

Great Western Hospitals **NHS** NHS Foundation Trust

Oxford Academic Health Science Network
Maternity

#NeoSIM #NeoPremQI

Perinatal Team Working to Implement Delayed Cord Clamping for Preterm Infants Delivered by Caesarean Section

Dr Sarah Bates
Dr Charlotte Sullivan
Great Western Hospital
15th March 2017

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BRITISH ASSOCIATION OF PERINATAL MEDICINE
Founded 1976

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Improving early perinatal care of premature babies (below 32 weeks) with a package of evidence based interventions to optimise long term outcomes.

Patient Sticker Here
 Name: _____
 DOB: _____
 Hosp No: _____
 NPO No: _____

Time of Birth: _____ Gestation: _____
 Mode of Delivery: _____ Birth Weight (g): _____

INTERVENTION & EVIDENCE	Criteria	To be completed
1 ANTENATAL STEROIDS	Full course (2 doses 12-24h apart)? if not - why? Date/Time of last dose?	Yes/No
2 ANTENATAL MAGNESIUM SULPHATE	Full dose? if not - why? Date/Time of completion?	Yes/No
3 EARLY BREAST MILK (A)	Antenatal counselling for mother re benefits of EBM Antenatal advice about early & frequent expressing Mother helped to hand OR prepump express <1hr after delivery	Yes/No Yes/No Yes/No
4 DELAYED CORD CLAMPING	Time of DCC (secs) A&B support during DCC Thermal Care during DCC	Yes/No Yes/No Yes/No
5 THERMAL CARE	Bag/wrap Admission Temp Appropriate humidity (80%)/incubator temp	Yes/No Yes/No Yes/No
6 RESPIRATORY MANAGEMENT	PEEP @ delivery Early surf (if intubated) VG ventilation (if vent) Appropriate SpO_2 target range (90-95%, alarm limits 88-96%) First CO_2 (aim 4.5-7kPa)	Yes/No Yes/No & How Yes/No Yes/No Yes/No
7 VITAMIN K	Dose & Time of administration (within 30 mins birth)	Yes/No
8 CAFFEINE	Time of administration (within 6h admission)	Yes/No
9 NUTRITION & GLUCOSE	Initial blood glucose (pppp/l) Time to blood glucose >3mmol/l Time TPN started & volume (ml/kg/day) Time lipid started	Yes/No Yes/No Yes/No Yes/No
3 EARLY BREAST MILK (B)	Colostrum to baby within 6h of delivery	Yes/No
10 PROBIOTICS	Probiotics started as per SW Network Protocol	Yes/No

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Advantages of Delayed Cord Clamping


↑ circulating blood volume after birth
Improved cardiovascular stability
↓ need for blood transfusion
↓ intraventricular haemorrhage (all grades) RR 0.59, 95% CI 0.41 to 0.85)
↓ risk of necrotising enterocolitis RR 0.62, 95% CI 0.43 to 0.90

For...“uncompromised preterm infants, a delay in cord clamping of at least one minute”... is recommended

NLS, 2015



Resuscitation Council (UK)

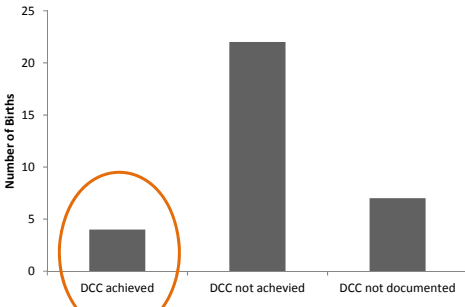


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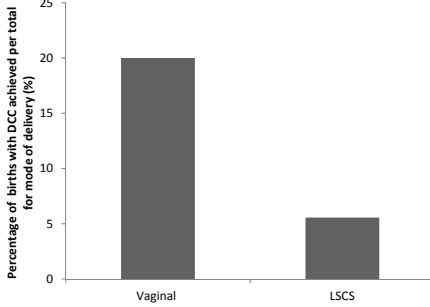
Audit

Audit demographic

- January 2013 – June 2016
- 33 babies were appropriate for audit
- Mean gestation 27⁺⁵ (range 23⁺² to 29⁺⁶).



DCC Status	Number of Births
DCC achieved	4
DCC not achieved	22
DCC not documented	7



Mode of delivery	Percentage (%)
Vaginal	20
LSCS	5

2016

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Structured Interview to Obstetricians, Midwives, Neonatologists, Neonatal Nurses

Attitudes

Neonatal Concerns

Obstetric Concerns

Environmental Challenges

Barriers

A 3D illustration of a white figure pushing a red and white striped barrier.

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Obstetric Team

Neonatal Team


Attitudes

Attitudes

Perinatal Team Working



"actively maintained between 36.5°C and 37.5°C," NLS 2015


 Resuscitation Council (UK)




- Providing good thermal care is vital to prevent mortality and morbidity....


Environmental Challenges







On adjusted analyses, **admission temperature was inversely related to mortality (28% increase per 1°C decrease)** and late-onset sepsis (11% increase per 1°C decrease)

Laptook, Abbot R., Walid Salhab, and Brinda Bhaskar. "Admission temperature of low birth weight infants: predictors and associated morbidities." *Pediatrics* 119.3 (2007): e643-e649.

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NeoDrape

The NeoDrape is a sterile 24 x 24" wrap used to swaddle the newborn patient during delivery through stabilization to maintain proper thermoregulation while minimizing moisture loss.

- Designed to minimize rapid heat loss from the head
- Sterile packaging allows wrap to be placed in sterile field for immediate use during delivery

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SIM Problem Solving


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Thermal Care



<http://www.inditherm.co.uk/medical/neonatal-resuscitation-lifestart/>

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 Resuscitation Council (UK)

Provided babies ***can be kept warm***, delay cord clamping for at least 60 s whilst breathing is established

This approach requires ***good communication*** and ***teamwork***

Resuscitation, if required remains the priority

Neonatal Concerns

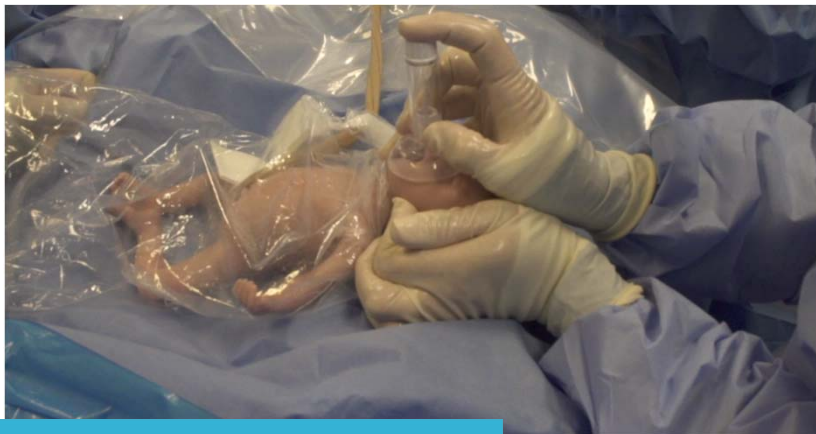
Neonatal
Concerns

- Providing airway support and lung inflation during the period of delayed cord clamping seems to be important

J Physiol. 2013 Apr 15;591(8):2113-26. doi: 10.1113/jphysiol.2012.250084. Epub 2013 Feb 11.

Delaying cord clamping until ventilation onset improves cardiovascular function at birth in preterm lambs.

Bhatt S¹, Alison BJ, Wallace EM, Crossley KJ, Gill AW, Kluckow M, te Pas AB, Morley CJ, Polglase GR, Hooper SB.



Optimising Delayed
Cord Clamping

Great Western Hospitals


NHS Foundation Trust

Delayed cord clamping technique for preterm delivery
by caesarean section

Thank you to:

- The GWH Perinatal team
- The GWH SIM team and Simpatico
- New Life Special Care Babies Charity



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References

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Thank you

Questions
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