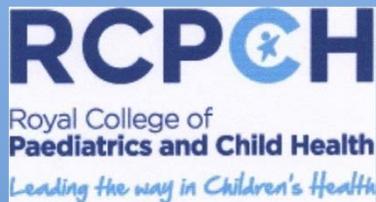


# Neonatal Standards of Care

## Thermoregulation

## Treatment of sepsis

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# Objectives

- Review neonatal standards of care
- Emphasise the importance of warmth
  - Kangaroo Mother care KMC
- Discuss severe neonatal infections
  - Diagnosis
  - Treatment
- Review use of common antibiotics in neonates

# Neonatal Standards of Care

- Clean warm environment
- Delayed cord clamping
- Ability to maintain temperature at all times
- Staff and carers have good hand hygiene
- Provision of appropriate nutrition – promotion of exclusive breast feeding
- Vitamin K
- Inclusion of mother (carer) as partner in care

# Hygiene and Warmth – *at delivery*

## *Hygiene*

1. Hand hygiene of attendants  
(Soap and Water/ Alcohol Hand Rub)
2. Clean Surface for Delivery  
(Decontaminated, Cleaned and Disinfected with 0.5% Chlorine)
3. Sterile instrument to cut Cord
4. Clamp or Cord Tie to tie cord
5. Clean Cloth to wrap baby and mother

## *Warmth*

1. Warm delivery room
2. Immediate drying
3. Warm resuscitation
4. Weigh baby and label
5. Warm transportation  
(skin-to-skin)
6. Skin-to-skin contact

# Hygiene and Warmth – *after delivery*

## *Hygiene*

1. Hand washing before handling the baby
2. Exclusive breastfeeding
3. Keep the cord clean and dry
4. Use a clean cloth as a diaper/nappy
5. Hand wash after changing diaper/nappy

## *Warmth*

1. Breastfeeding
2. Bathing postponed by at least 24 hours
3. Appropriate clothing and bedding
4. Mother and baby roomed in together
5. Training and awareness on unnecessary exposure

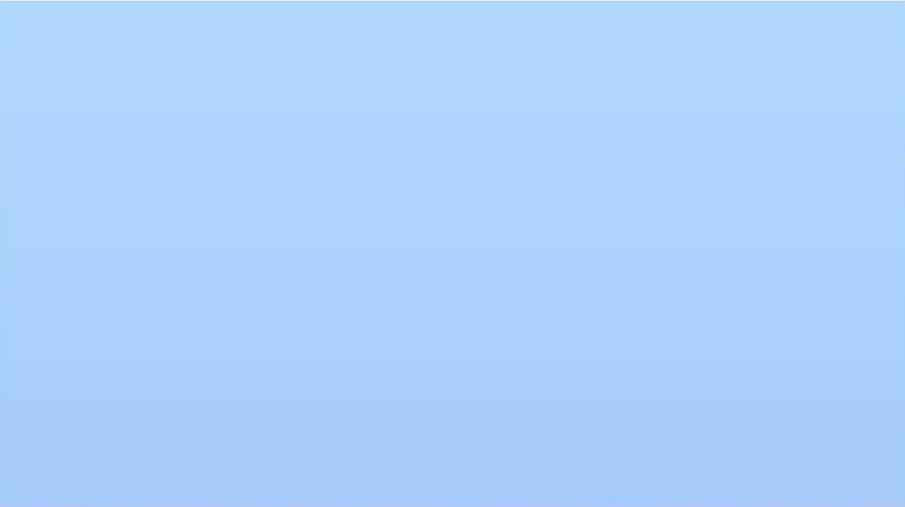
# Thermoregulation

## Term babies

- Most term babies will be warm enough with clothes, a hat and a light blanket
- If the temperature goes above 37.5 °C remove some wraps and ensure good hydration.
  - Consider sepsis.
  - In general anti-pyretics are not used

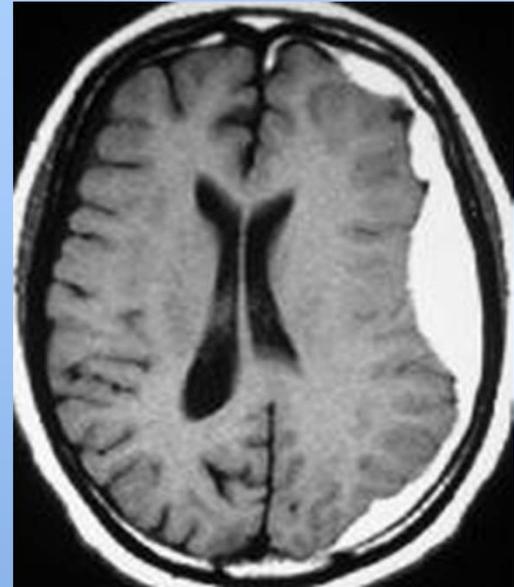
## Preterm babies

- Encourage skin to skin contact and kangaroo care
- Avoid drafts
- Provide adequate clothing and covers



# Vitamin K

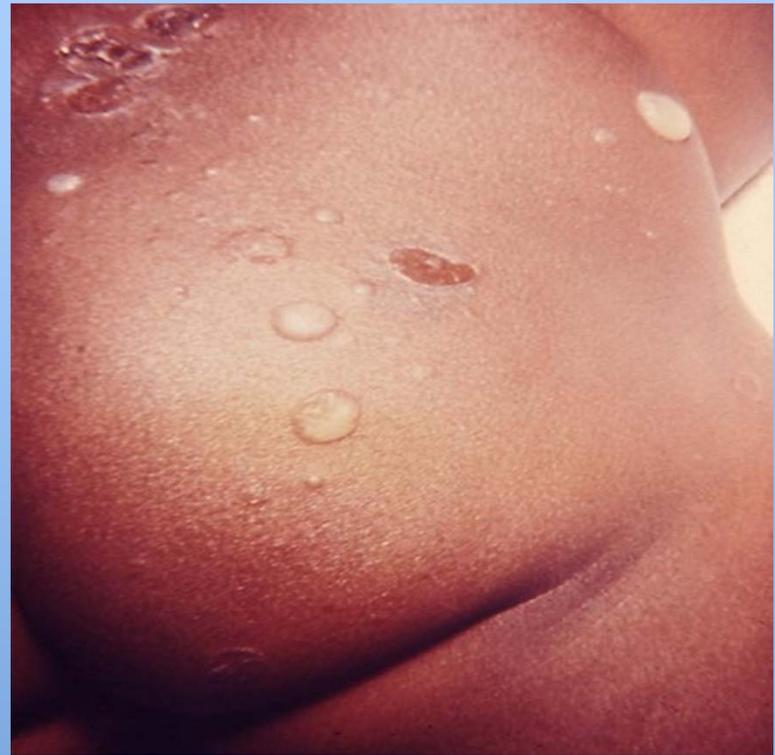
- Severe Vitamin K deficiency can result in haemorrhage & death
- 1mg Vitamin K IM given at birth prevents in neonates of all ages (0.5mg if weight < 1.5kg)



# Cord Care

- If infant born stable and active, clamp and cut the cord 1 minute after delivery
- Keep the cord clean
- No need for chlorhexidine on the cord unless working in an area where other more dangerous things may be put on the cord. In this case mothers may accept chlorhexidine as a safer alternative

**Neonatal Infection – *Is it severe?***  
***Would you admit this baby?***



# Neonatal Sepsis

```
graph TD; A[Neonatal Sepsis] --- B[Systemic Signs]; A --- C[Localized Signs];
```

## Systemic Signs

- Feeding difficulty
- Lethargic, floppy
- Convulsions
- Temperature  $\geq 37.5^{\circ}\text{C}$  or  $< 35.5^{\circ}\text{C}$
- Respiratory distress
  - fast breathing  $\geq 60$  bpm
  - Grunting
  - Severe chest indrawing
  - Nasal flaring
- Circulation
  - Grey or pale
  - Long capillary refill
- Jaundice

## Localized Signs

# Neonatal Sepsis

These signs and symptoms indicate the need for antibiotics

## Systemic Signs

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## Localized Signs

- Many or severe skin pustules
- Periumbilical Flaring (Redness)
- Umbilicus draining pus
- Bulging fontanelle
- Painful joints, joint swelling, reduced movement and irritability
- Severe abdominal distention or vomiting

# Neonatal Sepsis

- Maternal risk factors for sepsis:
  - Intrapartum maternal fever
  - Membranes ruptured more than 18 hours before delivery
  - Foul smelling amniotic fluid

# What information would you need to know to pick the best antibiotic?

- Organisms?
- Antibiotic sensitivity?
- Is there meningitis?



# Rational Use of Antibiotics

In a large study of infections acquired in the community:

552 cases of proven infection in first 2 weeks of life

Among these infections there was:

- **94% sensitivity to Ampicillin / Gentamicin**
- **82% sensitivity to Penicillin / Gentamicin**
- **77% sensitivity to Cefotaxime**

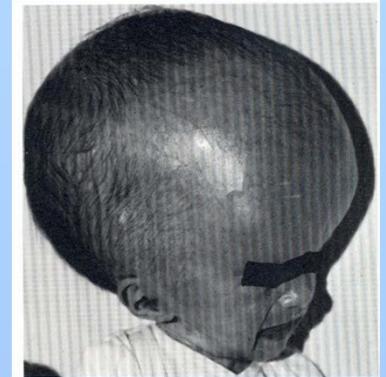
Unless you have local sensitivity data empirical treatment for neonatal sepsis should involve treatment with ***Ampicillin*** and ***Gentamicin*** for 7 days

## MPS recommendations for neonatal sepsis

	Each dose	Frequency <7days	Frequency > 7 days	route	duration
Ampicillin	100mg	12 hrly	8 hry	lv, im	5 days
		AND			
Gentamicin	5mg/kg	24 hrly	24 hrly	lv, im	5 days
or Amikacin	15 mg/kg	24 hrly	24 hrly	lv, im	5 days

For skin sepsis with suspected Staph cloxacillin may be used instead of ampicillin

# Is there meningitis?



- You will never know unless you do an LP!
  - < 30% proven cases in young infants have a bulging fontanelle / stiff neck / convulsions
- Meningitis is common in ‘neonatal sepsis’ – up to 1 in 5 babies with sepsis had meningitis in one Kenyan study (*Laving, 2003*).
- **Treatment**
  - IV Ampicillin + IV Gentamicin + IV Cefotaxime
  - Reassess therapy based on culture and antibiotic sensitivity if feasible
  - Minimum of 2 weeks if Gram +ve and **3 weeks** iv or im if Gram –ve; if you don't know the organism then 3 weeks

# Antibiotic doses

Important to check guidelines as doses for some antibiotics change according to:

- Weight
- Gestation
- Baby's age in days
- Severity of infection

## Gentamicin

- 5mg/Kg every 24 hours  
but in low birth weight babies
- 3mg/Kg every 24 hours is safer

# Gentamicin toxicity

- Deafness / balance disturbance rare if dose correct
- Renal impairment, uncommon
- Both above more likely if frusemide also given, especially in high dose.
- More likely if long term use and / or renal impairment already

# Supportive care of a septic neonate

- Warmth
- Respiratory support
  - O<sub>2</sub> if cyanosed or respiratory distress
  - CPAP if available and needed
  - Ventilation
- Intravenous fluids
  - Ng feeding with expressed breast milk
  - Consider dextrose by iv infusion
  - Consider dopamine infusion if persistently poor perfusion
- Treat jaundice with phototherapy if indicated

QUESTIONS?

# Summary

- All newborns should have access to a clean, warm environment during and after delivery
- Hand washing is essential
- All newborns should get Vit K
- Need rational antibiotic use in treatment of neonatal infections. Simple antibiotics still effective.
- Always look for neonatal meningitis

# ACKNOWLEDGEMENTS



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