Patient outcomes are better with guideline driven care

Proposed by
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“The Obstetric Anaesthetists' Association (OAA) was formed in 1969 to promote the highest standards of anaesthetic practice in the care of mother and baby”
“Strive for perfection in everything that we do. Take the best that exists and make it better”
Passenger outcomes are better when driven in which Robin?
“All obstetric anaesthetists look the same”
A spectrum of obstetric anaesthetists
A DOCTOR who failed to anaesthetise a woman properly during a caesarean section picked up a piece of equipment from the hospital floor and licked it "clean" before putting it into her mouth, a medical tribunal was told yesterday.

Dr John Evans-Appiah, who also faces charges over his treatment of a boy who died in a dentist's chair, told a surgeon to begin operating on Hazel Woolger, despite her complaints that she could still feel pain in her abdomen.

She screamed and writhed while giving birth to a healthy baby and told her husband that the experience was like "something out of a horror film". The surgeon who delivered the baby at Maidstone hospital, Kent, was unable to begin repairing her uterus because she was still not properly anaesthetised. It was only then that Dr Evans-Appiah placed her under a general anaesthetic.
Is this a one off?

“The relatively large proportion of claims relating to pain during caesarean section suggests a need to improve intra-operative management of regional anaesthesia.”

Bogod et al. Anaesthesia 2010; 65: 443-652
Wouldn’t it be NICE…

Caesarean section

Issued: November 2011  last modified: August 2012

NICE clinical guideline 132
guidance.nice.org.uk/cg132
1.6.3.2
Women should be offered diamorphine (0.3–0.4 mg intrathecally) for intra- and postoperative analgesia
Guidelines: of the people, by the people and for the people

- The OAA website contains 27 areas of guidelines from hospital Trusts throughout the UK
- Your guidelines from your hospitals, with some helpful peer review critique from the subcommittee
- Request for new and updated guidelines on the website
Guidelines in obstetric anaesthesia

- **Homogenous** population
  
  Mainly 16-40, healthy, ASA I

- **High** stakes
  
  Two lives, carer for others

- **Hyperdynamic** physiology
  
  Rapid deterioration once physiological reserve exhausted
Guidelines vs. Protocol

Guideline: democratic
a line for guiding
a directing or standardizing principle laid down as a guide to procedure, policy

Protocol: dictatorial
The accepted or established code of procedure, rules, formalities, etc., of any organization
Royal Protocol
The dos and don'ts of meeting Her Maj, Queen Elizabeth II

DON’T speak unless spoken to
DO follow the dress code
DON’T touch the Queen
DO use the highest applicable official address
DON’T ask about the royal relations
DON’T offer a handshake
DO keep handshakes short
Three types of Guidelines

Every Second Counts

Singing from the same hymn sheet

The devil is in the detail
Every Second Counts

Emergency scenarios

- Anaphylaxis
- Malignant Hyperpyrexia
- Lipid rescue for LA Toxicity
- Difficult/Failed Intubation
Every Second Counts

Emergency scenarios

Performance
(physical & mental)

High

Medium

Low

Low (underload)

Medium

High (overload)

Arousal level

Laid back

Best (optimum) performance

Anxious

Panic, anger, or violence

stress zone
“It was very quiet as we worked, my co-pilot and I. We were a team. But to have zero thrust coming out of those engines was shocking—the silence.”

Chesley Sullenberger
- Calm
- Guideline driven
- Experience
- 5 P’s
- Accepting the facts
- Not stuck in a loop
- Move forwards to next key decision
Admitted for an elective nose operation, March 2005

37 year old mother
2 recent C-sections, under regional anaesthesia
Congenitally fused cervical vertebrae
Mallampati Grade 2 with good flexion/extension
Timeline

08:35    Induction with remi and propofol
08:36    Unable to insert flexible LMA.
08:37    SpO2  75% with tachycardia.
08:39    SpO2  40%
08:41    SpO2  40%. HR 40. Atrop and Sux
08:45    Grade IV view. Difficult Ventilation
Elaine Bromiley

“This situation is an emergency and requires rapid and appropriate action if it is not to end in disaster.”

“In recent years, the Difficult Airway Society (DAS) has produced guidelines for exactly this eventuality.”

“I would have expected Dr A to follow the guidelines”
Can’t intubate, can’t ventilate

"can't intubate, can't ventilate" situation with increasing hypoxaemia

Plan D: Rescue techniques for "can't intubate, can't ventilate" situation

**Cannula cricothyroidotomy**
- Equipment: Kink-resistant cannula, e.g. Patil (Cook) or Ravussin (VBM)
- High-pressure ventilation system, e.g. Manujet III (VBM)
- Technique:
  1. Insert cannula through cricothyroid membrane
  2. Maintain position of cannula - assistant's hand
  3. Confirm tracheal position by air aspiration - 20ml syringe
  4. Attach ventilation system to cannula
  5. Commence cautious ventilation
  6. Confirm ventilation of lungs, and exhalation through upper airway
  7. If ventilation fails, or surgical emphysema or any other complication develops - convert immediately to surgical cricothyroidotomy

**Surgical cricothyroidotomy**
- Equipment: Scalpel - short and rounded (no. 20 or Minitrach scalpel)
- Small (e.g. 6 or 7 mm) cuffed tracheal or tracheostomy tube
- 4-step Technique:
  1. Identify cricothyroid membrane
  2. Stab incision through skin and membrane
  3. Caudal traction on cricoid cartilage with tracheal hook
  4. Insert tube and inflate cuff
- Ventilate with low-pressure source
- Verify tube position and pulmonary ventilation

fail
“Even if the guidelines had been followed, there is no guarantee that the outcome would have been different but patients have survived similar unexpected events where emergency airway access has been provided”

“The clinicians became oblivious to the passing of time and thus lost opportunities to limit the extent of damage caused by the prolonged period of hypoxia.”
Failed obstetric intubation guidelines

- Ipswich Hospital
- North Bristol NHS Trust
- Poole Hospital NHS Foundation Trust
- Queen Charlotte's Hospital London
- Sandwell & West Birmingham Hospitals NHS Trust
- Southampton University Hospitals NHS Trust

**Note:** Please note that these guidelines will not be reviewed as per the expected 3 (three) year review because the OAA and DAS are currently in the process of designing a National guideline on this topic.
Singing from the same hymn sheet
Singing from the same hymn sheet

**Major obstetric haemorrhage**
Many different people have to work effectively together.

Guidelines are a vital aid for communication and to ensure best practice.

Help ensure a systematic approach
Singing from the same hymn sheet

Help
Establish aetiology
Massage
Oxytocin and prostaglandins
Shift to theatre
Tamponade
Apply compression sutures
Systematic pelvic devascularisation
Interventional radiology
Subtotal/total hysterectomy
Singing from the same hymn sheet

Outcomes
Deaths due to maternal haemorrhage have fallen in the UK

Potential to save hundreds of thousands of lives worldwide
The devil is in the detail

Puerperal Sepsis
Disease transmission

- **Handwashing** puerperal fever, Ignaz Semmelweis (1847)
- **Water contamination**, Cholera John Snow (1854)
- **Germ** theory of infection, Louis Pasteur (1860)

Antibiotics

- **Penicillin**
  Alexander Fleming (1928)
The devil is in the detail

Surviving Sepsis Campaign (2004, 2008 and 2013)
Evidence based guidelines for detection and treatment of sepsis

+ Organisational change, with priority given to patient safety

+ Change in individual attitudes: patients and staff
The devil is in the detail

Surviving Sepsis Campaign (2004, 2008 and 2013)
Does it affect outcome?

Of 15,022 admissions to ITU between 2005 and 2008, unadjusted hospital mortality fell from 37% to 30.8%

[Critical Care Medicine 2010; 38: 367-74]
The devil is in the detail

1000 Lives Campaign, Wales
Does it affect outcome?

Reduction in Hospital Standardised Mortality from sepsis
1,199 lives saved between 2008 and 2010
The devil is in the detail

**Venous Thrombo-embolism**
25,000 deaths per year in UK cited in 2004/5 House of Commons report which identified inconsistent:

- identification of high risk patients
- application of prophylaxis measures
The problem with guidelines….

1. They can be taken as Gospel

The **audit standard** of 30 minutes from Decision to Delivery Interval in NICE CG 13 (2004) has been taken as a **Critical Threshold**

29 minutes Good  
31 minutes Bad
The problem with guidelines….

2. They may be out of date
NICE CG 132 advice about anaesthesia for C-section has not changed since 2004, despite being updated in 2011!

- Evidence about phenylephrine vs ephedrine
- Crystalloid preload vs co-load
- Fetal distress with spinal vs GA
The problem with guidelines…. 

2. They may be out of date

What fibrinogen level is desirable in major obstetric haemorrhage?

- Current  > 1 g L\(^{-1}\)
- Liverpool Women’s  > 2 g L\(^{-1}\)
- Obs-2  > 4 g L\(^{-1}\)

(Normal range for term pregnancy is 4 – 6 g L\(^{-1}\))
The problem with guidelines….

3. They need to change practice to make a difference to patient outcomes.

A guideline can do little without education, acceptance and incorporation into daily clinical practice.
The problem with guidelines…. 

3. They need to change practice to make a difference to patient outcomes

In an emergency, situational awareness and crew resource management are essential for guideline driven care.
The problem with guidelines….

4. Medicine is an art, not a science.
The problem with guidelines….

4. Medicine is an art, not a science.

2001 International Sepsis Definitions Conference

…few, if any, patients in the early stages..are diagnosed with sepsis via four arbitrary criteria

the clinician goes to the bed side, identifies myriad symptoms, and regardless of any evident infection declares the patient to “look septic”.

University of Liverpool

Liverpool Women’s NHS Foundation Trust
Alright, but apart from failed intubation, anaphylaxis, lipid rescue, malignant hyperthermia, massive obstetric haemorrhage and venous thromboembolism, what has guideline driven care ever done to make patient outcomes better?

Saved 1,199 lives from Sepsis?

Oh, Sepsis – shut up!