

Major 2011 articles in obstetrics

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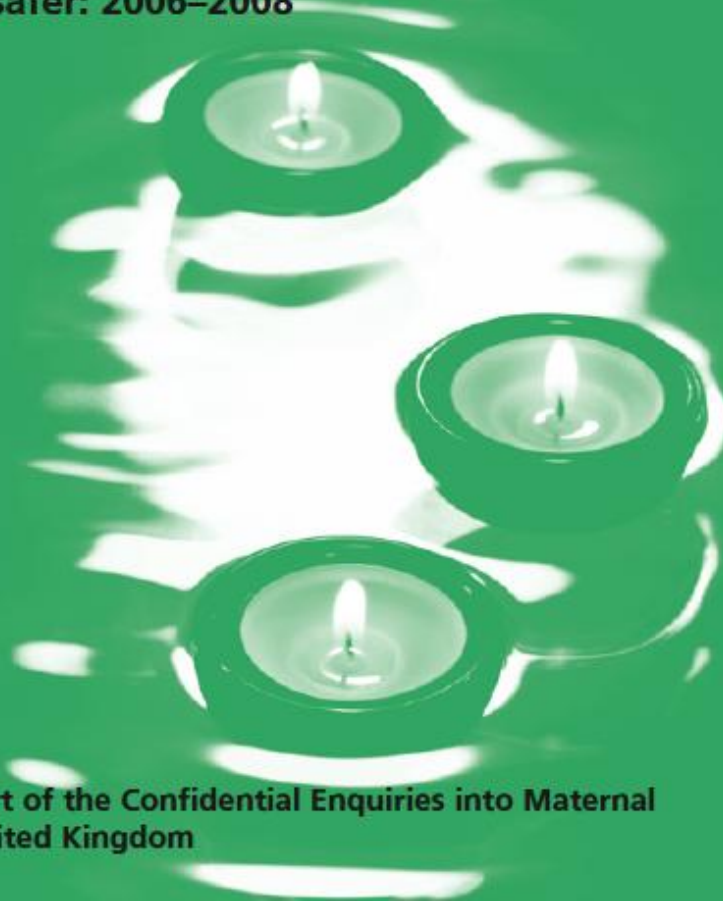
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Saving Mothers' Lives

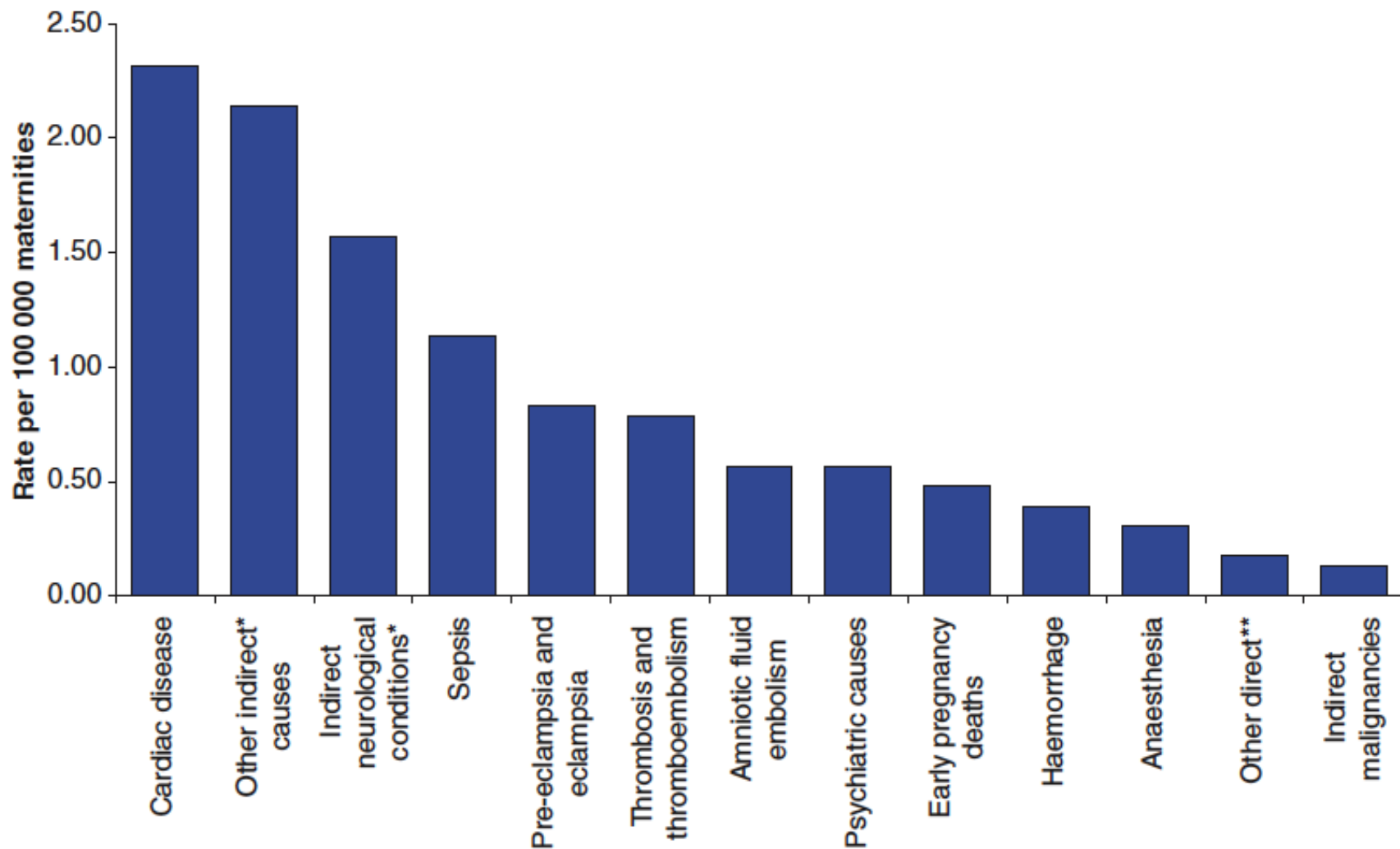
**Reviewing maternal deaths to make
motherhood safer: 2006–2008**



March 2011

**The Eighth Report of the Confidential Enquiries into Maternal
Deaths in the United Kingdom**

Leading causes of maternal death per 100 000 maternities: UK 2006–08



Trends in pregnancy hospitalizations that included a stroke in the USA from 1994 to 2007

Kuklina EV et al, Stroke 2011;42:--

- Discharge data from a large sample of US hospitals
- Rate of any stroke (subarachnoid hemorrhage, intracerebral hemorrhage, ischemic stroke, transient ischemic attack, cerebral venous thrombosis, or unspecified)
 - among antenatal hospitalizations increased by 47% ((from 0.15 to 0.22 per 1000 deliveries)
 - while remaining unchanged at 0.27 for delivery hospitalizations.

Key findings for anesthesia care

- 7 women who died from a direct anaesthetic cause:
 - Failure to ventilate the lungs (two deaths)
 - Too late top up of an epidural in place for an emergency cesarean section (sustained bradycardia)
 - Aspiration of gastric contents on emergence from GA after an emergency CS for hemorrhage
 - Opiate toxicity (PCA) (1 death)
- Substandard care in 6 /7 cases
- 18 deaths in which anesthesia contributed
- Severe, acute illness in a pregnant woman requires multidisciplinary teamwork.
- An anaesthetist and/or critical-care specialist should be involved early (12 deaths from preeclampsia but also cases of sepsis or postpartum hemorrhage)

Beyond the numbers: classifying contributory factors and potentially avoidable maternal deaths in New Zealand, 2006–2009

Farquhar C et al, AJOG 2011;205:331.e1-8

- 49 deaths (19.2/100.000 maternities)
- 35 % of cases potentially avoidable
- Contributory factors in 55 % of cases
- Nearly always 2-3 domains with contributory factors identified
- Organizational and/or management factors
- Factors relating to personnel
- Factors relating to equipment or technology
- Factors relating to environment
- Barriers to accessing/engaging with care

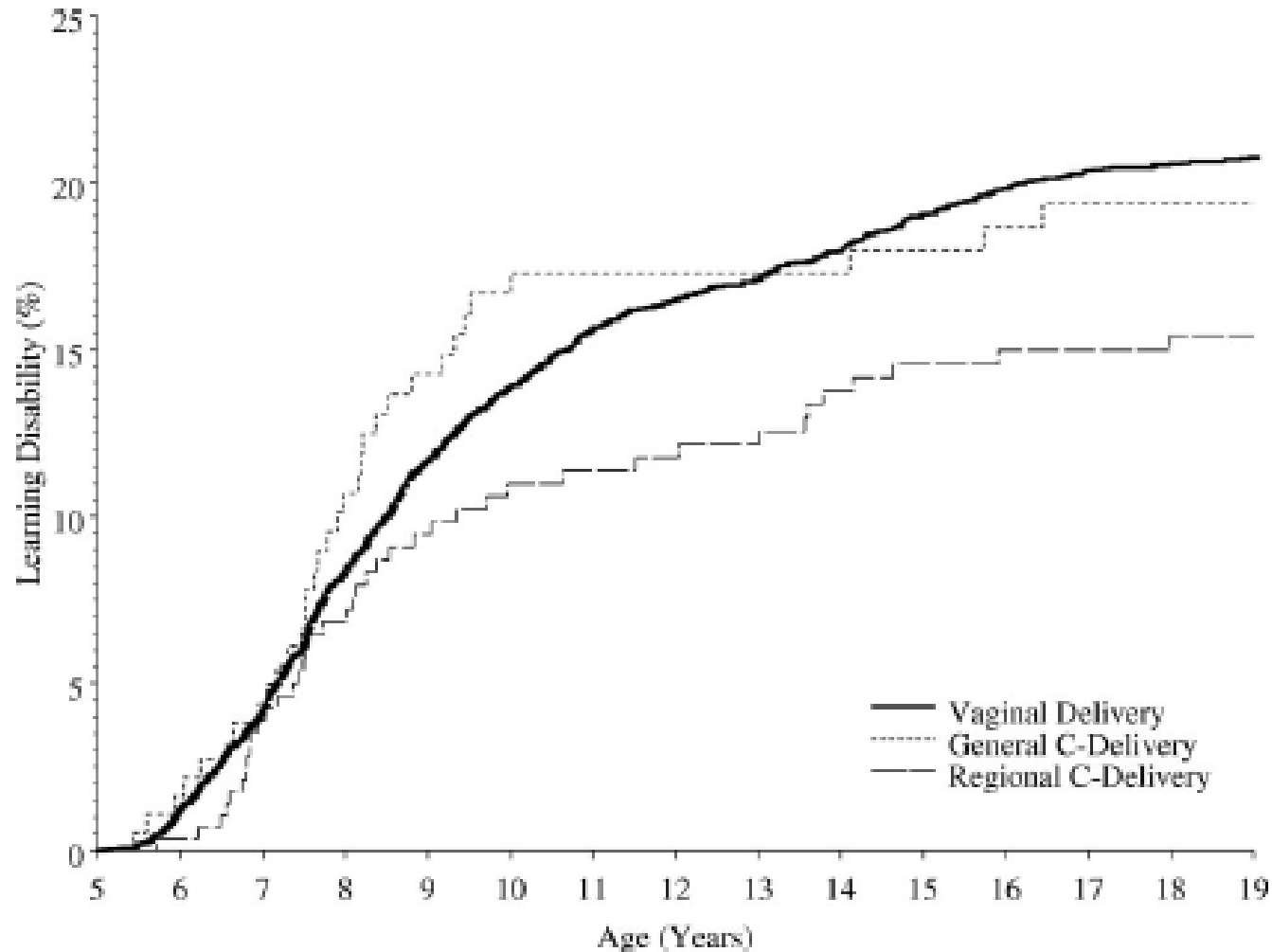
Anesthesia for cesarean delivery and learning disabilities in a population-based birth cohort

Sprung J et al, Anesthesiology 2009;111:302-10

- ◆ Olmsted county, Minnesota, USA
- ◆ Children born between 1976 et 182 and who had lived there ≥ 5 years
- ◆ Type of anesthetic technique used for childbirth and subsequent learning disabilities during childhood
- ◆ 5320 children of whom 497 were born by Cesarean delivery (GA = 193) (RA= 304)

Anesthesia for cesarean delivery and learning disabilities in a population-based birth cohort

Sprung J et al, Anesthesiology 2009;111:302-10



Neuraxial labor analgesia for vaginal delivery and its effects on childhood learning disabilities
Flick RP, Anesth Analg 2011;112:1424-31

- 4684 women delivered vaginally
- of whom 1495 received neuraxial labor analgesia
- Regional anesthesia not associated with learning disabilities

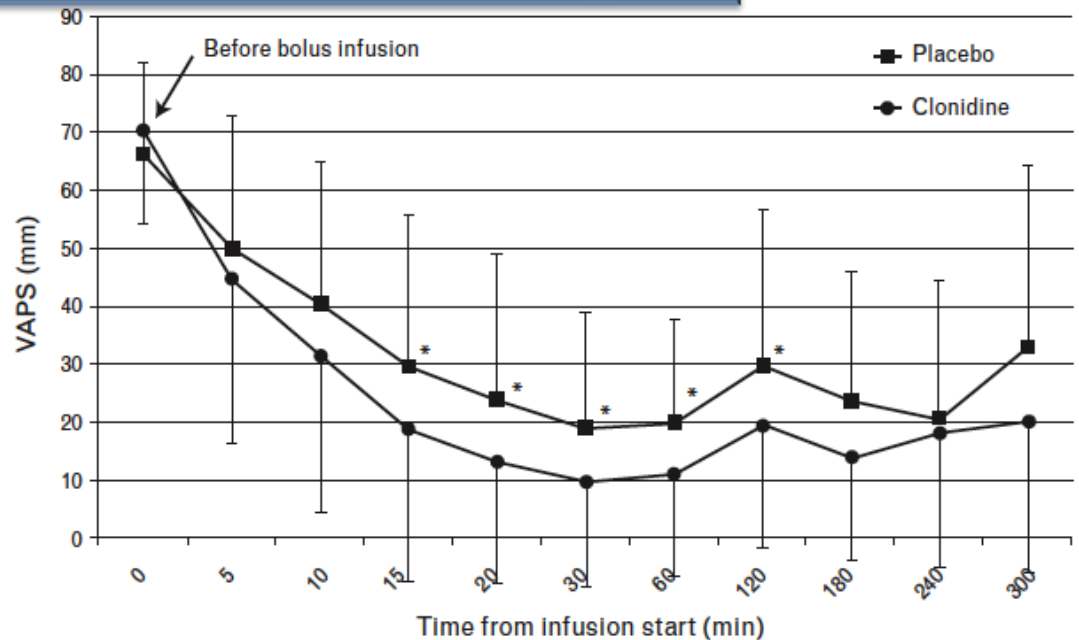
Effects of a continuous low-dose clonidine epidural regimen on pain, satisfaction and adverse events during labour: a randomized, double-blind, placebo-controlled trial

Florent Wallet, Henri Jacques Clement, Carine Bouret, Felix Lopez, Françoise Broisin, Corine Pignal, Mathieu Schoeffler, Edith Derre, Bruno Charpiat, Cyril Huissoud, Frédéric Aubrun and Jean Paul Viale

- ◆ n = 128, randomized study
- ◆ Levobupivacaine 0.625 mg.mL^{-1} + sufentanil $0.25 \text{ }\mu\text{g.mL}^{-1}$
- ◆ With or without clonidine $2 \text{ }\mu\text{g.mL}^{-1}$

Clonidine

- ◆ Reduces the number of additional boluses
- ◆ Reduces the rate of pruritus
- ◆ Satisfaction unchanged
- ◆ Minor decrease in blood pressure



Addition of clonidine to a continuous PCEA infusion of low-concentration levobupivacaine plus sufentanil in primiparous women during labour

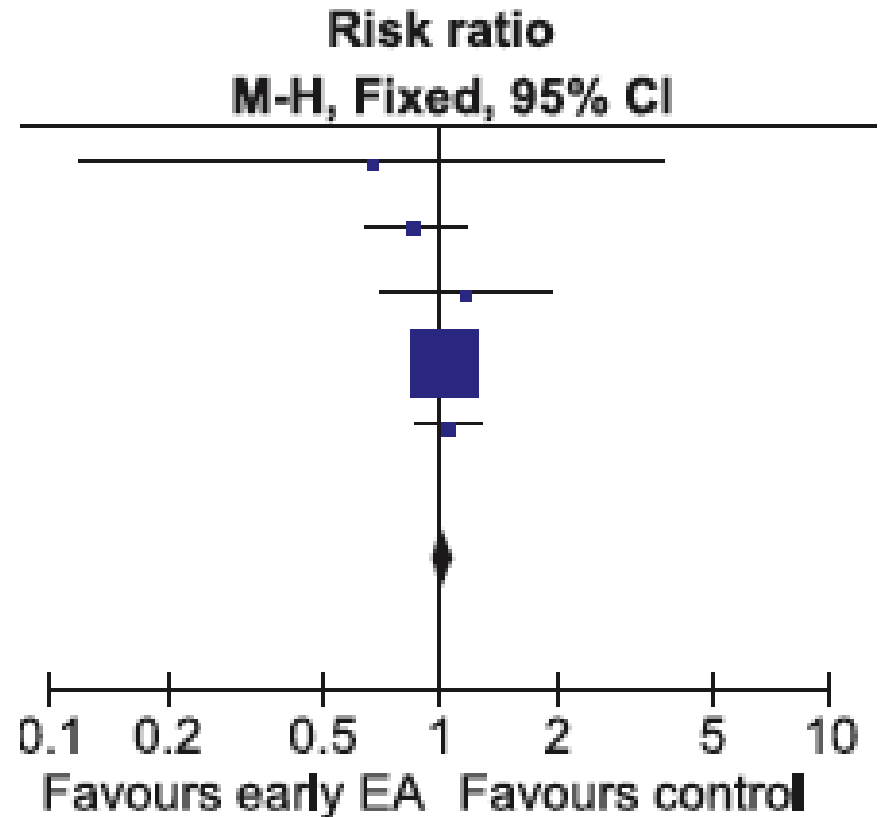
Bazin M et al, Anaesthesia 2011; 66: 769-79

- n = 115, randomized study
- Bags with 100 ml levobupivacaine 0.0625% plus sufentanil 0.45 $\mu\text{g}.\text{ml}^{-1}$
- 150 μg of or without clonidine (1.36 $\mu\text{g}.\text{ml}^{-1}$)
- Boluses: 5 mL, lockout interval 10 min, baseline infusion: 5 $\text{mL}.\text{h}^{-1}$
- Lower pain scores and reduced need of PCEA boluses
- Better satisfaction
- Blood pressure lower but no more hypotensive episodes
- Instrumental delivery rate higher but motor block NS

Early versus late epidural analgesia and risk of instrumental delivery in nulliparous women

Wassen MMLH et al, BJOG 2011;118:655-61

- Systematic review
- 5 RCT
- Risk of caesarean delivery (risk ratio 1.02) or instrumental vaginal delivery (risk ratio 0.96) not significantly different between groups.



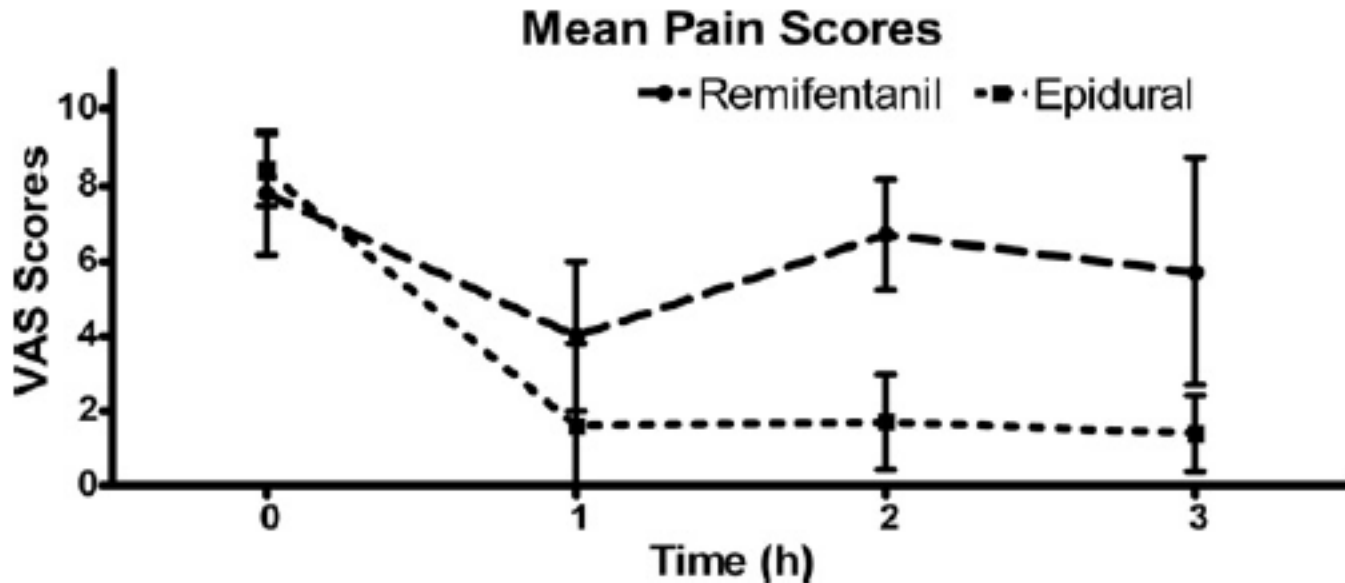
No reduction in instrumental vaginal births and no increased risk for adverse perineal outcome in nulliparous women giving birth on a birth seat

Thies-Lagergren L et al, BMC Pregnancy and Childbirth 2011;11:22

- WHO advises against recumbent or supine position for longer periods during labour and birth and states that caregivers should encourage and support the woman to take the position in which she feels most comfortable
- 1002 women randomized to birth on a birth seat (20 mn periods during the 2nd stage) or in any other position
- Incidence of instrumental delivery (13.6 vs 16.4 %, NS)
- Increase in moderate blood loss

A randomised comparison of intravenous remifentanyl PCIA with epidural ropivacaine/ sufentanil during labour

Douma MR et al, IJOA 2011;20:118—23



- Oxygen saturation lower in the remi group (95 vs 99 %)
- Patient satisfaction similar
- No differences in neonatal outcome

The volume of blood for epidural blood patch in Obstetrics

Paech MJ et al. Anesth Analg 2011;113:126-33

- 123 women after unintentional dural puncture
- Multicenter trial over 5 years
- 5 days follow up
- 3 volumes tested: 15, 20 and 30 mL
- Incidence of permanent or partial relief: 61, 73 and 67 %
- Complete relief: 10, 32, 26 %
- Headache score over 48H highest in the 15 mL group

« Although the optimum volume of blood remains to be determined, we believe these findings support an attempt to administer 20 mL of autologous blood.. »

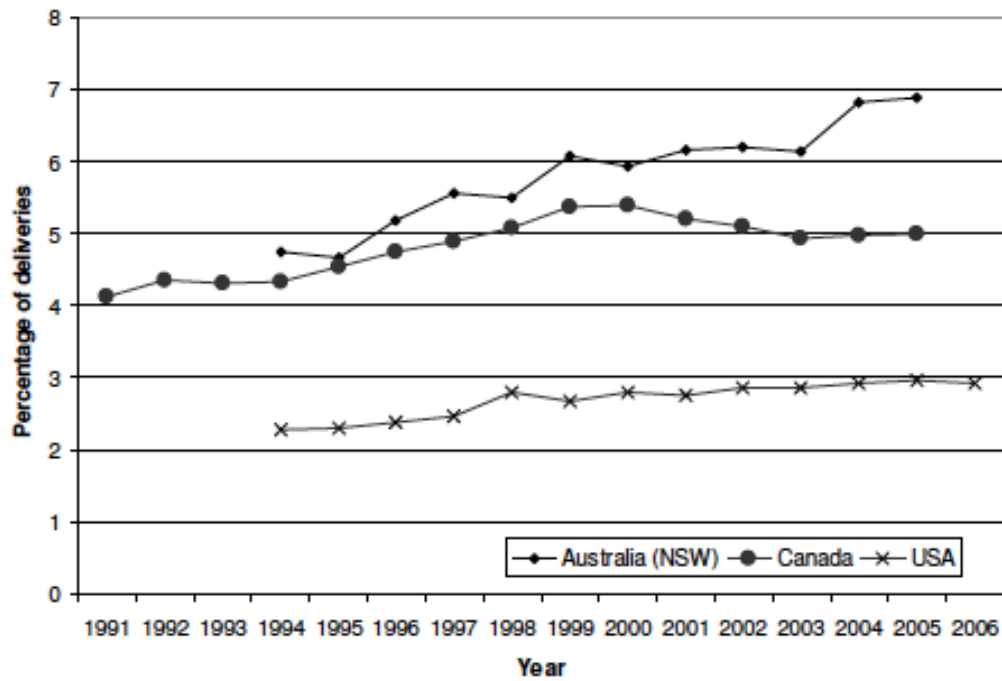
Research article

Open Access

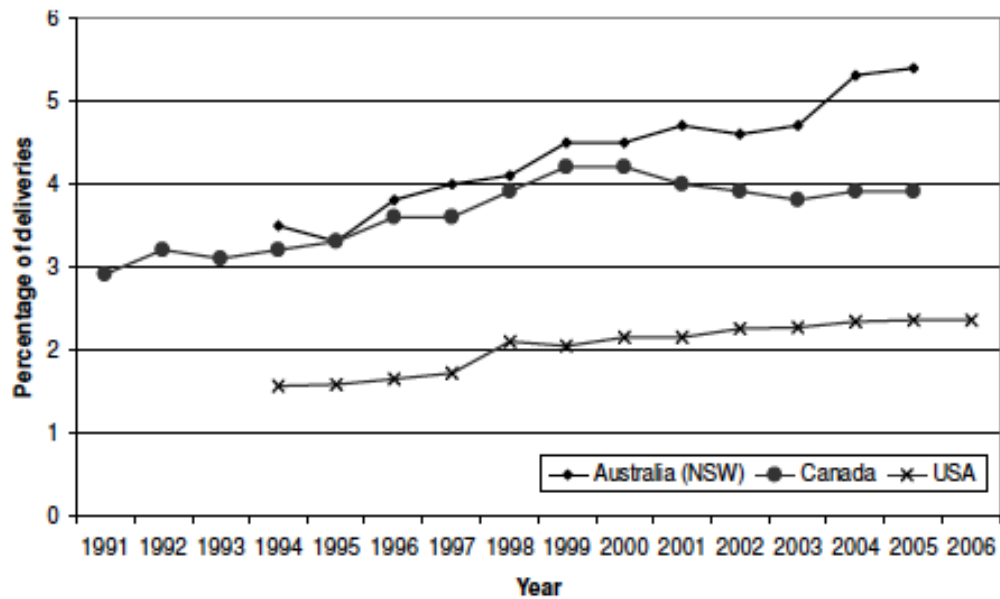
Trends in postpartum hemorrhage in high resource countries: a review and recommendations from the International Postpartum Hemorrhage Collaborative Group

Marian Knight*¹, William M Callaghan², Cynthia Berg², Sophie Alexander³, Marie-Helene Bouvier-Colle⁴, Jane B Ford⁵, KS Joseph^{6,11}, Gwyneth Lewis^{1,7}, Robert M Liston⁸, Christine L Roberts⁵, Jeremy Oats⁹ and James Walker¹⁰

- Increasing rate whatever the underlying definition and the country studied
- Solely due to atony
- Increased adverse outcomes due to hemorrhage
- Increasing maternal age, obesity
- Increased rate of multiple pregnancies
- Increasing use of caesarean delivery and induction



Total cases



Atonic PPH

CASE RECORDS of the MASSACHUSETTS GENERAL HOSPITAL

Nancy Lee Harris, M.D., *Editor*
Jo-Anne O. Shepard, M.D., *Associate Editor*
Sally H. Ebeling, *Assistant Editor*

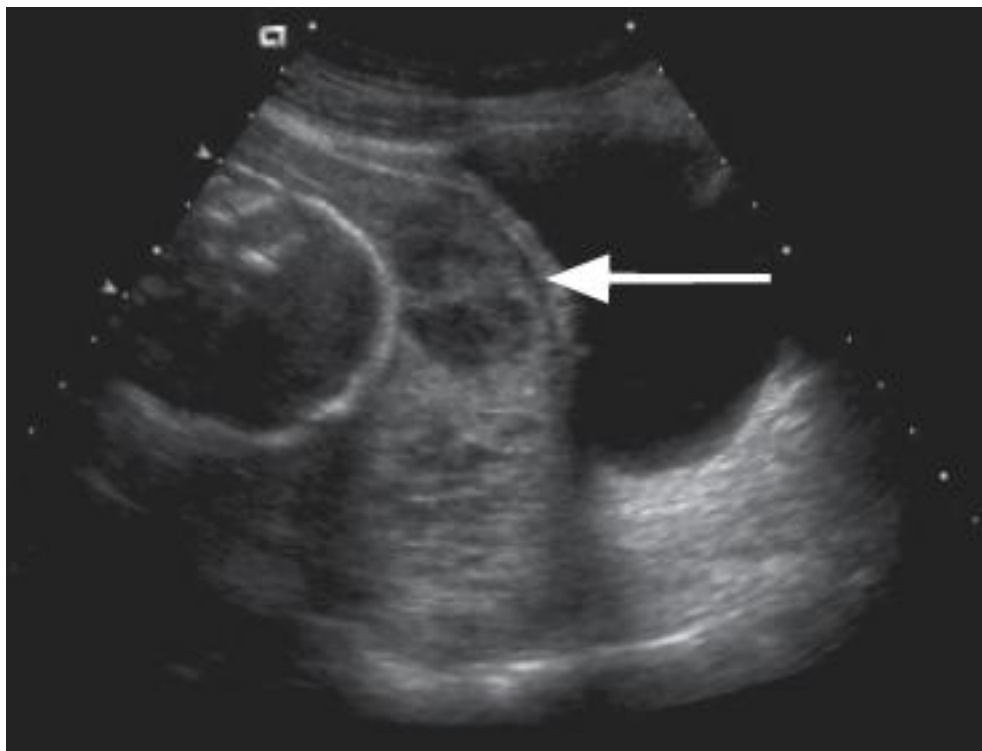
Founded by Richard C. Cabot

Eric S. Rosenberg, M.D., *Associate Editor*
Alice M. Cort, M.D., *Associate Editor*
Christine C. Peters, *Assistant Editor*



Case 23-2011: A 40-Year-Old Pregnant Woman with Placenta Accreta Who Declined Blood Products

Barth, Jr., M.D., Christopher J. Kwolek, M.D., Joshua L. Abrams, J.D.,
Jeffrey L. Ecker, M.D., and Drucilla J. Roberts, M.D.



Large and irregular echolucent spaces within the placental stroma and loss of the normal hypoechoic myometrial band

Practice patterns and organization of care

Hemorrhage protocols improve patient safety and reduce blood products use
Shields LE et al, AJOG 2011

- Protocol designed and implemented locally
 - Risk assessment
 - Early/limited use of oxytocic drugs
 - Early presence of staff (anesthesia and OB)
 - Transfusion using fixed ratios
- More rapid resolution of PPH
- Use of fewer blood products
- Increased staff perception of safety

Clinical audit: a useful tool for reducing severe PPH?

Dupont C et al, Int J Qual Health care 2011

- Before and after study, 2 maternity units
- Quarterly clinical audit meetings to discuss all cases of severe PPH
- Decrease in incidence of severe PPH (2.1 to 0.6 %)
- Increasing proportion of cases managed according to the guidelines

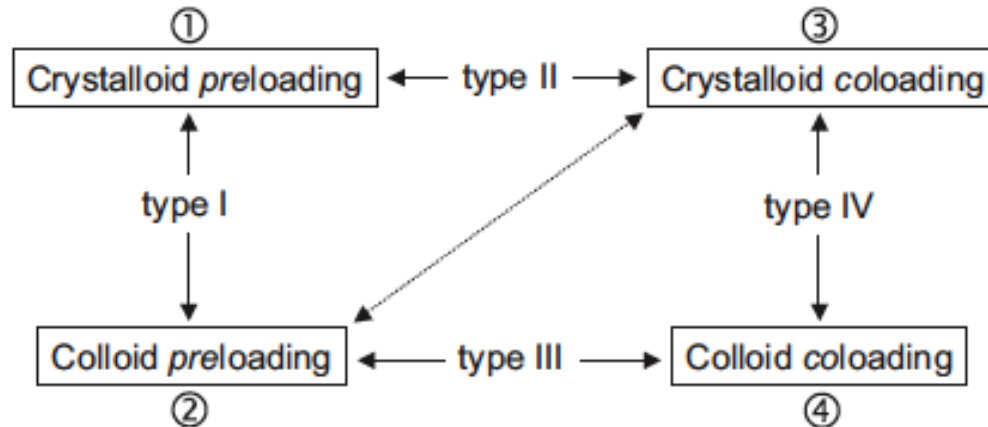
Conclusion

- Few important medical innovations in the field
- Rising rate of pregnant women with severe underlying disease
- Anesthesia-related death not dead!
- Many poor outcomes avoidable
- Practice patterns not always at a high level
- Contributing factors (organization, communication) increasingly recognized

- **Predictive factors of major blood loss in P accreta**
- **Hysteroscopy after uterine squares**
- **Morbid obesity and epidural analgesia**
- **Audit and blood transfusion in Obstetrics Vox Sanguinis**
- **Low dose LMWH and risk of VTE**
- **100 % Oxygen resuscitation**
- **IGFBP1 and EA**
- **Non cardiogenic Pulm edema with atosiban**
- **Rising rates of caesarean deliveries at full cervical dilatation**
- **Pelvic Muscle Activation During Vaginal Delivery**
- **ED95 bupi morbidly obese CS**

Fluid loading for cesarean delivery under spinal anesthesia...

Mercier FM. Anesth Analg 2011, in press



- Crystalloid preloading (10–20 mL/kg RL solution) ineffective
- Colloid preload consistently reduces the incidence and the severity of hypotension
- Crystalloid coload (10–20 mL/kg RL solution) partly effective
- Colloid coload not better than colloid preload
- Crystalloid coload versus colloid coload?

Maternal Cardiac Output Changes After Crystalloid or Colloid Coload Following Spinal Anesthesia for Elective Cesarean Delivery

McDonald S et al, Anesth Analg 2011;113: 803-10

- n = 30 x 2, randomized study
- HES or Hartmann solution 1L under pressure at the time of spinal (CSE) injection
- Phenylephrine titrated to maintain baseline SBP
- Suprasternal cardiac output monitor

