CRITERIA FOR NEONATAL VENTILATION

Due to a shortage of resources, to ensure equitable access to care and due to the morbidity associated with premature birth and hypoxic damage it is necessary to carefully and thoughtfully consider each baby's need for ventilation.

MEDICAL INDICATIONS FOR VENTILATION:

NB: Clinical signs must be prioritized over laboratory
The threshold for ventilation must be lower for premature than term babies
Even if a baby meets the criteria for ventilation this can only be commenced if all resources are available for safe, effective ventilation

Clinical signs:
Respiratory failure:

- Severe recession
- Persistent grunting
- Severe acidotic breathing
- Visible tiring/irregular breathing/gasping
- Prolonged or Recurrent Apnoea
- Premature babies requiring >40%O_2 on nCPAP
- Septic shock
- Status epilepticus
- Supportive for surgical patients / NEC Bells stage 2/3

Whilst a blood gas may be helpful indications for ventilation may be medical or surgical and all decisions on ventilating should be made by a specialist or experienced Medical Officer or registrar in consultation with a specialist.

NB.

- Be sure to check maternal notes for any management plan (eg from fetal anomaly clinic) prior to delivery
- Where possible any decision should be fully discussed with the parents prior to delivery and further management must be in consultation with parents
- Weight & gestation must be confirmed at delivery **u**sing modified Ballard score / reliable LNMP / early US before care decision is made
- Any decision is subject to consultant approval

If medical indications exist for assisted ventilation of a neonate then the following factors must be considered before initiating this:

Category	COMFORT CARE	BASIC NEEDS	INTERMEDIATE CARE	ACTIVE CARE	FULL CARE
Gestation	< 26 weeks	26 – 27 weeks	27-28 weeks	≥28 weeks	> 28 weeks
Weight	< 600g	600 – 800g	800 – 900g	900-1000g	> 1000g
Care	Pre-delivery counselling Do not actively resuscitate Dry, stimulate, skin-to-skin care or wrap and place in incubator in labour ward No suction, bag-valve mask/ T-piece resuscitator ventilation or immediate IV lines If breathing 30 mins after birth take to nursery for warmth, O_2 and fluid	Pre-delivery counselling Basic resuscitation Do NOT intubate Transfer to nursery for Warmth, O_2 & Fluid If survives more than 72 hours consider TPN if this is available	Pre-delivery counselling Full resuscitation Nasal CPAP Consider in-out surfactant, after discussion with consultant Warmth, O_2 & Fluid	Pre-delivery counselling Full resuscitation Nasal CPAP & in-out surfactant. Warmth, O_2 & Fluid **NB**: Ventilation MAY be considered by a consultant in certain circumstances as listed below.	Comprehensive care including ventilation

District Level CPAP - >1000g or >28 weeks gestation
Transfer to Regional hospital if requires > 40% O_2 on CPAP

<u>Ventilation between 900-1000g</u> can be considered if ALL the following conditions are met:

- Failed in-and-out surfactant and nCPAP
- ≥27 weeks gestation as assessed by reliable LNMP / early ultrasound/Ballard score
- 5min Apgar >6 AND Base excess on cord blood / initial blood gas worse than -12
- Inborn
- No severe congenital sepsis
- Resources are available in the hospital where delivery has taken place

EXCLUSION CRITERIA

Even when babies are eligible for ventilation on the basis of weight or gestation age ventilation should not offered in the following circumstances:

1) Perinatal Hypoxia / Birth Asphyxia

Babies exposed to perinatal hypoxia, who have any one of the following problems:

- No heartbeat at 10 minutes
- No spontaneous respiration by 20 minutes, despite full resuscitation
- *5 minute* Apgar <6 AND cord arterial blood base deficit worse than -12 AND / OR pH <7,0
  If a cord blood gas or early arterial blood gas is not available, the decision to ventilate will depend on the presence or absence of other organ involvement in significant hypoxic ischaemic damage
- Grade III/Severe Hypoxic Ischaemic Encephalopathy: (Severe, global, truncal and peripheral hypotonia; vacant stare; drooling saliva; absent/very depressed primitive reflexes; severe, intractractable seizures)

2) Major Congenital Abnormalities

- Babies with major congenital abnormalities where involvement of one or more organ systems is deemed incompatible with life
- The decision not to ventilate a baby with congenital abnormalities should involve the Paediatrician.

3) Intra/Periventricular Haemorrhage

- Grade IV
- Bilateral Grade III, with other complications/other organ involvement
- Severe periventricular leukomalacia

Not meeting these designated exclusion criteria *does not imply* the meeting of *inclusion* criteria

N H MCKERROW
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