



# ANTENATAL STERIODS



British Association of  
Perinatal Medicine

## FOR ALL BABIES BORN <34 WEEKS

If expected to give birth **WITHIN 7 days AND** haven't had steroids within the last 2 weeks (**including >22 weeks** gestation if survival-focused care planned)

Aim to give an optimally timed **full course**  
(2 doses 12-24 hours apart)

**1-7 days before** birth

Use **QUIPP** and **fFN** to help prediction of birth



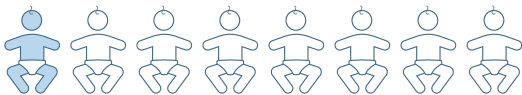
### STERIODS REDUCE THE RISK OF

Neonatal  
death by  
**30%**

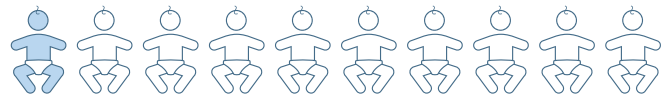
NEC by  
**50%**

Grade 3-4  
IVH by  
**45%**

### NUMBER OF WOMEN WE NEED TO TREAT TO PREVENT ONE INFANT DEATH



23-24 weeks



25 weeks

Celebrate your successes!

Investigate every missed case

Record in both maternal notes and BadgerNet

Roberts et al 2017, Travers et al 2017

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# OPTIMAL CORD MANAGEMENT



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## FOR ALL BABIES: CORD CLAMPED AT OR AFTER 1 MINUTE AFTER BIRTH

### EFFECTS OF OPTIMAL CORD MANAGEMENT (OCM)

decreased mortality by nearly a **third** for preterm infants

Number of infants =<28 weeks that need to get OCM to **save a life** is **20**

Fogarty 2018



Successful implementation of OCM requires effective perinatal team working. Consider the below:

Perinatal team simulation

How to stabilise the infant during OCM

Build a strong perinatal team culture through OCM training

Thermoregulatory care e.g. use a sterile plastic bag

OCM is **safe** for **multiple pregnancies**

Jegatheesan et al 2018

### OCM MULTI DISCIPLINARY TEAM



Parents



Obstetric and Midwifery Team



Neonatal Team



Theatre Team



Anaesthetic Team



Record timing of cord clamping in **delivery paperwork** and **Badgernet**, and investigate every missed case

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# EARLY BREAST MILK



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**WITHIN 6 HOURS OF LIFE FOR  
BABIES BORN <34 WEEKS**

**FIRST MBM CAN BE GIVEN AS  
MOUTH CARE/NON-NUTRITIVE FEED**

Milk production increases with time spent  
**skin-to-skin** for preterm infants

Lau et al 2007



Expressed breast milk volumes  
are significantly more if  
pumping is started  
**within 2 hours of birth**

Parker et al 2012

**Pumping 8-10 times** a day  
improves expressed volumes

Furman et al 2002

Hill et al 2005



Receiving breast milk instead of formula  
**reduces risk of NEC** by two thirds

Quigley et al 2014

Oropharyngeal colostrum **reduces risk of ventilator  
associated pneumonia** (by 60%)

Ma et al 2020

Breast milk instead of any formula **protects against ROP**  
(risk decreased by 70%)

Zhou et al 2015

Breast milk **improves IQ** by at least 5.9 points

Kramer et al 2008



Record time of first breast milk on  
Badgernet (UNICEF field)

**STRONGLY ENCOURAGE AND SUPPORT  
ANTENATAL AND IMMEDIATE  
POSTNATAL EXPRESSING**

This needs the whole perinatal team!

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# MAGNESIUM SULPHATE



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## FOR ALL BABIES BORN <30 WEEKS

Use of magnesium sulphate in preterm labour **reduces the risk of cerebral palsy by 30%**



**4g bolus 1g/hr**

Administer prior to transfer, ideally within **4-24 hours** of birth.  
For emergency deliveries, try to administer at least at loading dose.

For planned deliveries – ensure loading dose  
and at least 4 hours of maintenance infusion.

**1 case of cerebral palsy**  
is prevented for every  
**37** mothers who receive  
magnesium sulphate.



There are **no long term side effects** of magnesium sulphate for mothers but during administration they can feel rather **unwell** and feel a **“burning”** sensation

## CONTRAINDICATIONS

Myasthenia gravis

It is the patient's right to have the choice to decline



**Consider giving magnesium sulphate if transferring out in early labour. Record administration on Badgernet and investigate missed cases.**





# THERMO REGULATION



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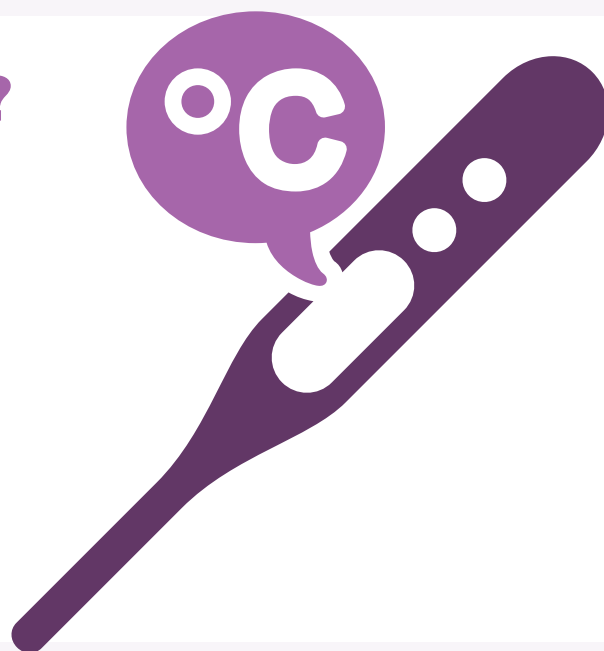
**BABIES BORN <34 WEEKS SHOULD HAVE A FIRST  
TEMPERATURE MEASURED WITHIN ONE HOUR  
OF BIRTH, WHICH IS BETWEEN 36.5–37.5°C**

## WHY DOES IT MATTER?

Hypothermia in preterm infants  
increases risk of:

- hypoglycaemia
- metabolic acidosis
- respiratory distress and acidosis
- necrotising enterocolitis
- coagulation defects
- intraventricular haemorrhage

McCall et al 2018



**FOR EVERY 1°C DECREASE IN  
ADMISSION TEMPERATURE  
MORTALITY INCREASES BY 28%**

Laptook et al 2007



**IMPROVE TEMPERATURE BY:  
PLACING THE BABY IN A  
PLASTIC BAG AT BIRTH  
AND USING A HAT**



**TAKE CARE TO ENSURE THERMAL  
STABILITY DURING RESUSCITATION**



**USE BAPM QI TOOLKIT TO INVESTIGATE  
HYPOTHERMIA + IMPROVE OUTCOMES**

[www.bapm.org/normothermia](http://www.bapm.org/normothermia)



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# INTRAPARTUM ANTIBIOTIC PROPHYLAXIS



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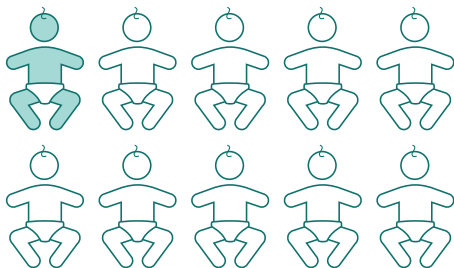
Women in established preterm labour <34 weeks should receive optimally timed Intrapartum Antibiotic Prophylaxis (ie 4-24 hours prior to birth)

Women should receive intrapartum antibiotic prophylaxis **irrespective** of whether they have ruptured **or** intact membranes

The risk of **death** from **GBS sepsis** in preterm infants is **25%**

**Intrapartum antibiotics reduce** the risk of neonatal **GBS sepsis** in GBS colonised women by **86%**

NNT 10 to prevent 1 infant being born preterm with GBS



Reduce the risk of **delivery** within a week by **20%**

Reduce the risk of abnormal neonatal **cranial ultrasound** findings by **20%**



The antibiotics of choice are Benzylpenicillin or Cephalosporins / Vancomycin in penicillin allergic women. Confirm agent with your local antimicrobial guidelines. Record administration of intrapartum antibiotics on Badgernet.

Fairlie et al 2013, Kenyon et al 2013, NICE11, RCOG guideline No.36.

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# PLACE OF BIRTH



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**<27 WEEKS OR  
<800G in a maternity centre  
with a co-located NICU  
<28 WEEKS IF MULTIPLE BIRTH**

**2-3 fold** higher risk of **severe brain injury** if transferred to a NICU *ex utero*

**NNT 8**

**1.3 times** the odds of **death** if born in non-tertiary centre whether transported or not

**NNT 20**



**QUIPP**

Work as a team to **identify promptly** women in **suspected, diagnosed** or **established preterm labour**



**Collaborate** with ambulance services to ensure prompt transfer



**Exception reporting** for babies <27 weeks born in a maternity unit without a co-located NICU

Helenius et al 2019

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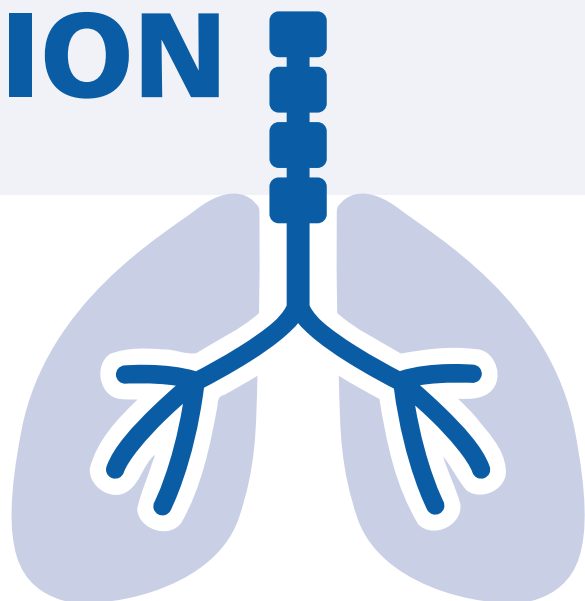


# VOLUME TARGETED VENTILATION



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Volume targeted ventilation (VTV) is synonymous with Volume Guarantee (VG). VTV protects premature lungs from lung trauma. Triggered VG is preferred as infant-initiated breaths are less likely to cause lung injury.



## EFFECTS

**Reduces Hypocarbia**

by half  
(NNT 3)

**Decreases risk of pneumothorax**

by at least a third

**Reduces Grade 3-4 IVH**

by half (NNT to prevent one IVH is 11)



## HOW TO IMPLEMENT VTV

Integrate into Unit SOP

Train all staff on how to use VTV

Introduce VTV to new staff at induction

Use VTV as soon as possible after intubation







# CAFFEINE



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Perinatal Medicine

**FOR ALL  
BABIES BORN  
<30WKS OR <1.5KG  
CONSIDER FOR BABIES UP TO 32-34 WEEKS**

## EFFECTS

**Less neurodevelopmental  
impairment at 18-21 months**

(Schmidt et al 2007)

**Less Cerebral Palsy when  
used at extubation**

(Shepherd et al 2018)

**Less Chronic Lung Disease**

(Schmidt et al 2006, Gary et al 2011)

**Lower rate of extubation  
failure within 7 days**

(Henderson-Smart et al 2010)

**Improved white matter  
development in the brain**

(Doyle et al 2010)



## START WITHIN 24 HOURS OF BIRTH

**To reduce the number of days on respiratory support**

(Davis et al 2010)

## DOSE

**20mg/kg bolus IV → 5-10mg/kg daily**

## HOW TO ENSURE IT IS ALWAYS GIVEN

Use a preterm admission bundle/checklist

Neonatal Unit Pharmacist Checks

Unit Caffeine Champions



**DON'T HAVE YOURS UNTIL THEY'VE HAD THEIRS!**

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