



NATIONAL INTEGRATED GUIDELINES FOR NEONATAL CARE IN SOUTH AFRICA

CARE OF THE SMALL AND SICK NEWBORN

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health

Department:
Health
REPUBLIC OF SOUTH AFRICA

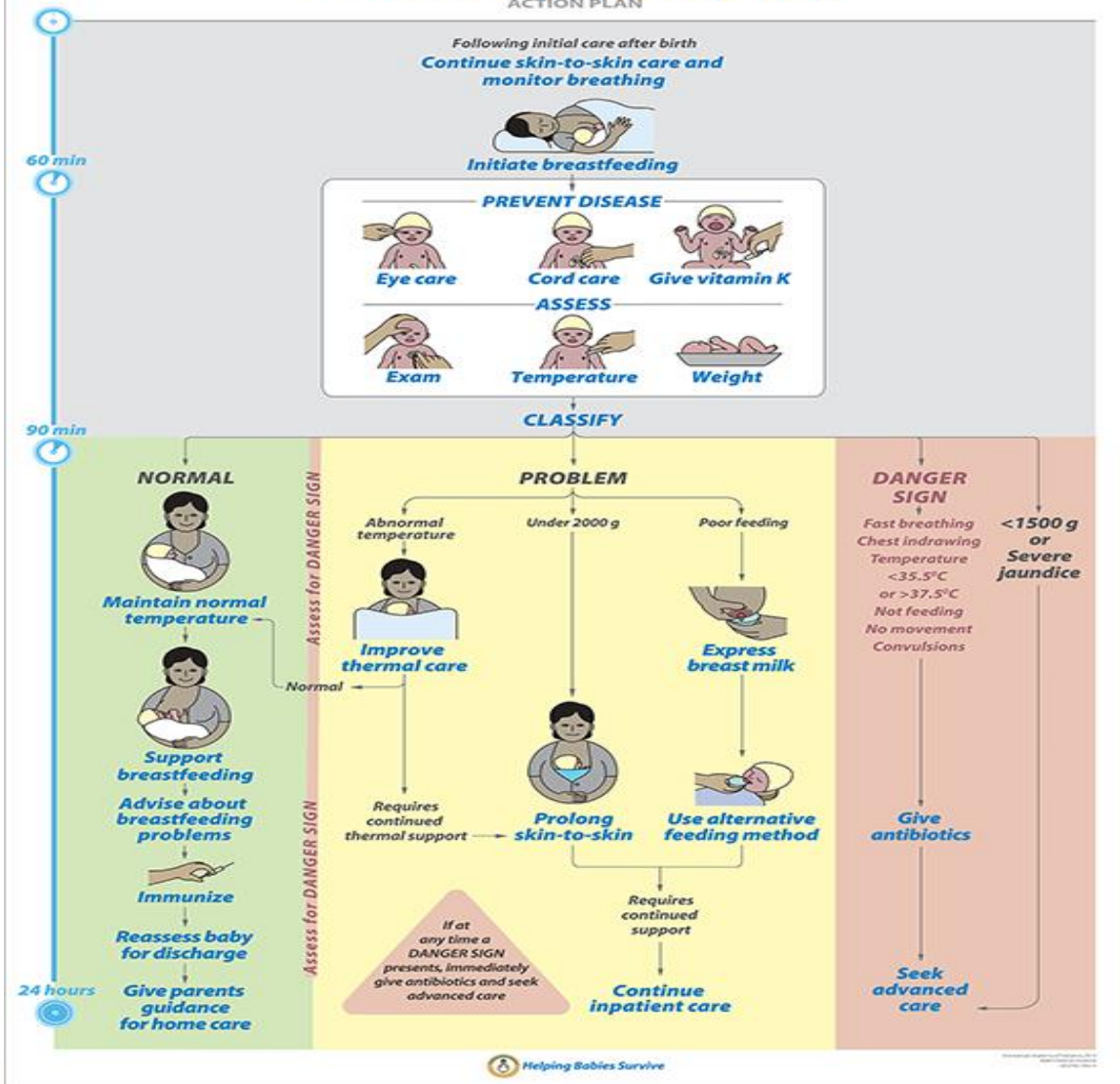


Outline

- Definition
- Initial management
- Neonatal conditions to be prevented
- Whom to refer
- Monitoring and ongoing care
- Clinical governance

Helping Babies Survive Essential Care for Every Baby

ACTION PLAN



Definition

- Baby with low birth weight –birth weight below 2500g
- Low birth weight (VLBW)- < 2500g
- A baby who is small and sick
- Born at different levels of care

Babies < 2500 Grams at Birth

Initial Management

- Ideally, delivery of a low birth weight (LBW) baby should occur in hospital.
- Refer mothers in preterm labour to appropriate level of care according to local referral pathways and guidelines for criteria for neonatal intensive care unit (NICU) admission.
- If unsure - discuss with the district or regional hospital.
- In-utero transfer of a foetus is safer than transport of a low birth weight baby after birth.
- Give intramuscular vitamin K and eye prophylaxis within one hour of birth.

Initial Management

Dose of Vitamin K

- Within 1 hour of birth, a single dose of intramuscular (IM) vitamin K should be administered.
- > 1500 grams: 1 mg IM
- ≤ 1500 grams: 0.5 mg IM

Chloromycetin Eye Ointment

- Apply chloromycetin ointment to each eye within one hour of birth, regardless of mode of delivery.
- After wiping each eyelid with sterile cotton gauze, apply a thin ribbon of ointment to each of the lower conjunctival sacs. Do not wipe the eye after.
- Once administered, both vitamin K and chloromycetin eye ointment must be signed for and dated on the infant record chart.



Neonatal Conditions to be Prevented

- Sepsis
- Hypoxia
- Hypothermia
- Hypoglycaemia

Sepsis

- Wash hands before handling baby.
- Spray hands before any contact with baby.
- Educate all staff and parents on hand hygiene.
- Identify septic risk factors at birth to decide if antibiotics indicated.
- Refer to "Neonatal Sepsis" chapter.
- If antibiotics are indicated, take blood culture and start ampicillin and gentamicin.
- **Note:** A blood culture should always be taken before starting antibiotics. However, if unable to take a blood culture, never delay first doses of antibiotics in babies where sepsis is a concern.
- Keep cord clean.
- Educate mothers on cord care

Sepsis

- Early onset sepsis = < 72 hours of life
- Signs of sepsis are non-specific
- Do a Full blood count and Blood culture on admission before starting antibiotics
- Do CRP, Lumbar puncture if blood culture is positive if there are no contraindications
- Stop antibiotics if the baby is clinically well and blood cultures are negative
- No routine administering of antibiotics

Indications for Antibiotics

Absolute Indications for Antibiotics

- Suspected or confirmed infection in another baby in multiple pregnancy
- Recurrent apnoeas (temporary stopping of breathing)
- Seizures
- Mechanical ventilation
- Signs of shock

Relative Indications For Antibiotics

- Invasive group B streptococcal infection in a previous baby or maternal group B Streptococcal colonisation, bacteriuria or infection in the current pregnancy.
- Spontaneous preterm labour before 37 weeks' gestation.
- Confirmed rupture of membranes > 18 hours before onset of pre-term birth.
- Confirmed prelabour rupture of membranes at term for > 24 hours before onset of labour.

Late Onset Sepsis = \geq 72 Hours Of Life

Clinical Indications of Possible Late Onset Sepsis

- Appears unwell to a health care worker
- Lethargic
- Persistent tachycardia: heart rate \geq 160 beats per minute
- Persistent bradycardia: heart rate $<$ than 100 beats per minute
- New need for respiratory support or increasing oxygen requirements on oxygen
- Temperature $<$ 36°C unexplained by environmental factors
- Temperature \geq 38°C unexplained by environmental factor
- Signs of shock
- Persistent feed intolerance or vomiting or abdominal distension

Investigations

These include:

- FBC, Blood culture, CRP
- Cerebrospinal fluid
- Chest Xray, Abdominal Xray
- Urine MCS
- ABG

Treatment Duration

Suggested Duration of Therapy and Antibiotic Choice with Positive Blood Culture:

- For both early and late onset sepsis, therapy duration is a guide.
- Antibiotic choice according to organism, antibiotic sensitivity, site of infection and clinical response.
- Seek expert opinion (infectious disease specialist or microbiologist) for guidance on treatment choice and duration if uncertain.
- Generally, 10 to 14 days of IV antibiotics for uncomplicated bloodstream infections.
- 14 days for uncomplicated gram-positive meningitis and minimum 21 days for gram-negative meningitis.
- In early onset sepsis with Group B Streptococcus (GBS) and Listeria – gentamicin can be stopped once susceptibility patterns are known and ampicillin continued as indicated based on source of infection. Gentamicin not needed for > than 5 days

Suggested Treatment Durations and Antibiotic Choice

GBS	Bacteraemia	Ampicillin/Penicillin: 10 days
	Meningitis	Uncomplicated: Penicillin/ampicillin 14 days. Complicated: Penicillin/ampicillin minimum 21 days
	Bone/joint infections	Penicillin/ampicillin: 21-28 days
Listeria Monocytogenes	Bacteraemia	Notify. Ampicillin/Penicillin: 10 days
	Meningitis	Notify. Ampicillin/Penicillin: 21 days
E. Coli	Bacteraemia	Minimum 10 days ampicillin or cefotaxime (dependent on sensitivity of organism).
Other Gram-Negative Enteric Pathogens	Meningitis	Minimum 21 days ampicillin or cefotaxime (dependent on sensitivity of organism).
Coagulase-Negative Staphylococci (CONS)	Bacteraemia	Usually sensitive to vancomycin. Treat for at least 10 day.
	Meningitis	Usually sensitive to vancomycin. Treat for at least 14 days.
Staphylococcus Aureus (SA)	Bacteraemia	Cloxacillin for methicillin-sensitive SA (MSSA). Vancomycin for methicillin-resistant SA (MRSA). Treatment duration at least 10 days for both.
	Meningitis	Cloxacillin for methicillin-sensitive SA (MSSA). Vancomycin for methicillin-resistant SA (MRSA). Treatment duration at least 14 days for both.



Sepsis Antibiotic Dosing

AMPICILLIN Early-Onset Sepsis: Weight Based Dosing (No meningitis) Preterm and Term Babies Intravenous (IV) or Intramuscular (IM)			AMPICILLIN Early-Onset Sepsis: Weight Based Dosing (Meningitis) Preterm and Term Babies Intravenous (IV) or Intramuscular (IM)		
Weight	Post-natal Age	Dose	Weight	Post-natal Age	Dose
≤ 2 kg	≤ 7 days	50 mg/kg/dose 12 hourly	All weights	≤ 7 days	100 mg/kg/dose 8 hourly
	8-28 days	75 mg/kg/dose 12 hourly		8-28 days	75 mg/kg/dose 6 hourly
> 2 kg	≤ 28 days	50 mg/kg/dose 12 hourly			

CEFOTAXIME**Early-Onset Sepsis: Weight Based Dosing Intravenous (IV) or Intramuscular (IM) Preterm and Term Babies**

Weight	Post-natal Age	Dose
≤ 2 kg	≤ 7 days	50 mg/kg/dose 12 hourly
	8-28 days	50 mg/kg/dose 8 hourly
> 2 kg	≤ 7 days	50 mg/kg/dose 12 hourly
	8-28 days	40 mg/kg/dose 6 hourly

GENTAMICIN**Early-Onset Sepsis: Gestational Age (GA) Based Dosing (Meningitis) Intravenous (IV) or Intramuscular (IM) Preterm and Term Babies**

GA at Birth	Post-natal Age	Dose
< 30 weeks	≤ 14 days	5 mg/kg/dose 48 hourly
	15-28 days	5 mg/kg/dose 36 hourly
30-34 + 6 weeks	≤ 10 days	5 mg/kg/dose 36 hourly
	10-28 days	5 mg/kg/dose daily
≥ 35 weeks	≤ 7 days	5 mg/kg/dose daily

MEROPENEM**Late-Onset Sepsis:****Weight Based Dosing (No meningitis) Preterm and Term Babies Intravenous (IV) or Intramuscular (IM)****MEROPENEM****Late-Onset Sepsis:****Weight Based Dosing (Meningitis/Intra-abdominal infection) Preterm and Term Babies Intravenous (IV) or Intramuscular (IM)**

Weight	PNA	Dose	Weight	PNA	Dose
≤ 2 kg	≤ 14 days	20 mg/kg/dose 12 hourly	≤ 2 kg	≤ 14 days	40 mg/kg/dose 12 hourly
	15-28 days	20 mg/kg/dose 8 hourly		15-28 days	40 mg/kg/dose 8 hourly
> 2 kg	≤ 14 days	20 mg/kg/dose 8 hourly	> 2 kg	≤ 60 days	40 mg/kg/dose 8 hourly
	15-28 days	30 mg/kg/dose 8 hourly			

PENICILLIN**Early-Onset Sepsis: Weight Based Dosing (No meningitis) Preterm and Term Babies Intravenous (IV) or Intramuscular (IM)****PENICILLIN****Early-Onset Sepsis: Weight Based Dosing (Meningitis) Preterm and Term Babies Intravenous (IV) or Intramuscular (IM)**

Weight	PNA	Dose	Weight	PNA	Dose
All weights	≤ 7 days	50 000 units/kg/dose 12 hourly	All weights	≤ 7 days	150 000 units/kg/dose hourly
	8-28 days	50 000 units/kg/dose 8 hourly		8-28 days	125 000 units/kg/dose hourly

Note: Dose for congenital syphilis for preterm and term babies (with or without CNS involvement)**PNA ≤ 7 days: 50 000 units/kg/dose IV 12 hourly; at PNA 8 days increase to 50 000 units/kg/dose IV 8 hourly for total of 10 days.****PNA 8-28 days: 50 000 units/kg/dose IV 8 hourly for 10 days.**

Hypoxia

- Follow standard resuscitation guidelines at birth.
- Delay cord clamping at birth for 60 seconds, provided baby does not need resuscitation.
- Preparation is key - ensure resuscitation equipment is available and functional.
- Refer to “Immediate Care And Neonatal Resuscitation Soon After Birth” for resuscitation checklist.
- Should be skilled health professionals at delivery, at least one of whom must be trained in newborn resuscitation.
- Every newborn must either be breathing on their own or supported with positive pressure ventilation if not breathing within the first minute of life. Refer to “Immediate Care And Neonatal Resuscitation Soon After Birth.”

Oxygen therapy

- Oxygen should be delivered safely to babies
- Keep saturations within target
- Continuous Positive Airway Pressure (CPAP)- especially for preterm infants
- Nasal prongs
- High flow
- Mechanical ventilation

Hypothermia

- Hypothermia associated with mortality.
- Keep delivery room warm between 23°C and 25°C.
- Place babies that need resuscitation under a
- pre-warmed radiant heater.
- Place babies < 30 weeks gestational age (GA) or < 1500 grams warm and wet in a plastic bag without drying them first.
- Well babies \geq 1500 grams and
- \geq 30 weeks can be placed skin to skin with their mothers after drying.

Hypoglycaemia

- Start feeds and/or fluid as appropriate for GA and BW. Refer to "Feeds and Fluid" chapter.
- Breastmilk is best.
- Initiate breastfeeding within one hour of birth in well babies ≥ 34 weeks GA and ≥ 1500 grams - 34 weeks GA is usually when a baby is able to start suckling.
- For babies not able to breastfeed - support mothers to express and store breastmilk for their babies.
- Babies with BW < 1500 grams OR < 32 weeks GA at birth and babies too unwell to feed: Insert peripheral intravenous line or emergency umbilical venous line if unable to get up a peripheral line and keep baby nil by mouth. Use 10% Neonatalyte in babies ≥ 1000 grams and 5% dextrose water in babies < 1000 grams, if available. Feeds can be started at the referral centre, in babies awaiting transfer.
- NB: The umbilical venous line should be removed at the referral centre and replaced with a peripheral venous line or a sterile umbilical line if still indicated (high infection risk).

Who to Refer?

- Refer the following babies if unable to admit at current facility:
- Babies with BW < 1800 grams OR GA < 34 weeks.
- Babies unable to suck regardless of BW and GA.
- Sick babies regardless of BW and GA.
- Depending on clinical state, baby may require referral to a facility with a NICU.
- If uncertain of where to refer, discuss with referral centre at next level of care according to local guidelines.
- If referral centre decides baby needs more intensive care than they offer, they should discuss baby for transfer and feedback to the referring facility.
- Document all discussions with the date and time they occur.
- Refer to "Clinical Governance" on how to document discussions with the referral centre.

MONITORING AND ONGOING CARE

- While Awaiting Transfer or as In-Patient
- Monitor heart rate, oxygen saturations, temperature and blood glucose.
- Start oxygen if baby hypoxic (saturating < 92% in room air) or in respiratory distress but able to breath on their own.
- Start CPAP, if available. Otherwise nasal prong oxygen (NPO2).
- Follow local guidelines for surfactant administration.
- If baby apnoeic (not breathing), in severe respiratory distress or hypoxic despite oxygen → Intubate and refer to regional or tertiary centre for NICU admission.
- Target oxygen saturations 90-95% (right hand).

Monitoring and Ongoing Care

- Avoid hyperoxia and hypocarbia (low PCO₂).
- Maintain normal baby temperature between 36.5°C and 37.5°C.
- Continue feeds and/or fluid based on GA and BW.
- Update parents regarding their babies care.
- Explain need for transfer if indicated.
- Document all discussions with parents

The End

- Thank You

The End

- Thank You