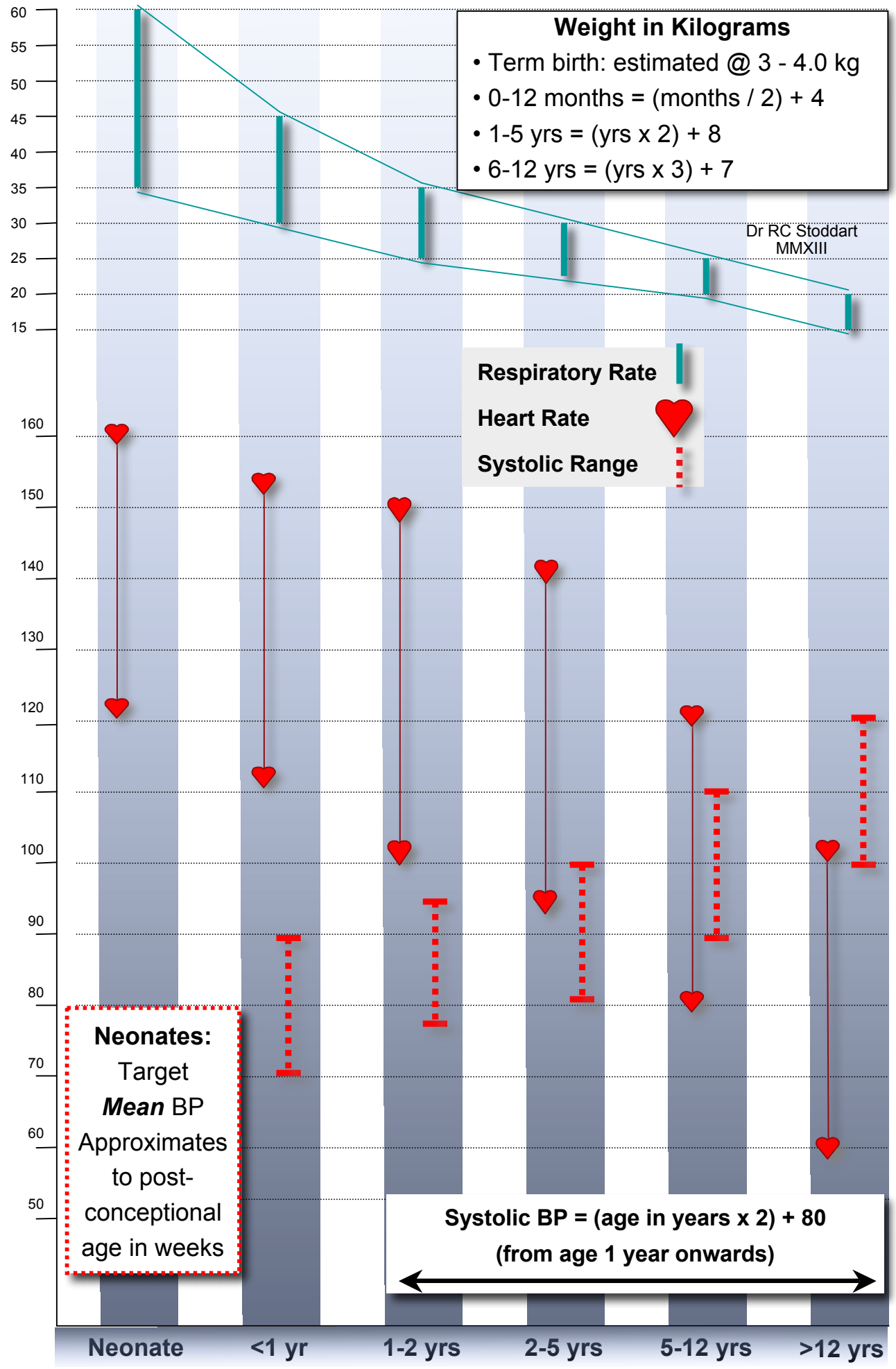
Emergencies in Paediatric Anaesthesia

Additional tool for non-paediatric specialist anaesthetists

Brighton and Sussex University Hospitals NHS

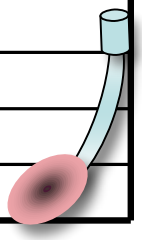


Paed Anaesthesia - Quick Ref ABCD chart

A

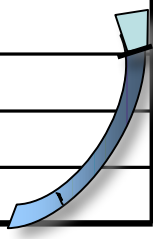
Head Position: Neutral for neonates, infants and toddlers.
Facemasks: Size from bridge of nose to cleft of chin. Round shape suitable for neonates & infants.
Oro-pharyngeal Airway: Size from incisors to angle of the jaw. Do not invert for insertion.

Weight (kg)	Size	Cuff Volume (mls)
0-5	1	2-5
5-10	1.5	5-7
10-20	2	7-10
20-30	2.5	12-14
Large child >30	3	15-20



Smaller LMAs have complication rates that increase with decreasing age of the child.

Weight / Age	ET Tube Size (mm)
<2 kg	2.5
2-4kg Term neonate	3 - 3.5
3 month - 1 yr	3.5 - 4
Over 1 year	(Age / 4) + 4



•**ETT Length:** Oral = (age/2)+12 Nasal = (age/2)+15
•**Cuffed tube:** decrease size by 0.5 & monitor cuff pressure. **For experienced users only.**

B

Tidal volume: 7-10 mls/kg (usually achieved with Inspiratory pressure of 15-20 cmH_2O)
Higher closing volume: beware small airway collapse. Consider PEEP, especially in neonates.
Adequacy of ventilation: CLINICAL. Assess chest movement, colour, pulse-oximetry and end-tidal CO_2
Spontaneous ventilation: Rate dependent. Predominantly diaphragmatic. Beware diaphragmatic splinting.
Once airway secure and any hypoxia is treated, avoid prolonged 100% O_2 administration.

C

Blood Volume: Term neonate: 90 ml/kg Infant: 85 ml/kg Child: 80 ml/kg
No indication for hypotonic fluids in resuscitation (for use by specialist, experienced users only).
Resuscitation: crystalloid (+/- colloid) 20 mls/kg boluses, 10 mls/kg in head injury & trauma.
Beyond 60 mls/kg, consider (intubation and) ventilation.
Maintenance: crystalloid **4-2-1** regimen. Regular assessment of **BLOOD SUGAR** (especially in neonates).
Adequacy of circulation: conscious level, peripheral temperature, capillary refill, HR, BP, urine output.
DC Shock: VF: 4J/kg SVT: Synchronous DC cardioversion, initially 1 J/kg, then 2 J/kg.

D

All doses are I.V. unless stated **(It is the doctor's responsibility to ensure drugs are used appropriately for each clinical situation)**

Adrenaline: *Cardiac Arrest* - 10 microg/kg I.V. *Anaphylaxis* - 10 microg/kg I.M.	**Suxamethonium:** 2 mg/kg I.V. 3-4 mg/kg I.M. Premedicate neonates with atropine. Avoid in burns, muscle necrosis, myopathies, hyperkalaemia.
Atropine: 20 microg/kg (minimum dose 100 microg, maximum 1.2 mg)	**Rocuronium:** 1 mg/kg (RSI intubating dose) **Atracurium**: 0.3-0.5 mg/kg
Glucose 10%: 2 mls/kg **Neonates**: 2.5mls/kg or IV infusion	**IV Ketamine:** 1-2 mg/kg **IM Ketamine:** 5-10 mg/kg **Propofol:** 2-5 mg/kg **Thiopentone:** 3-4 mg/kg
Intralipid 20%: Initial bolus 1.5 ml/kg over 1min **Dantrolene:** Initial bolus 2-3 mg/kg	**Fentanyl:** 1-2 microg/kg **Morphine:** 0.1 mg/kg **Lorazepam / Midazolam:** 0.05-0.1 mg/kg

DRUGS

References:

strs.nhs.uk (an excellent resource for drug calculation)
Paediatric Advanced Life Support. Resuscitation Council (UK) October 2010 and the October 2011 update

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MMXIII

ROYAL ALEXANDRA CHILDREN'S HOSPITAL