



Extreme Preterm (<28 weeks) Golden Hour Care Guideline

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NETS WA

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this [disclaimer](#)

Aim

To provide a quick reference and checklist about extreme preterm care to guide our NETS team when providing advice to referring units and when on retrieval. This guideline may be useful for referring units to consult in addition to discussing with NETS WA.

Risk

Extreme preterm infants represent the highest risk group of patients cared for by NETS, with infants born outside a tertiary centre (outborn) being at significantly higher risk of mortality and morbidity. This risk is significantly reduced if able to transfer in-utero which should always be explored as a priority.

Definition

Extreme prematurity is defined as <28 weeks gestational age at birth. The hour immediately following birth is often referred to as the “Golden Hour,” which denotes the period in which medical care is most effective in preventing irreversible damage.

Resuscitation and stabilisation during this time involves a series of interdependent tasks and procedures, which must be done *efficiently* and *systematically* to improve short and long-term outcomes for these infants. This guideline uses the 6 Golden Hour evidence-based interventions to support those caring for extreme preterm infants.^{1,2}

Extreme Preterm Golden Hour Checklist and Algorithm¹

The 6 key evidence-based interventions for improving extreme preterm outcomes are:

1. **In-utero transfer and Antenatal Steroids**
2. **Thermoregulation**
3. **Respiratory Management**
4. **Glycaemic Control**
5. **Infection Control**
6. **Teamwork and Communication (Handover and Transition to the NICU)**

To deliver these interventions effectively and efficiently, they can be prioritised into 4 key stages:

1. **Preparation and Communication**
2. **Delivery and Resuscitation**
3. **Stabilisation**
4. **Readiness for Transport**

1. Preparation and Communication

Avoid any delays in facilitating In-utero transfer. This offers the best outcome unless there is a contraindication. ALL cases must be discussed with RFDS and or KEMH obstetrics prior to calling NETS.

Use the High Acuity cot with Fabian ventilator as a first choice for extreme preterm infants. (Metro transports and NETS ambulance ONLY).

- Call KEMH Obstetrician **BEFORE** calling NETS. Ask to speak directly with the Senior Registrar or Consultant.
- Advocate for early antenatal steroids.
- Assign Team Roles:
 - Leader
 - Thermoregulation
 - Airway (must not be the same person as the leader)
 - Monitoring (SpO₂ probe)
 - Circulation/IV access
 - Drugs and Scribe
- Request the most senior support available (Paediatrics and/or Anaesthetics)
- Set room temp to 27 deg and overhead warmer to maximum (100%).
- Prepare equipment for resus: preterm mask (S/XS), plastic wrap, hat and chemical mattress if available (place protective layer of linen on top). Have SpO₂ and ECG monitor (where available) ready with leads attached.
- Call NETS WA (1300 638 792)
- Set up Neovision (telehealth) for NETS support (call 61317 on Avaya or Polycom)

- Counsel parents regarding outcomes, delivery, resuscitation, stabilisation, and the need for transfer.
- NETS WA Neonatologists are able to offer support and advice to the local team and parents regarding outcomes and counselling if required.
- NIC-PREDICT is a digital tool designed to predict (estimate) outcomes for extremely preterm infants if they are offered active care after birth. [NIC-PREDICT](#)
- When gestational age has not been accurately determined from a dating scan, caution must be used when estimating gestational age, especially with the estimated weight where growth restriction can be misleading regarding the maturity of the infant.

2. Delivery and Resuscitation (<15min)

- Follow Neonatal Resuscitation [Algorithm and Guideline](#) (ANZCOR)
- Delayed cord clamping 30sec if breathing and not requiring immediate resuscitation
- Place undried infant in Plastic Wrap (Neohelp, neowrap, food grade plastic bag or food grade cling film)
- Place on hat (place over neohelp hood if this is used)
- Neopuff settings: PIP 25, PEEP 6, FiO₂ 30%
- Aim for SpO₂ 91-95%. Avoid: Hyperoxia (>98%), hypoxia (<90%), hypocapnia (<30mmHg) and Hypercapnia (>60mmHg). Use ECG monitoring if available. Use end-tidal CO₂ if ventilated.

3. Stabilisation and Golden Hour (<60min)

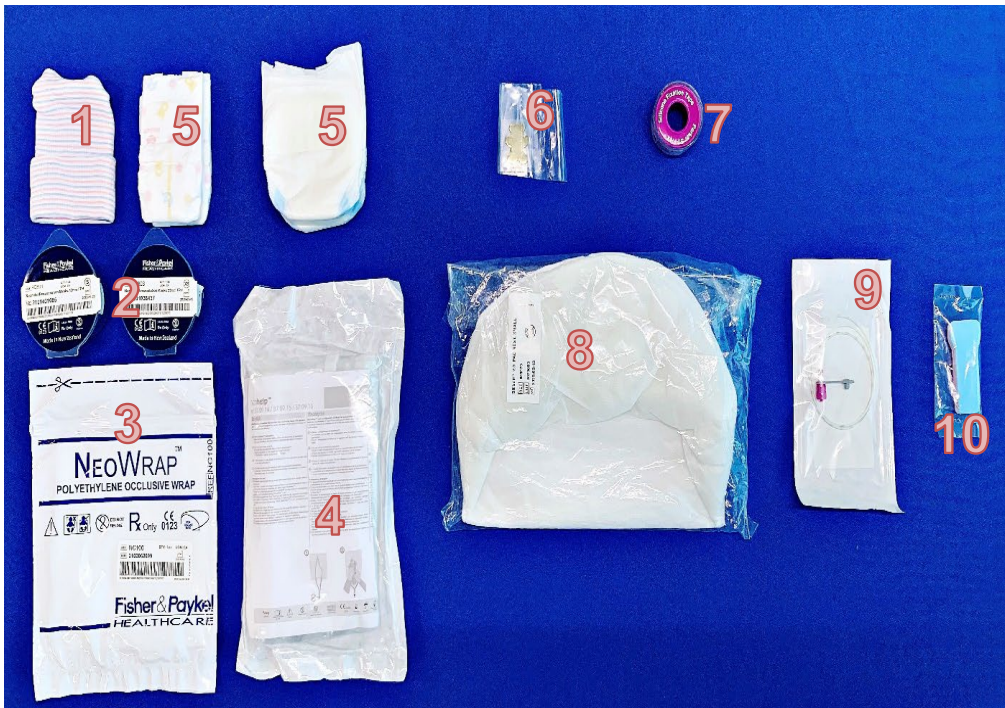
- There are several important tasks to achieve within this hour. It is crucial to discuss prioritisation and allocation of tasks with the team first.
- [Thermoregulation](#): Avoid Hypo/hyperthermia - check Axillary every 15min (36.5-37.4 °C). A chemical mattress may be helpful if the infant is on an open warmer during/after resuscitation and stabilisation, but caution is advised when using in an incubator or the NETS cot, as this may increase the risk of hyperthermia.
- Secure airway with bubble [CPAP](#) 6cm so that warm and humidified gases can be supplied, maintaining PEEP at ALL times. PEEP via neopuff is the alternative to this, but cold unhumidified gases increase the risk of lung injury and hypothermia.
- If FiO₂% >30% despite 1hr effective CPAP Call NETS as treatment may need to be escalated
- [Secure IV access](#) - Place PIVC (max 2 attempts) before progressing to UVC
- Skin preparation: Chlorhexidine 1% Alcohol / 70% Swab > 27 weeks gestation or Povidone-iodine 10% Swab < 27 weeks gestation.
- Take blood for: Gas, culture, FBC and CRP
- [IV fluids](#) – 5% Dextrose at 80mL/kg/day
- Assess risk of sepsis (Antibiotics: IV [Benzylpenicillin](#) and [Gentamicin](#))

- [Vitamin K](#) IV (<1kg) or IM (>1kg)
- IV [caffeine](#) load
- Orogastric tube insertion (if <850g a 5G polyurethan tube is used)
- CXR to identify underlying lung pathology, OGT and ETT placement (if intubated).
- Caution with saline boluses >10ml/kg due to immature myocardium, discuss with NETS if considering a second fluid bolus.
- BP - monitoring (aim for MAP same as gestational age)

4. Readiness for Transport

- Placenta in a sealed plastic bucket with maternal labels attached
- Sample of Maternal blood in EDTA pink tube, hand labelled and signed pathology form
- Parental Support:
 - Inform parents about the need for transfer. Allow parents to see and touch their infant and take photos. Provide emotional support.
 - If clinically stable and the environment permits, advocate for the parent to hold and have skin-skin contact.
 - Encourage and support early breast milk expressing within the first few hours. The NETS team can take any expressed breast milk in a cooler bag to the NICU.
- Photocopies of medical records

Additional preterm equipment available in NETS BAGS



Teal Pouch (Bag 2)

1. Striped Hats
2. XS (35mm) and S (42mm) Face masks
3. Neowrap
4. Neohelp
5. Nappies (XS/S)
6. Temperature probe covers
7. Sil-Flex Tape
8. Bili Nest

Purple Pouch (Bag 1)

9. 5Fr Orogastric tube
- #### Orange Pouch (Bag 1)
10. XS Arm board

Related CAHS internal policies, procedures and guidelines

[NETS Transport Medications](#)

[Newborn Emergency Transport Service WA \(NETS WA guidelines\)](#)

[Resuscitation medications and infusions calculator](#)


[Neonatology Guidelines](#)

1. [Thermoregulation](#)
2. [Respiratory Distress Syndrome](#)
3. [Nutrition: Volume and Nutritional Requirements](#)
4. [Sepsis: Neonatal](#)
5. [Resuscitation Neonatal](#)
6. [Handover and Transition to the Neonatal Unit](#)
7. [CPAP](#)
8. [Intubation](#)
9. [Surfactant therapy](#)
10. [Venous and Arterial Access](#)
11. [Fluid Management](#)
12. [Benzylpenicillin](#)
13. [Gentamicin](#)
14. [Phytomenadione \(Vitamin K\)](#)
15. [Caffeine](#)

References and related external legislation, policies, and guidelines

1. Croop SEW, Thoyre SM, Aliaga S, McCaffrey MJ, Peter-Wohl S. The Golden Hour: a quality improvement initiative for extremely premature infants in the neonatal intensive care unit. *J Perinatol*. Mar 2020;40(3):530-539. doi:10.1038/s41372-019-0545-0
2. Lamary M, Bertoni CB, Schwabenbauer K, Ibrahim J. Neonatal Golden Hour: a review of current best practices and available evidence. *Curr Opin Pediatr*. Apr 1 2023;35(2):209-217. doi:10.1097/MOP.0000000000001224

This document can be made available in alternative formats on request

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