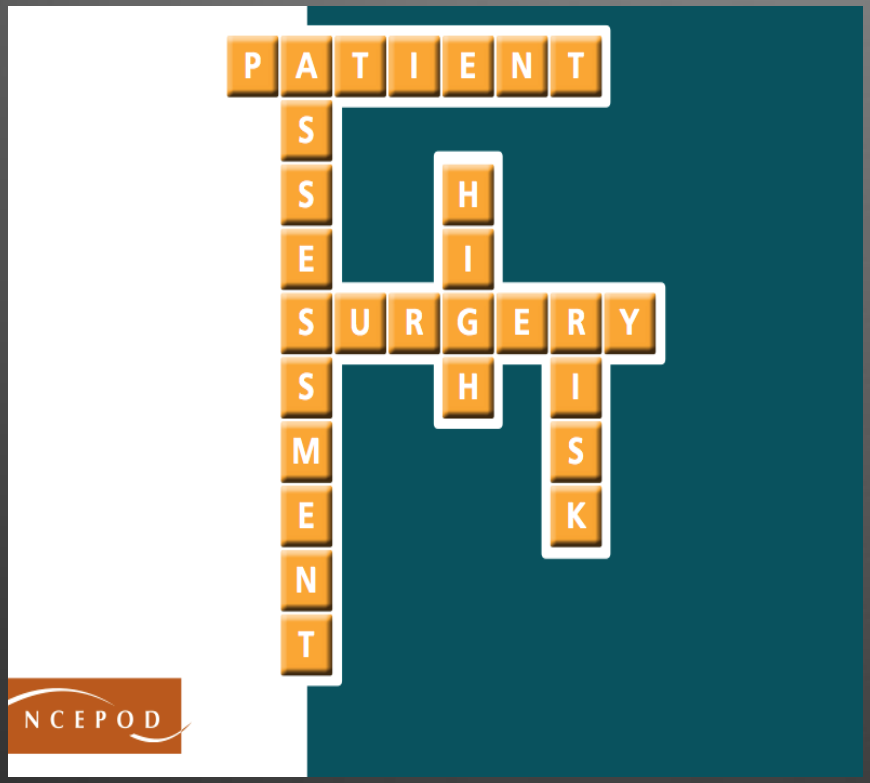
"Knowing the Risk"
NCEPOD report 9/12/11



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Royal United Hospital, Bath

“Knowing the risk”

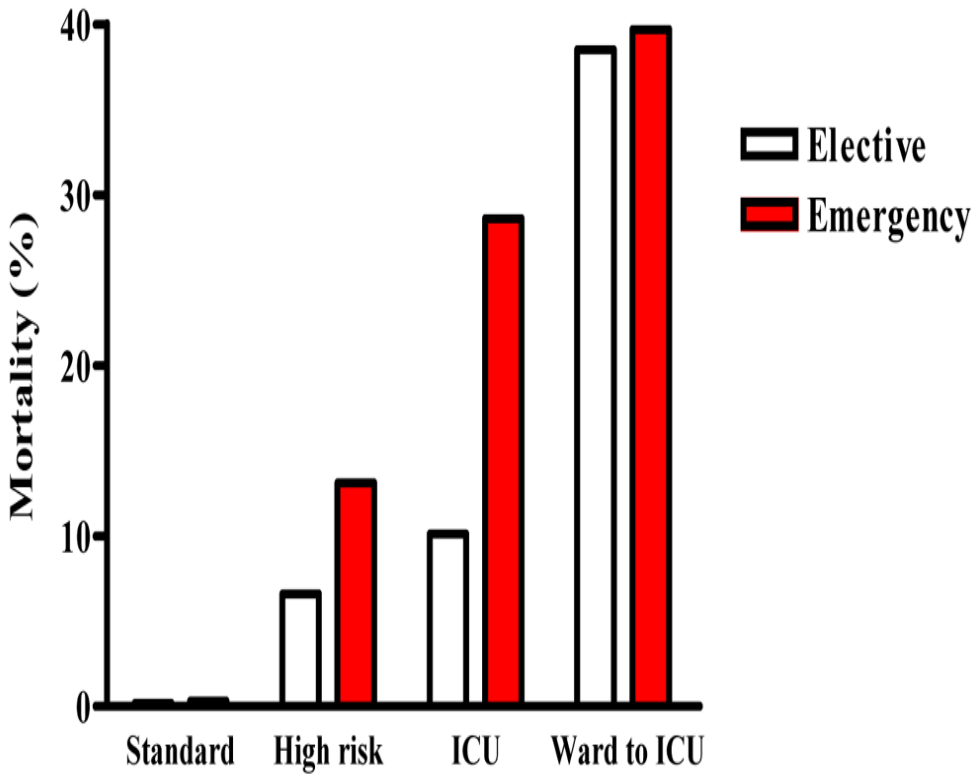
- Up to 25,000 surgical deaths per year
- 5-10% of surgical cases are high risk
- 79% of deaths occur in the high risk group
- Overall care not good in more than half of cases
- Deficiencies in assessment, monitoring and fluid management
- Low critical care utilization
- Morbidity, and resource consumption
- We need to actively identify this high risk group and target resources at them
- We must assess and document the risk and inform patients!

Identification and characterization of the high-risk surgical population in the United Kingdom.
Pearse R. M. et al. Critical Care 2006

High risk group
- 12.5% of procedures 84% of deaths

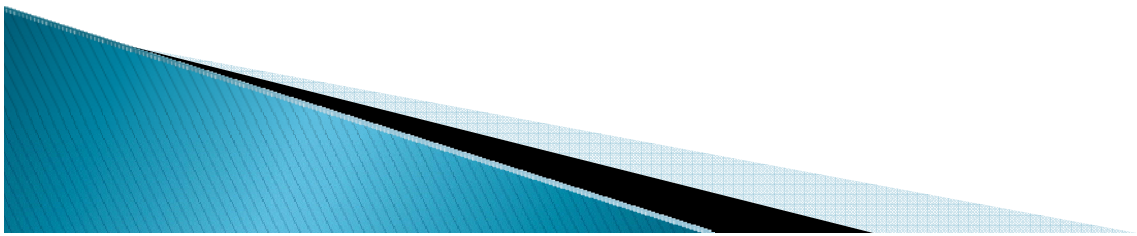
<15% to ICU
- ICU median stay 1.6d
- 41% of deaths after ICU discharge
- 1% discharged for palliative care

Patients admitted to ICU from ward 40% mortality



High Risk Surgery Outcomes

- 35% of high risk patients admitted to critical care
- Of those who died only 49% went to critical care
- Only 25% of deaths occurred in critical care
- All elective cardiac surgery patients go to critical care – mortality 3.5%
- *Jhanji et al Anaesthesia 2008*



Are we finally at a tipping point?

Donabedian A. Evaluating the quality of medical care.
Milbank Memorial Fund Quarterly
1966;44:166-206

So where are the deficiencies we can act on to improve care?

Structure, Process, Outcome

Structure

- Pre-assesment clinic
  - 16% no pre-assessment clinic
  - 17% no surgical pre-assessment
  - Elective patients not seen
    - 30d mortality 4.8% v.0.7%
- Operating theatres -Emergency theatre
  - 72.5% in hours; 83.2% out of hours -access?
  - 20% of non-elective patients delayed
- PACU facilities
  - 82.8% ventilatory support and ongoing management
  - But 60% only in an emergency for up to 6 hours
- Critical care outreach team -66%

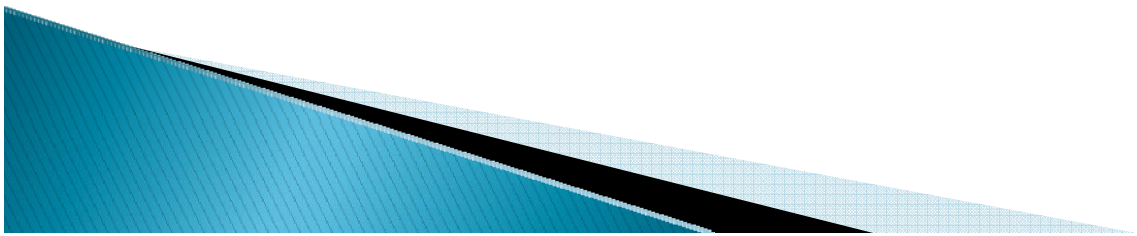
Process

- Policies in place for key perioperative processes?
- Policy in place does not mean effective implementation, most health care resources run at 60-80% reliability
- Hypothermia management -
  - 66% have a policy

Monitoring and fluid management in “high risk” patients

- 26.6% arterial catheter
- 14.2% had a central venous catheter
- 4.7% had cardiac output monitoring
- Advisors considered intra-operative monitoring inadequate in 10.6% patients; this group had a threefold increase in mortality (20.5%)
- 13% of patients did not get fluid in line with GIFTASUP guidelines

Is this good enough?
If you were a high risk patient what would you want?



5/12/11 Sir Iain Carruthers and Sir David Nicholson

INNOVATION
HEALTH
AND WEALTH

ACCELERATING ADOPTION AND DIFFUSION IN THE NHS

OESOPHAGEAL DOPPLER MONITORING (ODM)

ODM is a minimally invasive technology used by anaesthetists during surgery to assess the fluid status of the patient and guide the safe administration of fluids and drugs.

In March 2011, NICE published guidance on the use of ODM, recommending it for patients undergoing major or high-risk surgery and certain other surgical patients. Despite a comprehensive evidence base, uptake of this technology has been poor across the NHS. Full adoption of this technology across the NHS is forecast by NICE to benefit over 800,000 patients and generate net financial savings of over £400m. Current information suggests that these technologies are used for less than 10% of applicable patients.

- We will launch a national drive to get full implementation of ODM, or similar **fluid management monitoring technology**, into practice across the NHS.

How good are we as anaesthetists at defining risk?

- 20% of patients prospectively “high risk”
- Advisors reviewing data felt risk slightly lower
- Patient factors considered most important in determining risk
- Use of Lee scoring system – Lee class III or more 14.6% “high risk”
- So the clinicians with the patient in front of them estimate an increased risk
- But do they act on it and are they right?

Critical Care Admission

- 1167/17,295 patients went straight to critical care (6.7%)
- Think about it …..
  - 2/3 patients overweight
  - 1/3 non-elective
  - 20% judged high risk
  - 20% ASA 3 or more
  - 9.8% intra-op complication with a mortality of 13.2%
- And yet ….
  - In only 2.1% of cases did the anaesthetist judge the post-op location not ideal!
  - 31 low risk patients died on ward with no critical care
  - Advisors judged 8.3% of patients should have had higher level of care this group had a 3x increased mortality

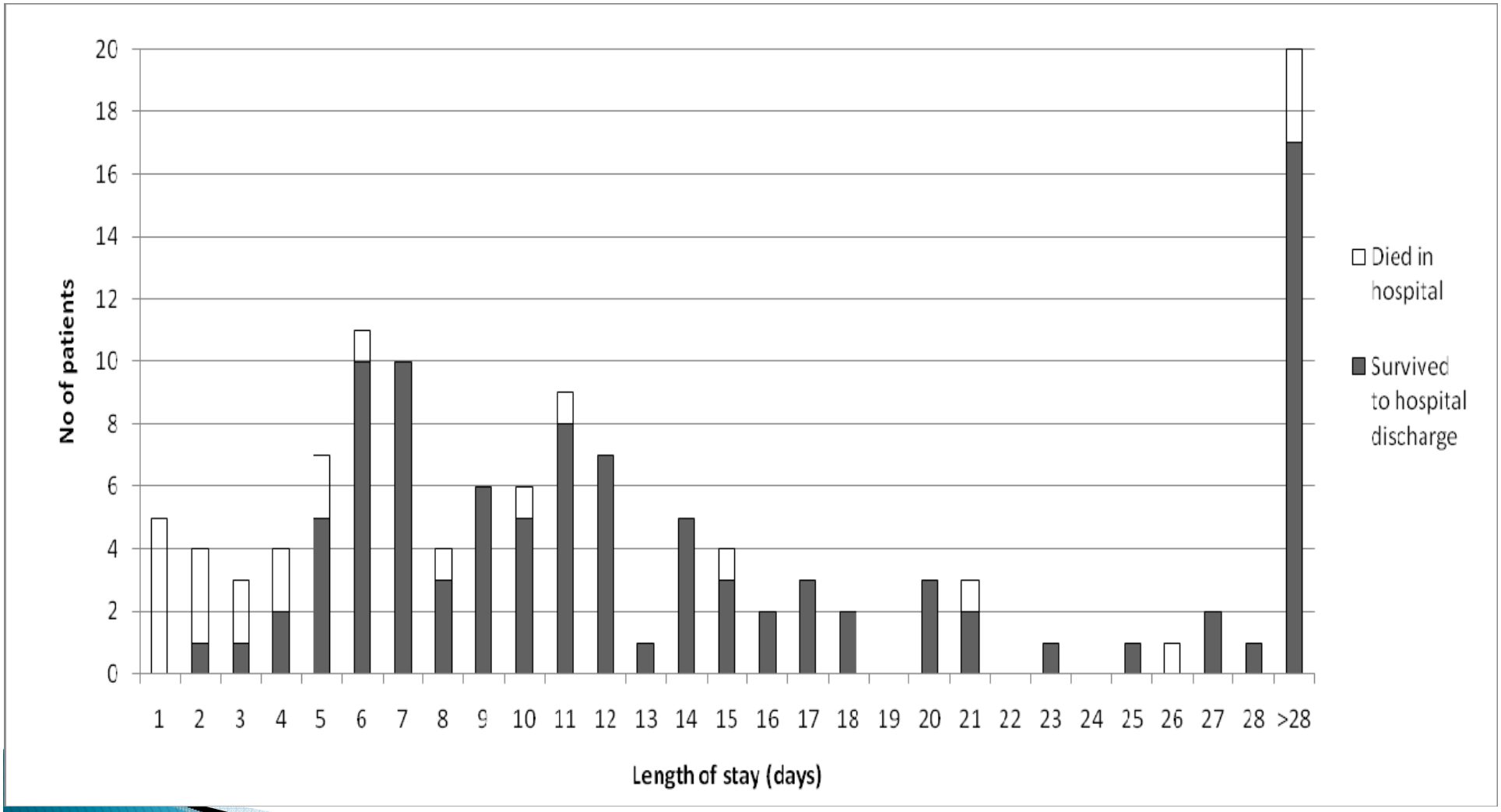
Determinants of Long –Term Survival After Major Surgery and the Adverse Effect of Postoperative Complications

Khuri et al Ann Surg 2005;242:326-343.

- "The occurrence of a 30 day postoperative complication is more important than preoperative patient risk and intraoperative factors in determining the survival after major surgery in the VA. Quality and process improvement in surgery should be directed toward the prevention of postoperative complications".
- NCEPOD 26% of cases had postoperative complications affecting outcome

Death is not the only outcome!

Could greater investment in post-operative care be cost effective?

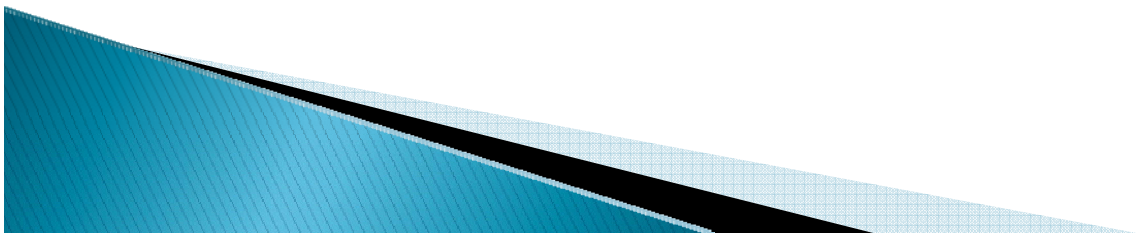


Mortality and Postoperative Care after Emergency Laparotomy.

Clarke, Murdoch, Thomas, Cook,

So how do we do better?

- Measurement
- Set standards
- Quality improvement
- Research



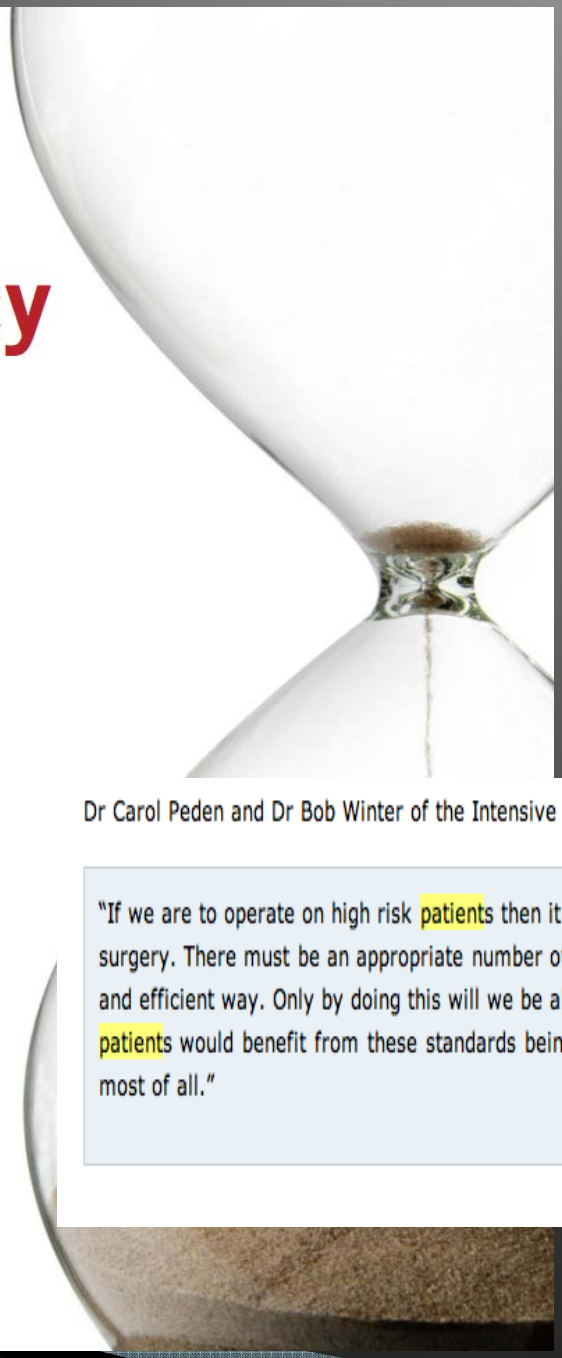
Royal College of Surgeons 2011

Emergency Surgery

Standards for unscheduled surgical care

Guidance for providers, commissioners and service planners

February 2011



Dr Carol Peden and Dr Bob Winter of the Intensive Care Society said:

"If we are to operate on high risk patients then it is essential that we provide the right level of care for them after their surgery. There must be an appropriate number of critical care beds to manage these patients in the most cost effective and efficient way. Only by doing this will we be able to reduce the postoperative mortality. All age groups of critically ill patients would benefit from these standards being followed, but the most high-risk elderly and frail patients will do so most of all."

theguardian

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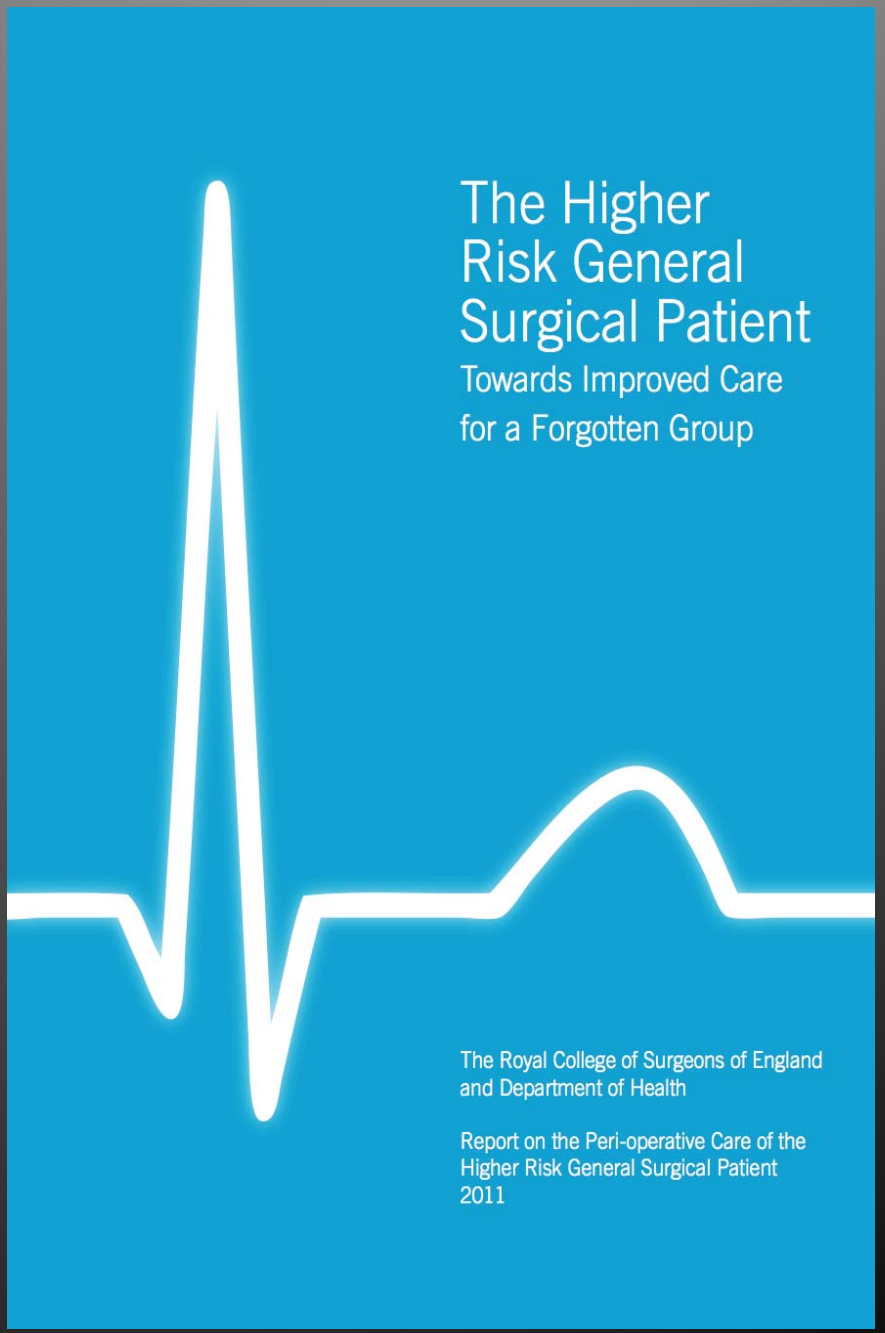
News › Society › NHS

Poor NHS care puts lives of emergency surgery patients 'at risk'

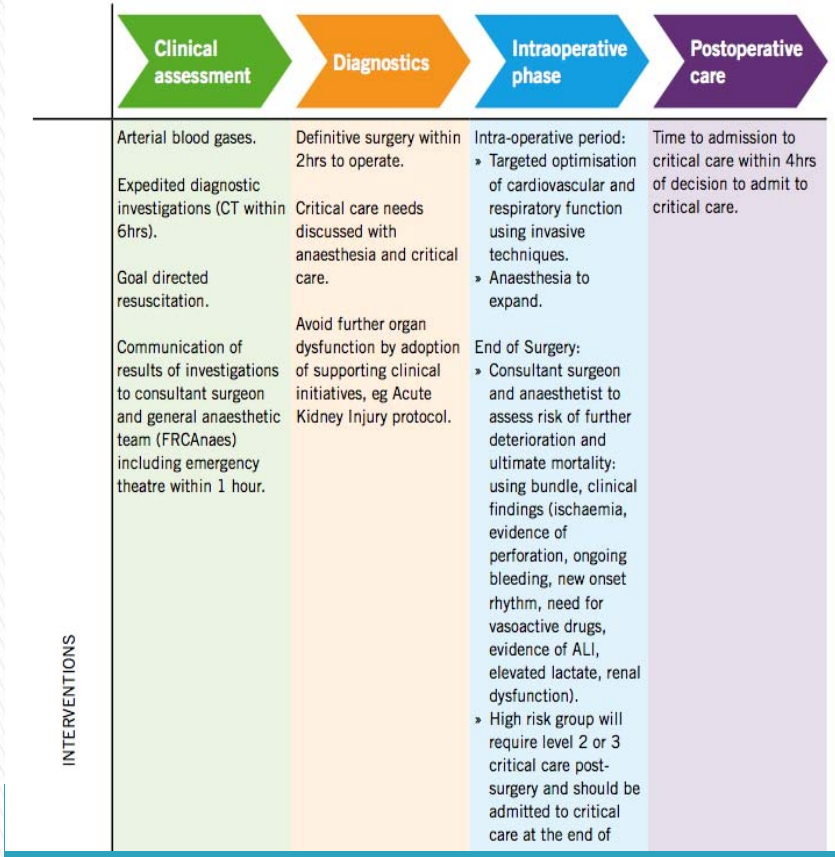
Report finds that delays in finding operating theatre spaces lead to deaths while only one in three receives critical aftercare

Sam Jones and agencies
guardian.co.uk, Thursday 29 September 2011 09.02 BST
Article history

The Royal College of Surgeons report found a patient's chance of survival after a critical operation varied widely between NHS hospitals. Photograph: Christopher Furlong/Getty Images



What the "Higher Risk General Surgery Patient" report says….



	Clinical assessment	Diagnostics	Intraoperative phase	Postoperative care
INTERVENTIONS	Arterial blood gases. Expedited diagnostic investigations (CT within 6hrs). Goal directed resuscitation. Communication of results of investigations to consultant surgeon and general anaesthetic team (FRCAnaes) including emergency theatre within 1 hour.	Definitive surgery within 2hrs to operate. Critical care needs discussed with anaesthesia and critical care. Avoid further organ dysfunction by adoption of supporting clinical initiatives, eg Acute Kidney Injury protocol.	Intra-operative period: » Targeted optimisation of cardiovascular and respiratory function using invasive techniques. » Anaesthesia to expand. End of Surgery: » Consultant surgeon and anaesthetist to assess risk of further deterioration and ultimate mortality: using bundle, clinical findings (ischaemia, evidence of perforation, ongoing bleeding, new onset rhythm, need for vasoactive drugs, evidence of ALI, elevated lactate, renal dysfunction). » High risk group will require level 2 or 3 critical care post-surgery and should be admitted to critical care at the end of	Time to admission to critical care within 4hrs of decision to admit to critical care.

- Mortality is high
- Recognise and measure the problem
- All patients with a > 10% risk of death should be admitted to critical care

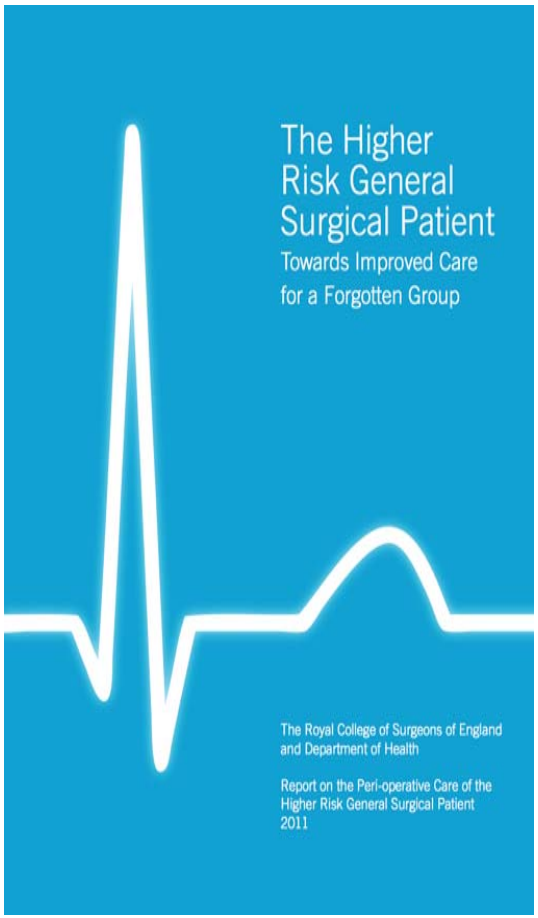
Standardise care based on objective measures

>10% mortality risk admit to critical care

The End of Surgery Bundle
C.J.Peden, R. Resar. IHI.

To be completed by anaesthetist during final 30 minutes of surgery to establish fitness for extubation and post-operative destination based on risk

- ABG taken (lactate or base deficit) and analysed
- Temperature measured and recorded
- Reversal of muscle relaxants assessed with nerve stimulator
- Documentation of ongoing fluid needs
- Risk score the patient



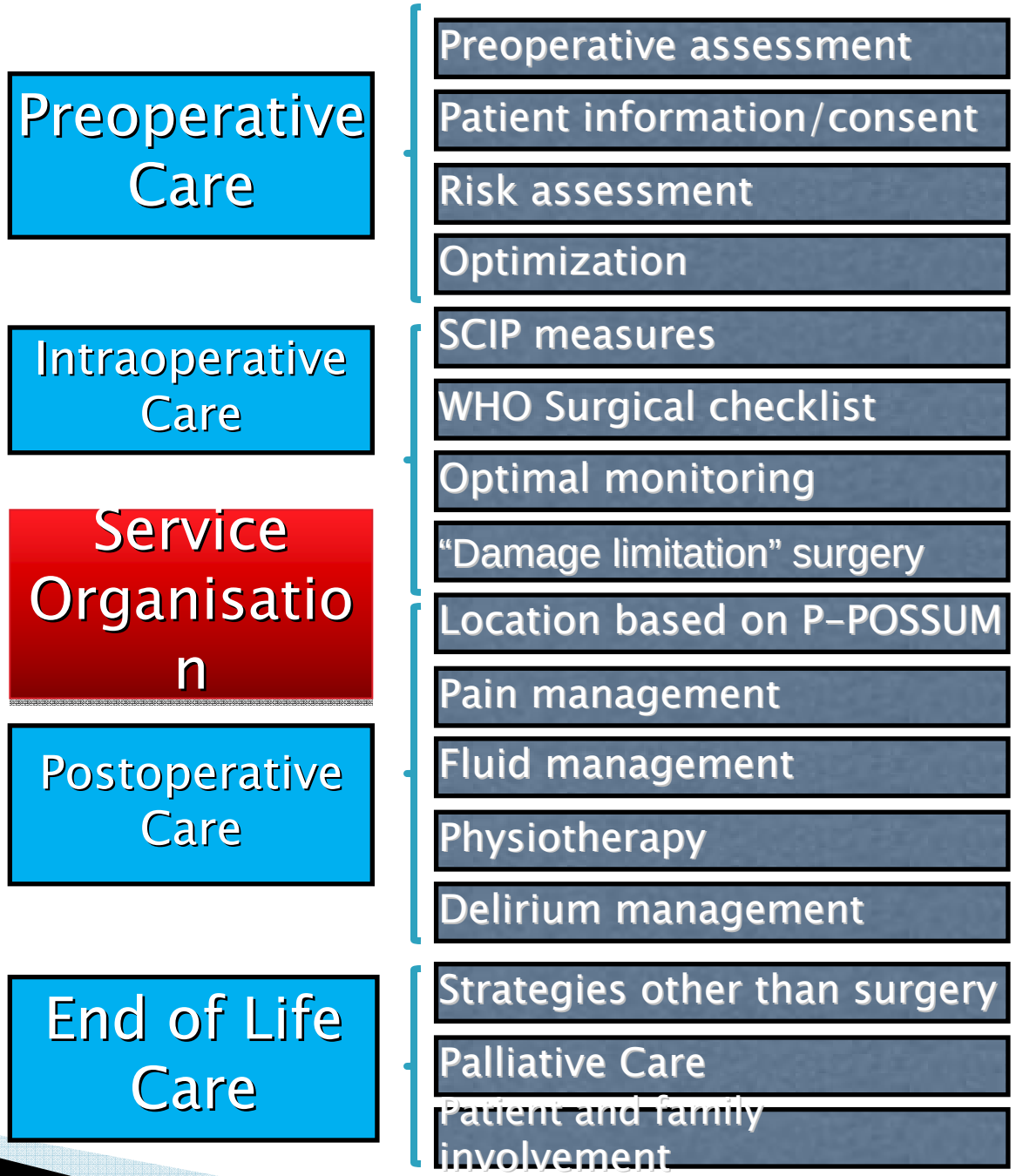
Driver diagram

- The Driver Diagram: Tells us everything in the system that we need to work on to reach our aim
- Primary Drivers: Tells us the BIG categories of work needed to reach our aim
- Secondary Drivers: the changes we need to make to complete the Primary Driver
- Change Package: what we actually have to do to make the changes work

Improving Outcomes for High Risk Surgical Patients

Decrease:
Mortality
Complications
Cost

Peden CJ. Emergency Surgery in the Elderly Patient: A Quality Improvement Approach. Anaesthesia 2011; 66:435-445



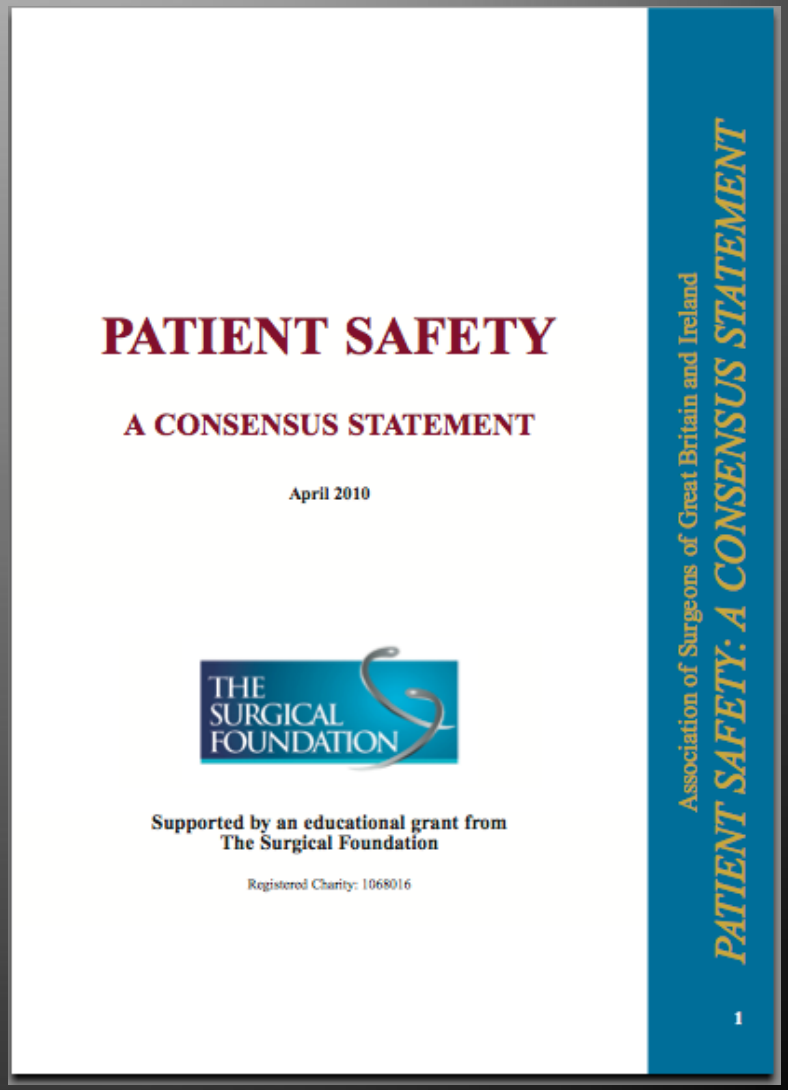
Health Affairs 2011; 30:636-645

2500 fewer Michigan surgical patients with complications

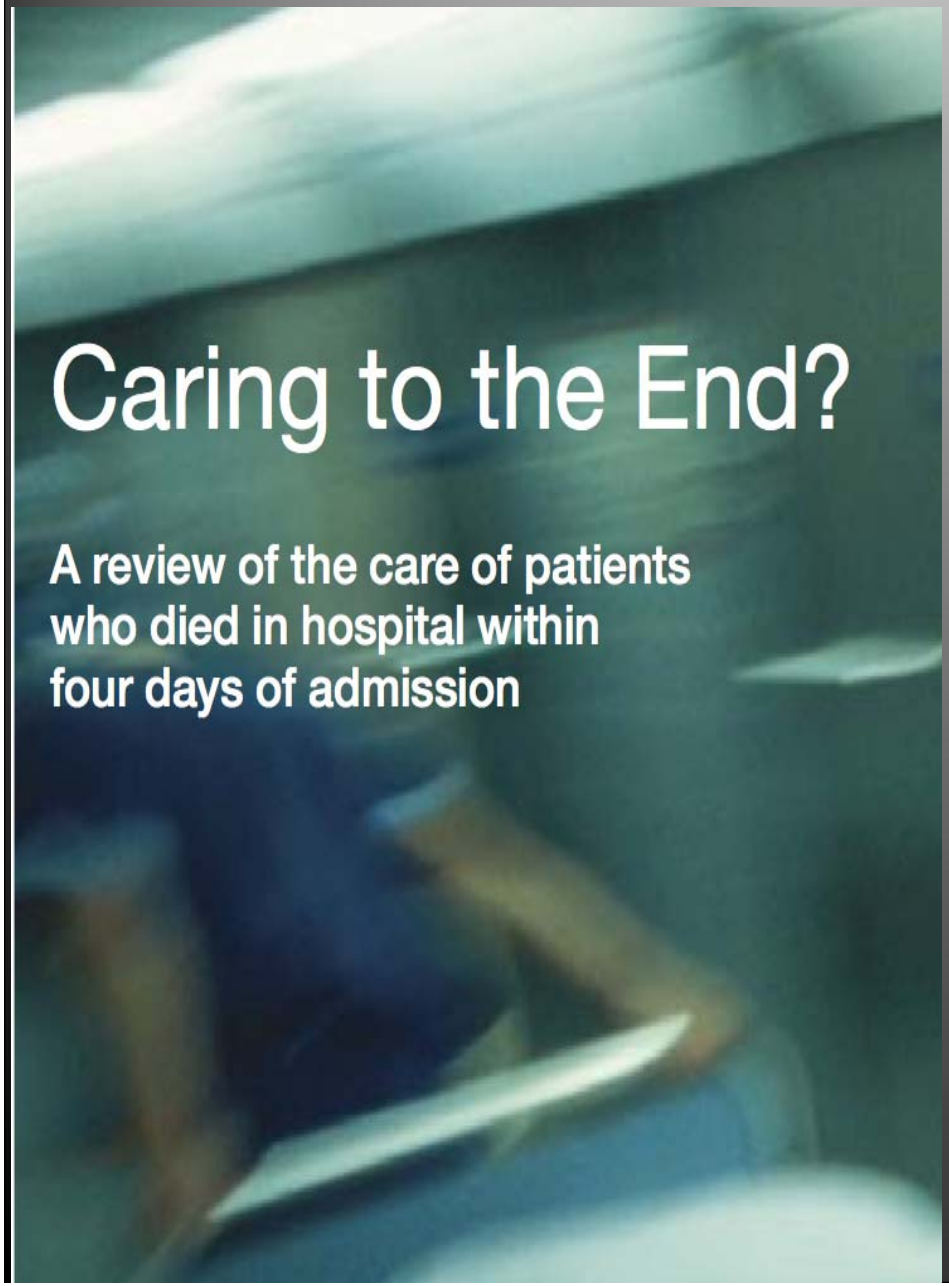
$20,000,000 savings

We know what to do…..
We have will and ideas

- Venous thrombo-prophylaxis
- Pre-operative assessment
- Sepsis management
  - Surviving sepsis care bundles
- Peri-operative fluid management
- Dynamic Monitoring of cardiac output
- Communication and handover



Caring to the End NCEPOD 2009



- Clinically important delay in first review by a consultant
- Poor communication between and within clinical teams in 13.5%
- 16.9% of patients not expected to survive at admission, no discussion of treatment limitation
- Poor fluid and electrolyte management
- Failure of audit and critical incident reporting
- Neglect of VTE and antibiotic prophylaxis

NCEPOD 2010 and 2011
The High Risk Surgical Patient

- Could do better
- Delays are associated with poor outcome
- "Ongoing need for Level 2 and 3 care to support major surgery in the elderly"
- Post-operative renal failure an issue

In Summary

- This report confirms that we are right to be concerned about the management of the high risk surgical patient
- Risk assessment is key
- Increased investment and critical care utilisation urgently needed
- We should standardise the standardisable
- Deliver reliable care
- Goal – Less death, morbidity and cost

NCEPOD 2011…the "tipping point" for the high risk surgical patient?

- *"Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has."*

  Margaret Mead US Anthropologist

"I have been impressed with the urgency of doing. Knowing is not enough; we must apply. Being willing is not enough; we must do."

Leonardo da Vinci