway link with the College please send the name of the nominee, department and contact details to cem@emergencymedicine.uk.net.

This is the first national RCoA audit in which the College of Emergency Medicine has been invited to participate, and reflects the progress that has been made in developing collaborative links with our colleagues in anaesthesia, and an increasing recognition of the role of our specialty in emergency airway management.

WHY IS THIS STUDY IMPORTANT?

At present we do not know the incidence of these major complications or whether patterns exist in causes or consequences. This project offers the chance to increase knowledge and improve patient safety.

The key to success is universal involvement. Please discuss this project within your departments and liaise with your CEM airway link and anaesthetic colleagues. Look out for the bright yellow posters! I would be pleased to provide further information or discuss any questions that may arise.

Jonathan Benger

Professor of Emergency Care, University of the West of England, Bristol and College Airway Lead

Why children die

The Confidential Enquiry into Maternal and Child Health (CEMACH) has produced an important document entitled *Why children die*.¹ In his Foreword, Lord Patel notes that “despite many positive examples of good care, this study found avoidable factors in children’s deaths in a variety of situations. Healthcare professionals need to be trained in the recognition of serious illness in children.”

The study looks at the quality of care delivered to a sample of children who died in 2006, and the report makes key recommendations to improve the future care of children.

There is a liberal sprinkling of vignettes, which always make a document more readable. Emergency doctors will not be surprised to find that these include examples of deaths due to meningitis, major trauma, asthma, overdose, infection and intracranial haemorrhage.

From the point of view of emergency medicine, key findings of this report include the following:

- ▶ Junior doctors working in emergency medicine may fail to recognise a seriously ill child, with subsequent failure to take appropriate action.

- ▶ There may be poor supervision by senior doctors to provide a safety net for the juniors.
- ▶ There may be a failure to take a detailed history or perform an adequate examination.
- ▶ Parents should be encouraged to seek further medical help if the child’s condition fails to improve.
- ▶ There may be a failure of processes such as triage, prioritisation and administration (such as “notes lost”).

Junior doctors in emergency medicine have often had minimal experience of emergency paediatrics, either at medical school or subsequently, and immediate advice must always be readily available to them.

Other ways to prevent unnecessary deaths include the following:

- ▶ In-post training: the Department of Health’s DVD *Spotting the sick child*² is designed for this purpose.
- ▶ Departmental guidelines should be readily available.
- ▶ There should be no discharge of young infants without senior or paediatric approval.
- ▶ There should be no discharge of patients over 10 years old with an overdose of drugs, whether accidental or not.

- ▶ Telephone advice without a face-to-face assessment of the child, or advice by a junior paediatric doctor, should be discouraged.
- ▶ Every emergency department seeing over 16 000 children per year should have a consultant with a particular interest in paediatric emergency medicine.
- ▶ Efforts should be made to improve the detection of children with mental health problems: only a quarter of child suicides were known to have mental health problems prior to death.

Many cases of avoidable deaths are due to failure to recognise the seriously ill child, and this is where the emergency department can make its greatest contribution to reducing childhood mortality. All doctors working with children should learn to recognise the pointers in the history and examination, and to recognize their own limits.

Remember that it is always better to refer a child unnecessarily than to risk the child’s death.

John Bache

REFERENCES

1. **Pearson GA, ed.** *Why children die: a pilot study 2006: England (South West, North East and West Midlands), Wales and Northern Ireland.* London: CEMACH 2008.
2. **Davies F and Department of Health (England).** *Spotting the sick child.* DVD, 2004. ISBN 1 904039 11 1 (available from www.ocbmedia.com).

The end of the hospital number

The NHS National Programme for IT (NPFIT) has been looming on the horizon for so long that some people may have thought it would eventually go away, but it won’t. It will soon engulf us and sweep away all our small scale IT systems that we have grown to love—or at least learnt to work with. We hope for the best, but even the most optimistic will agree that the phrases “NHS”, “large scale computer project” and “unqualified success” are rarely seen together on the same page.

One small casualty of NPFIT will be the patients hospital number. These are usually 6 or 7 digits, easy to remember but not standardised between NHS organisations. Soon the individual hospital numbers will be replaced for all purposes by the patients 10-digit NHS number.

NHS numbers in one form or another have been around for about as long as the NHS but they have somehow never caught on. The reason is not hard to find: the NHS number is too long.

There is good evidence, some of it 50 years old, that the human brain cannot easily store large numbers in its short-term memory. Tests on many volunteers asked to memorise random numbers have shown that most of us can only remember 7 digits (range 5–9) before we make errors in recall—hence most people can remember car number plates, postcodes and landline phone numbers accurately.

However most people cannot remember mobile phone numbers or NHS numbers without making a mistake, unless they embark on the much slower

process of storing the number in the long-term memory.

This would not matter if these numbers were just being shuttled from one computer to another. However we all store hospital numbers in our short-term memories many times every day—to look up patients pathology and x ray results for example, or when requesting notes or dictating letters.

We will be using a patient identifier that is larger than can be reliably stored in the human short-term memory. This might be expected to lead to more errors, or at least slower processing at the human/computer interface.

I made this point to our head of IT. He smiled and agreed—it’s part of his job to be conciliatory to the technologically incompetent. He then said that he was certain that this was an oncoming train that could not be stopped.

Emergency physicians in intensive care

For several years there have been a small number of emergency physicians working in consultant posts split between emergency medicine (EM) and intensive care medicine (ICM). This number is now steadily increasing as are the number of trainees working towards dual accreditation. In response to this, the Emergency Physicians in Intensive Care (EPIC) group was officially formed in May 2007.

The founding aims of EPIC can be summarised as:

- ▶ Encouraging best practice in the care of critically ill patients presenting to the emergency department (ED).
- ▶ Strengthening a constructive interface between EM and ICM.
- ▶ Demonstrating the value of dual training in EM and ICM in the wider hospital context, as a model of good medical care for critically ill patients.
- ▶ Providing information and professional support on issues surrounding dual working along with careers guidance for trainees.
- ▶ Supporting relevant and up-to-date continuing professional development.

WHY EM AND ICM?

About 25% of ICU patients will present through the ED, with a high proportion of these requiring level III care.¹ The precise figure varies as ED patients are admitted to ICU through a number of routes, including theatres and medical or surgical assessment units.

Critically ill patients often lack a clear initial diagnosis. However, emergency physicians and intensivists share a common approach to these undifferentiated acutely unwell patients allowing rapid physiological stabilisation, timely diagnosis and focused treatment. EM training already encompasses essential critical care knowledge and skills which emergency physicians use on a daily basis.

The role of the dual accredited EM/ICM specialist focuses on improving the early recognition of patients in the ED with subtle evidence of physiological derangement or scope for deterioration which allows provision of appropriate clinical review, rapid escalation of treatment and facilitation of critical care admission. Early recognition and treat-

ment of the critically ill is known to be beneficial, as shown by the common "early" theme of many successful treatment strategies, including thrombolysis, trauma's golden hour and early goal directed therapy.² Developing this clearer focus and streamlined approach addresses some of the deficiencies in the management of patients prior to admission to critical care which were highlighted by NCEPOD.³

Prompt involvement of intensivists allows appropriate resource allocation and treatment planning and having an intensivist already in the ED allows the whole process to start earlier and maintain momentum.

Ideally the ED resuscitation room should mirror an ICU bay with 360-degree access to the patient and availability of similar equipment. It is important that intensivists and anaesthetists feel that the resuscitation room is a safe and appropriate place to stabilise the critically ill patient. The ability to provide up to level III care should avoid the need to transfer unstable patients out of the ED except for specific interventions. The planning and development of resuscitation room care is a key role for the dual EM/ICM specialist.

POTENTIAL BENEFITS OF EM/ICM SPECIALISTS

Benefits are enjoyed by the patients and staff in both departments and the hospital as a whole.⁴

The emergency department

The EM/ICM specialist's focus on the early identification and management of critically ill patients should lead to early instigation of time critical procedures such as non-invasive ventilation, tracheal intubation, central vascular access and advanced monitoring, without the need for involvement of other teams. Advanced minimally invasive monitoring devices are likely to be increasingly used in the ED environment. The benefits of ScvO₂ monitoring in the ED have been established² and an increasing number of UK departments are now using Doppler technology to identify and optimise physiological derangement.

There is overlap in the extended complementary technical skills between ED

and ICU, such as the use of bedside ultrasound for trauma assessment, vascular access, evaluation of pneumothorax and focused echocardiography which are increasingly common skills for both specialities. The EM/ICM specialist can drive improvements in the management of critically ill patients in the ED, reducing clinical risk and critical incidents.

ED staff benefits from an accredited intensivist in the ED by expanding their skills in critical illness management, including critical care transfers, and can therefore reduce the need for anaesthetic cover of the ED.

The intensive care unit

An emergency physician brings complementary skills and experience to the ICU. The ability to offer timely and seamless critical care from arrival in the ED through to ICU/HDU admission together with the emergency physician's core skill of initial assessment and resuscitation of the critically unwell patient translates well into ICU practice, especially when assessing patients referred from the wards. Other skills acquired in the ED such as frequent interpretation of ECGs and imaging, conscious sedation, the initial management of fractures and dislocations, invasive procedures and secondary/tertiary trauma surveys can all prove useful in the ICU environment.

ICM trainees benefit from the diverse skill mix of their consultants and will develop an improved ability to work outside the ICU, particularly in the resuscitation room. There is also continuity of training and mentorship for Acute Care Common Stem (ACCS) trainees. A physician spanning both EM and ICM is ideally placed to foster relationships between both departments improving team working, communication, audit and constructive feedback.

As critical care management improves in the ED, ICU staff members are able to concentrate more on the patients already in the unit, especially at night when fewer ICU doctors are available to provide critical care outreach.

The hospital

The benefit of having an ED/ICU specialist working in both departments is important for providing seamless critical care within the hospital and allows integration with the critical care outreach teams.

Awareness of how both units function, coupled with an appreciation of the

challenges they face, allows more effective collaborative working, for example on guidelines or purchasing decisions. This enables streamlined management and a smoother patient journey, avoiding duplication of effort. Synchronisation of complex equipment such as ventilators and monitors would also improve transfers between the units and reduce clinical risk associated with unfamiliar equipment.

Training

An integrated approach to training is the best option for trainees in emergency and intensive care medicine. Outlining training requirements is challenging as there are broadly three groups of trainees that need to be considered: those in EM SpR posts, those who joined part way through run through training and those who will have completed ACCS training. The most up-to-date information can be found on the Intercollegiate Board for Training in Intensive Care Medicine (IBTICM) website (<http://www.rcoa.ac.uk/ibticm/>)

For EM trainees aspiring to a joint CCT with ICM, the minimum requirements are: 3 months of preliminary training in ICM, 6 months of anaesthesia, 6 months of acute general medicine (of which 3 months can be EM) followed by 18 months of ICM in a specialist training post, 6 months for Step 1 (Intermediate) training and a further 12 months for Step 2 (Advanced) training.⁵

Trainees progressing through ACCS will have completed all periods of complementary training and the College of EM and IBTICM envisage that they can complete intermediate ICM training dur-

ing the CT2 year and advanced training in an additional ST7 year. The situation is more complex for trainees joining part way through run through training: FTSTA posts may be used to gain complementary and intermediate training, but entry to advanced training still requires success in a competitive application process.

Future areas

The concept of ED observation wards with Level II capability is an attractive approach to dealing with acute patients who require short-term close observation (for example, asthma, chest pain, NIV, head injury). Such a unit would also act as a holding bay for Level III patients while ICU prepared a bed.

The scope for this extended level of care has been recognised at governmental level by allocating 2% of ED attendances as clinical exceptions to the four-hour rule. Although 2% is inadequate to cover all appropriate exceptions, it does show an acceptance of the need for advanced clinical management in the ED.

Advanced academic relations between the specialities is already reaping benefits and a joint Intensive Care Society and College of Emergency Medicine meeting is scheduled for June 2009. The programme for this meeting is being arranged by EPIC members to ensure a focussed and productive meeting.

CONCLUSIONS

Intensive care and emergency medicine have much common ground and dual

accredited specialists offer considerable benefits to the overall care package of the critically ill or injured patient. EPIC (<http://www.ep-ic.org>) is an organisation that is trying to bring together physicians who specialise in this brand of critical care medicine.

We welcome like-minded individuals to join the group and contribute to the improvement of immediate critical care in the UK.

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This article is also appearing in the September issue of the *Journal of the Intensive Care Society*.

REFERENCES

1. **Simpson HK**, Clancy M, Goldfrad C, *et al.* Admissions to intensive care units from emergency departments: a descriptive study. *Emerg Med J* 2005;**22**:423–8
2. **Rivers E**, Nguyen B, Havstad S, *et al.* Early goal directed therapy in the treatment of severe sepsis and septic shock. *N Engl J Med* 2001;**345**:1368–77.
3. An Acute Problem? A report of the National Confidential Enquiry into Patient Outcome and Death. 2005.
4. **Brown T**. Emergency physicians in critical care: a consultant's experience. *Emerg Med J* 2004;**21**:145–8.
5. **Gillbe C**, Hayes E. Training in Intensive Care Medicine. EMJ Supplement, January 2007.

The Royal Society of Medicine, Emergency Medicine Section forthcoming events:

Emergency Medicine Clinical Excellence series

Part 4: Thursday 9 October 2008 "Heads Up"

This exciting and informative day will include talks on:

- ▶ Fits, faints and funny turns in adults and children
- ▶ The differential diagnosis of facial pain
- ▶ CT interpretation for ED doctors/thrombolysis

Part 5: Friday 30 January 2009 "Emergencies below the diaphragm"

Including talks on:

- ▶ Everything you ever wanted to know about caesarean section in the Emergency Department
- ▶ Abdominal imaging
- ▶ Renal failure
- ▶ Pancreatitis HONK/DKA

The Summer Meeting in 2009 will focus on the more senior patient in the ED—is 85 the new 40?