



WEBINAR ON NEONATAL CARE GUIDELINES

- IMMEDIATE CARE OF THE NEWBORN
 - RESUSCITATION
-

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health

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Health
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- Preparation
- Equipment & environment
- Immediate management & resuscitation
- Referrals

Immediate care of newborn

Preparation

- Good communication between the obstetrics and neonatal teams
- Clear and respectful communication with mother and birth companion
- All birth attendants - skill in providing immediate newborn care and basic resuscitation – golden minute
- ALL (HCW, birth attendant) wash hands with soap and water and use alcohol-based hand cleaner before any contact with the mother or her surroundings

Immediate care of newborn

Preparation

- 10% some respiratory assistance at birth, <1% need extensive resuscitation
- Prep for unanticipated neonatal resuscitation – all facilities that offers maternal and newborn care
 - complications in low-risk deliveries at L1 facilities
 - inadvertent high-risk deliveries at L1 facilities
- At least one person competent in NLS and resuscitation - sole responsibility for the baby
 - identify 2nd person should there be need
- Known complicated deliveries at higher level (L2/3/4) facilities – senior clinician
- Clear procedures for rapidly mobilising additional assistance

Immediate care of newborn

Risk factors for resuscitation at birth

Ante-partum factors	Intrapartum factors
<i>Fetal</i>	
<ul style="list-style-type: none"> Intrauterine growth restriction < 37 weeks' gestation Multiple gestation Congenital abnormality Abnormal antenatal scan findings Oligo- or polyhydramnios 	<ul style="list-style-type: none"> Fetal compromise - non-reassuring cardiotocography (CTG) Meconium-stained amniotic fluid Vaginal breech delivery Forceps or vacuum delivery Significant maternal bleeding Caesarean section < 39 weeks Emergency caesarean section General anaesthesia Delayed progress of labour
<i>Maternal</i>	
<ul style="list-style-type: none"> Maternal signs of sepsis (tachycardia, pyrexia) Maternal drugs (recreational and prescription) Gestational diabetes Pregnancy-induced hypertension Pre-eclampsia High body mass index (BMI) No antenatal steroids Short stature 	

Immediate care of newborn

Factors to review in maternal medical/ obstetric records

Pregnancy	Labour	Birth
<ul style="list-style-type: none">• Gestational age• Intrauterine growth restriction• Multiple gestation• Pregnancy related conditions• Congenital abnormalities	<ul style="list-style-type: none">• Prolonged rupture of membranes• Progress of labour• Foetal heart rate• Antenatal steroids• Drugs	<ul style="list-style-type: none">• Presentation• Mode of delivery• Maternal analgesia

Equipment and Environment

- Checklists are helpful
- Equipment should be checked regularly, always before use
- Delivery area - warm (23°C-25°C), well-illuminated, draught-free
- Resuscitation area - flat, firm surface, pre-warmed radiant warmer if available
- Equipment to monitor the condition of the baby and to support ventilation

Equipment and Environment

Monitors and general equipment

Functional radiant warmer with overhead heater and light (e.g. Resuscitaire®).

Warm dry towels, linen

Polyethylene bag for preterm babies (< 30 weeks or < 1500 grams)

Gloves (sterile and non-sterile). Alcohol hand rub.

Alcohol antiseptic wipes. Chlorhexidine solution.

Skin temperature sensor and cover.

Pulse oximeter. Neonatal pulse oximeter sensor and disposable foam band tape or self-adherent bandage (changed between babies).

Neonatal stethoscope. Timer.

Scissors.

Cord clamps/cord ties. Transport incubator. Oxygen cylinders.

Baby hats.

Neonatal algorithm with saturation target table.

(Recommended but not essential: ECG monitor with neonatal leads)

Equipment and Environment

Airway and breathing

Self-inflating neonatal resuscitation bag with removable oxygen reservoir and tubing

T-piece device and circuit (e.g. Neopuff™)

Medical air and oxygen

Flow meter (set to 10 L/minute)

Air/oxygen blender or Y connector and tubing

Face mask sizes: 00, 0, and 1 (at least 2 of each size)

Laryngoscope handle and blades (straight blade) sizes: 0 and 1. 00 (optional). Spare batteries and light bulbs

Suction equipment: Suction unit with suction tubing. 8 F, 10 F and 12 F suction catheter attached to wall suction set at 80-100 mmHg

Endotracheal tubes (uncuffed) sizes: 2 mm, 2.5 mm, 3.0 mm, 3.5 mm, 4.0 mm (at least 2 of each size). Endotracheal tube stylet and introducers x 2

Neonatal Magill forceps x 2

Lubricant gel

Skin preparation, strapping/tape to secure endotracheal tube e.g. (Leukoplast™)

5 mℓ syringe

Oropharyngeal airway sizes: 00 (4 cm), 0 (5 cm), and 1 (6 cm)

Nasogastric or Orogastric tube sizes: 6 F, 8 F, and 10 F

At least 2 of each size should be available

10 mℓ syringe x 2 and strapping

Recommended but not essential:

Laryngeal Mask Airway™ [LMA]: size 1 (for 2-5 kg baby) and 5 mℓ syringe. End-tidal carbon dioxide detector.

Equipment and Environment

Intravenous access

IV cannula: 24 gauge (G) (yellow) and 26 G (violet/purple)

Alcohol anti-septic wipes x 3

Strapping/tape: Tegaderm™

Syringes: sizes 3 ml, 5 ml and 10 ml

0.9% sodium chloride ampoules - 10 ml as flush

Extension tubing

Three-way taps. Basic sterile pack

Recommended but not essential:

Intraosseous access kit (if available) e.g. Arrow EZ-IO® 18 system or Cook® 50 mm

Equipment and Environment

Umbilical venous catheter (UVC) access

Umbilical catheters: 3.5 F and 5 F x 2 each, sterile gloves

Alcohol antiseptic wipes. Chlorhexidine solution. Cord ties x 2

Scalpel blade and holder. Basic dressing pack

Three-way taps x 2

Syringes: size 3 ml, 5 ml and 10 ml

0.9% sodium chloride ampoules 10 ml (flush)

Strapping/tape to secure the line

Equipment and Environment

Emergency medications and fluids

Adrenaline (epinephrine) 1:10 000 ampoules (protected from light)

0.9% sodium chloride intravenous solution 500 mL bag

10% Neonatalyte

Emergency O negative blood (available in theatre)

Other

Intercostal drain sizes: 8 F, 10 F, and 12 F. Umbilical catheter surgical pack

Blunt needles: 22 and 23 gauge. Blood gas syringes or capillary tubes

Chloromycetin eye ointment, Vitamin K (intramuscular preparation)

Immediate care at delivery

- Rapid initial assessment
- If immediate resuscitation is not required, **delay cord clamping by at least 60 seconds**
 - term and preterm infants
- Routine suctioning is not recommended
- Well newborns: skin-to-skin in 1st hour to prevent hypothermia and promote breastfeeding

Immediate care at delivery

- Meconium-stained liquor:
 - non-vigorous newborns delivered through meconium-stained amniotic fluid are at increased risk for requiring advanced resuscitation
 - routine suctioning of the airway of non-vigorous infants **not recommended** - likely to delay initiation of ventilation
- **Rarely**, tracheal intubation and tracheal suctioning to relieve airway obstruction may be required

Immediate care at delivery

- Resuscitation according to Newborn Resuscitation Algorithm of the Resuscitation Council of South Africa
- **Prolonged resuscitation in late preterm and term babies:**
 - consider transfer to appropriate referral centre for assessment for therapeutic hypothermia
- All babies that require intubation and ventilation must be referred to a regional or tertiary centre for NICU admission



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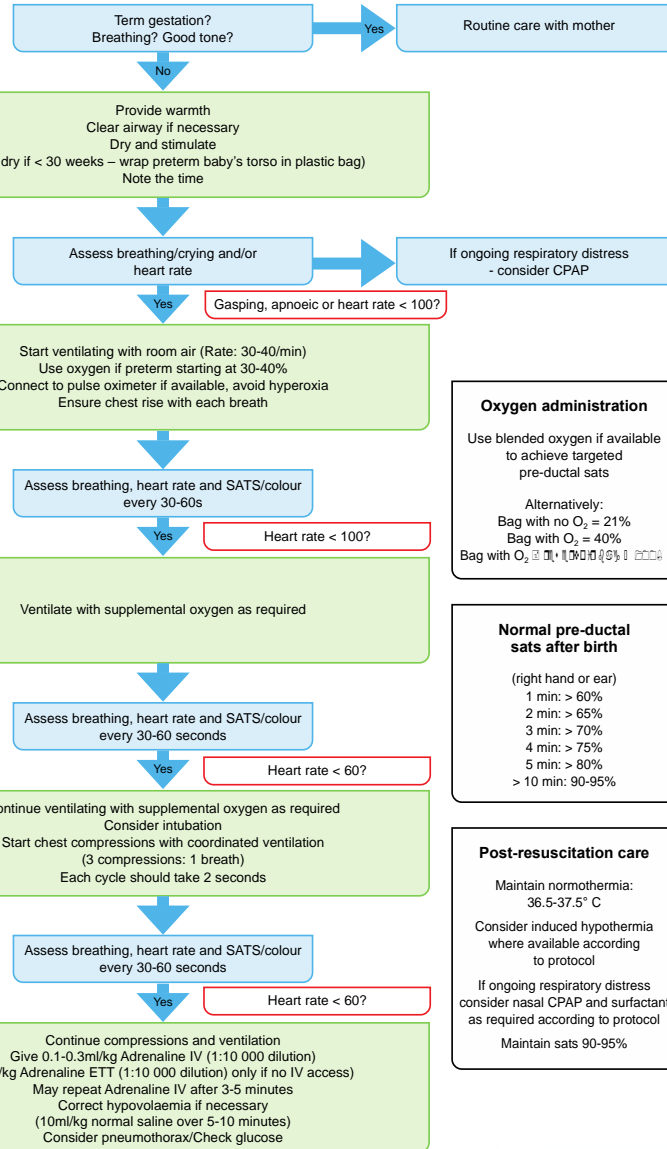
Newborn Resuscitation Algorithm



2021

GOLDEN MINUTE (BIRTH – 60 sec)

MAINTAIN NORMOTHERMIA



Oxygen administration

Use blended oxygen if available to achieve targeted pre-ductal sats

Alternatively:
 Bag with no O₂ = 21%
 Bag with O₂ = 40%
 Bag with O₂ = 80%

Normal pre-ductal sats after birth

(right hand or ear)

- 1 min: > 60%
- 2 min: > 65%
- 3 min: > 70%
- 4 min: > 75%
- 5 min: > 80%
- > 10 min: 90-95%

Post-resuscitation care

Maintain normothermia: 36.5-37.5° C

Consider induced hypothermia where available according to protocol

If ongoing respiratory distress consider nasal CPAP and surfactant as required according to protocol

Maintain sats 90-95%



When to stop resuscitation?

- Stop ventilation when heart rate >100bpm and sustained spontaneous breathing
- Wean supplemental oxygen according to right hand pulse oximetry saturation targets
- Provide ongoing care and monitor at least 6 hours after resuscitation

When to stop resuscitation?

- Consider stopping resuscitation if:
 - no HR >10 minutes after birth
 - no spontaneous breathing and
 - HR <60bpm after 20 minutes despite effective resuscitation
- If heart rate >100 bpm but no spontaneous breathing, exclude effects of maternal drugs
 - these babies require mechanical ventilation and possible intensive care unit admission
- **Discuss decisions to discontinue resuscitation or need for mechanical ventilation and intensive care admission with a senior colleague or regional/tertiary referral centre**

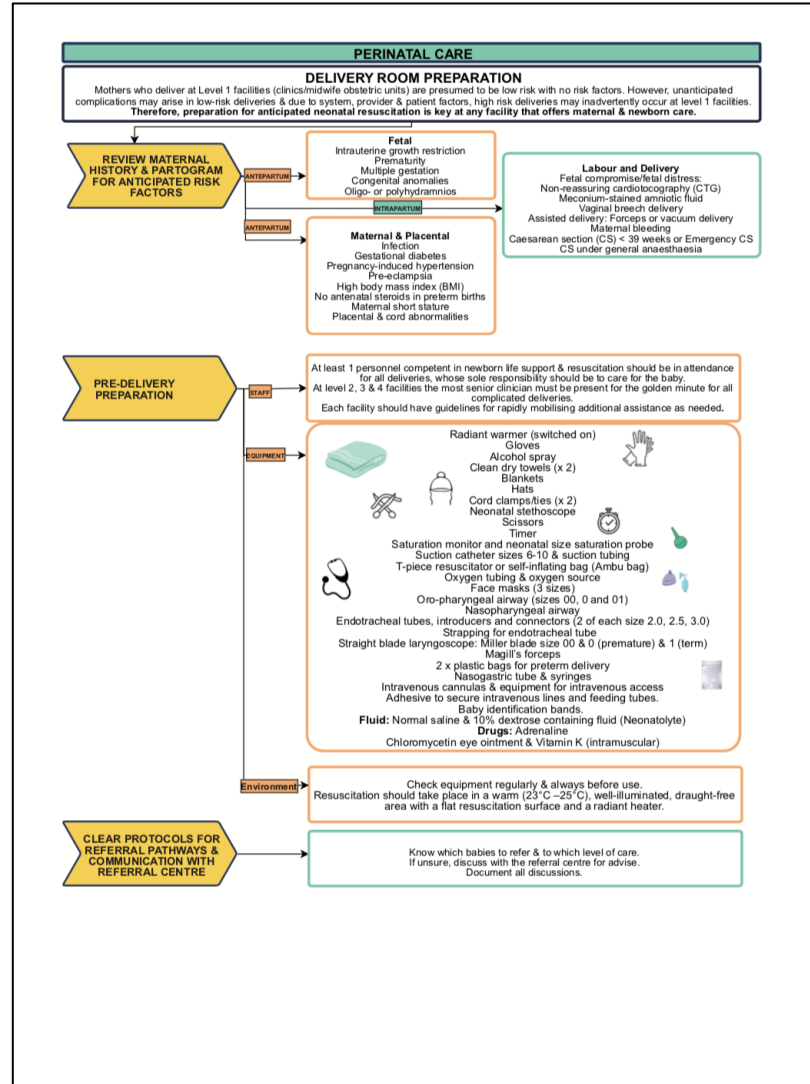
Immediate/post resuscitation care

- Protocols for referral pathways and communication with referral centre
- Know which babies to refer and to which level of care
- If unsure, discuss with the referral centre
- Document all discussions

Indications for referral immediately after birth

- Newborns requiring intubation and ventilation
- Newborns meeting criteria for therapeutic hypothermia
- Newborns with congenital malformations compatible with life

Immediate care of newborn



Thank you