



Yorkshire & Humber Neonatal ODN Clinical Framework

Title: Perinatal Care of the Preterm Infant

Author: Early care working group

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This clinical framework has been developed to ensure appropriate evidence-based standards of care throughout the Yorkshire & Humber Neonatal ODN. The appropriate use and interpretation of this guideline in providing clinical care remains the responsibility of the individual clinician. If there is any doubt discuss with a senior colleague.

Early Care Framework for Preterm Infants < 34/40 – Antenatal care

AT ALL TIMES, ASK DO YOU NEED HELP?

ANTENATAL CARE

Antenatal care

Liaise with obstetric and midwifery team:

- Has mother received **antenatal steroids and magnesium sulphate**?
- Is **in utero transfer** required and safe?
- Does mother require **antibiotics**?
- Any **paediatric alerts**?

Counsel Parents

Explore parents' concerns and wishes.

Discuss ethics, outcomes and common problems.

Discuss breast feeding and expressing. Consider antenatal expressing within 1-2 hours of delivery if planned CS or established labour.

Team

Ensure appropriate team is notified and ready with senior support

Ensure cot space and equipment prepared on neonatal unit

Equipment

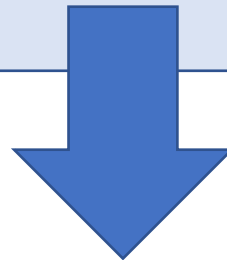
Ensure necessary delivery room equipment is checked and ready;

- Thermal care
- DCC eg. LifeStart trolley
- Airway
- Breathing
- Saturation monitor
- Surfactant

When delivery is imminent

Multi-disciplinary Delivery Room Huddle

- Ensure appropriate team
 - Allocate roles for delivery and golden hour
- Discuss delivery room management plan and expectations, including DCC
 - Recheck equipment in delivery room
- Ensure neonatal unit prepared eg. ensure lines trolley being prepared



Early Care Framework for Preterm Infants < 34/40 – Delivery Room Stabilisation

AT ALL TIMES, ASK DO YOU NEED HELP?

DELIVERY ROOM STABILISATION

DCC

Aim for at least 60 seconds before clamping the cord.

If PIP required use pressures of 25/5. Start resuscitation in:

<28/40: 30% oxygen

28-31/40: air-30% oxygen

>31/40: air

Thermal Care

- Plastic bag (<32/40 or if fit) and warmed hat
- Warm all equipment to come into contact with baby eg stethoscope
- Radiant heat
- Transwarmer
- Continuous skin probe monitoring
- Unit specific guidance for transfer to NNU

KEEP the PEEP

- PEEP 5- 6 cm H₂O with face mask or CPAP
- Start in:
 - <28/40: 30% O₂
 - 28-31/40: air -30% O₂
 - >31/30: air

Assess/Monitor

- Heart rate
- Breathing
- Saturations
- Temperature

Support

- Follow NLS algorithm
- Respiratory support as needed, start PIP 25, may need higher and reduce once lungs aerated
- Intubate if:
 - bradycardia despite appropriate airway support,
 - persistent apnoeaOR
 - significant increased work of breathing on PEEP **AND** high/increasing oxygen requirement **AND** -you have the appropriate skills

Surfactant

- If required give curosurf 200mg/kg
- Consider LISA as per local guidance

When infant stabilised:

- Update parents in the delivery room
 - Parental touch, if possible
- Delivery room cuddles if local guidance and trained

Transfer to neonatal unit

- Follow local guidance for safe transfer to NNU
- Maintain thermal care and continue monitoring

Early Care Framework for Preterm Infants < 34/40 – Admission Golden Hour

AT ALL TIMES, ASK DO YOU NEED HELP?

GOLDEN HOUR – Is transfer required for this infant?

Thermal care

- Maintain temperature 36.5- 37.5°C
- Pay particular attention during line insertion and other procedures
- Humidify incubator as local policy

Airway/breathing

- VG ventilation
- Early gas (before lines) if concerns re: oxygenation/work of breathing
- Ensure gastric tube in situ
- CXR to check ETT position when lines inserted unless clinical concern

Circulation

- Monitor HR, BP and perfusion (Urine output/cap refill time/lactate)

Lines & Fluids

Intravenous access:

- Consider UAC + UVC if ventilated
- Babies <31+0 weeks need UVC or longline for PN
- Aim to site umbilical lines before cannulation, move to peripheral cannula if delay in siting (eg. >30mins)

Fluids:

- Start PN as soon as possible if indicated and within 8 hours
- Use peripheral line if central access delayed (fluids as local policy)
- If PN not indicated, start 10% dextrose as unit policy.
- Monitor blood sugar and fluid balance.

Drugs

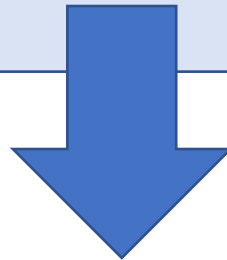
- Vitamin K
- Caffeine
- PN (< 31+0/40) asap and within 8 hours
- Consider antibiotics, if required give within one hour
- Give antifungals as local policy

Examination

Exclude imperforate anus.
Include measurement of OFC.

Parents

- Update parents regarding baby's condition
- Encourage mother to express milk as soon as possible (ideally within 2 hours of delivery)



Early Care Framework for Preterm Infants < 34/40 – Ongoing care

AT ALL TIMES, ASK DO YOU NEED HELP?

ONGOING CARE – Is transfer required for this infant?

Thermal care

- Maintain temperature 36.5- 37.5°C
- Pay particular attention during line insertion and other procedures
- Humidify incubator as local policy

Airway/Breathing

Establish respiratory support on NNU.

Principles:

- Allow pH > 7.22
- Aim SpO₂ 91-94%

If ventilated:

- VG ventilation
- Repeat surfactant if needed
- Avoid pCO₂ < 4.5 or > 8.5 kPa (until Day 4)
- From Day 4, aim pCO₂ 4.5-10 kPa
- Aim to avoid sedation
- Minimise duration of mechanical intubation

If CPAP:

- Give early rescue surfactant if evidence of RDS and FiO₂ > 30% with PEEP 6cmH₂O after initial stabilisation (consider LISA /INSURE technique, if possible, at your centre)

Circulation

- Monitor BP/HR/perfusion (urine output/capillary refill/lactate)
- Fluid balance

Other key aspects of early care

- Start EBM as buccal feed/mouth care as soon as available
- Commence feeds as per ODN guidance
- Start probiotics as per ODN guidance
- Early skin to skin/kangaroo care
- Minimal handling

Documentation

- Badger admission and examination
- Line insertion and position
- Growth chart
- Parent consultation

Parents

- Support family integrated care through:
 - Regular communication with families
 - Encouraging involvement in ward rounds
 - Support in providing cares

Research

- Consider suitability for research studies currently recruiting in local unit

References/Resources

NLS 2021 5th Edition [Newborn resuscitation and support of transition of infants at birth Guidelines | Resuscitation Council UK](#)

Antenatal Care:

BAPM Antenatal Optimisation for Preterm Infants <34 weeks

<https://www.bapm.org/pages/194-antenatal-optimisation-toolkit>

Counselling:

BAPM Perinatal Management of Extreme Preterm Birth Before 27 weeks of Gestation. 2019.

<https://www.bapm.org/resources/80-perinatal-management-of-extreme-preterm-birth-before-27-weeks-of-gestation-2019>

BAPM Optimising Early Maternal Breast Milk for Preterm Infants. A quality improvement toolkit. November 2020.

[https://hubble-live-assets.s3.amazonaws.com/bapm/redactor2_assets/files/755/BAPM Preterm MBM Toolkit Final for publication.pdf](https://hubble-live-assets.s3.amazonaws.com/bapm/redactor2_assets/files/755/BAPM%20Preterm%20MBM%20Toolkit%20Final%20for%20publication.pdf)

Delivery room huddle:

BAPM Optimal Cord Management <https://www.bapm.org/pages/197-optimal-cord-management-toolkit>

Thermal Care:

BAPM Normothermia package <https://www.bapm.org/pages/105-normothermia-toolkit>

Delayed Cord Clamping:

BAPM Optimal Cord Management Toolkit <https://www.bapm.org/pages/197-optimal-cord-management-toolkit>

Early respiratory care:

NICE Guideline NG 124 Specialist neonatal respiratory care for babies born preterm. 2019. <https://www.nice.org.uk/guidance/ng124>

European Consensus Guidelines on the Management of Respiratory Distress Syndrome – 2019 Update. Sweet, D, Carnielli V, Greisen G, et al. Neonatology 2019; 115:432-450

PN:

NICE Guideline NG 154: Neonatal Parenteral Nutrition. Feb 2020. <https://www.nice.org.uk/guidance/ng154>

BAPM The provision of Parenteral Nutrition within Neonatal Services - Framework for Practice. 2016. <https://www.bapm.org/resources/42-the-provision-of-parenteral-nutrition-within-neonatal-services-a-framework-for-practice-2016>

ODN guidance awaited pending procurement process.

Probiotics:

ODN guidance in progress

Feeding:

ODN guidance in progress

Working group members:

Aparna Manou

Helen Yates

Tamanna Williams

Catherine Smith

Anne Bean

Verena Walsh

Carol Hudson

Chakra Vaseduvan
Hazel Talbot
Hannah Shore