

Calculate Maintenance IV fluids	
Under 10 kgs	... mls/kg/day
Over 10kgs use the following formula	
1st 10kgs	100mls /kg
2 nd 10 kg (or part thereof)	50mls/kg
Subsequent kg	20mls/kg
Males max 2500mls/day	Females 2000mls/day

Medications: (refer to CATS website and on line drug calculator for correct dosing)	
sedation	Morphine Midazolam Fentanyl Propofol Clonidine ketamine
Muscle relaxants	Vecuronium Atracurium Suxamemethonium Rocuronium Pancuronium
Vasoactive (inotropes/pressors)	Adrenaline Noradrenaline Dopamine Milranone Dobutamine Vasopressin
Bronchodilators	Salbutamol Aminophylline

Blood pressure ranges (mmHg)

Age	Systolic BP 5 th centile	Systolic BP 50% centile	Mean BP 5 th Centile	Mean BP 50% centile
0-1 month	50	60	35	45
1-12 months	70	80	40	55
1-10 years	70 + (2 x age in yrs)	90 + (2 x age in yrs)	40 + (1.5 x age in yrs)	55 + (1.5 x age in yrs)
15 years	90	120	65	80

Age	Mean Heart Rate (awake range)
Newborn – 3 months	(85 – 205)
3 months – 2 years	130 (100 – 180)
2 years – 10 years	80 (60 – 140)
> 10 years	75 (60 – 100)

(normal value reference ranges: Resuscitation Council UK Paediatric Immediate Life Support 3rd Edition July 2018)

Age	Respiratory rate (breaths min)
<1	30 – 40
1 – 2	26 - 34
2 - 5	24 - 30
5 – 12	20 – 24
> 12 yrs	12 - 20



Bedside nurses aide memoire for the paediatric critical care patient.

Preparing for Paediatric Resuscitation

(patients aged 1 to 10 years)

- W** weight  (age + 4) x 2 = kg
- E** energy  4 joules / kg
- T** tube  (age / 4) + 4 = diameter in mm
- F** fluid  20 ml/kg bolus
- L** lorazepam  0.1 mg/kg
- A** adrenaline  0.1 ml/kg (of 1:10,000 solution)
- G** glucose  2 ml/kg (10% dextrose solution)

Reference: FAQs - paediatric life support (Resuscitation Council UK) 2016. Acronym used on the EPALS course
Poster by sam Birks (@BirksMD)

Intubated patients deteriorating..... Think **DOPES**

Displacement of ETT

Oesophagus? Right main bronchus? Accidental extubation?

Obstruction of ETT or circuit

Mucous plug? Kinked circuit? Flooded HME?

Pneumothorax

Auscultate? Equal breath sounds? CVS instability?

Equipment failure

Ventilator disconnected? Ventilator settings? O2 failure?

Stomach / **S**tacking breaths

Aspirate gastric tube? Review PIP / PEEP? Disconnect vent and facilitate decompression of chest (caution - AGP)

Characteristics of the simple acid-base disturbances

Disorder	Primary pH	Primary	Compensated response
Metabolic acidosis	↓	↓ [HCO ₃ ⁻]	↓ P _{co2}
Metabolic alkalosis	↑	↑ [HCO ₃ ⁻]	↑ P _{co2}
Respiratory acidosis	↓	↑ P _{co2}	↑ [HCO ₃ ⁻]
Respiratory alkalosis	↑	↓ P _{co2}	↓ [HCO ₃ ⁻]

Mode: type of ventilation that has been set for your patient, it will depend on the type of ventilator available and the medics familiarity with the equipment.

Oxygen Saturations and FiO₂: record the amount of oxygen the patient is receiving and their oxygen saturations.

Respiratory rate: the rate delivered by the ventilator plus any additional breaths the patient may be taking. If the patient is muscle relaxed, they shouldn't be able to initiate any breaths and the ventilator should be providing sufficient breaths per minute.

Tidal volume: amount of gas (in mls) being moved with each breath inspiratory and expiratory and might be written as TV_i or TV_e on the ventilator. Usually aim for between 5-7mls/kg of tidal volume.

Minute volume: usually expressed as expired minute volume, calculated by multiplying the tidal volume x respiratory rate, so the amount of gas breathed out per minute. Usually written as MV_e

Peak Inspiratory Pressure (PIP): the highest level of pressure that is applied to the lungs to force gases into the lungs during inspiration.

Positive End Expiratory Pressure (PEEP): the measure of the pressure stenting the lungs open at the end of expiration, keeps gas in the alveoli at the end of expiration.

COMPLETE ALL ACTIONS WITHIN ONE HOUR

- 01 ENSURE SENIOR CLINICIAN ATTENDS**
NAME: _____ GRADE: _____ TIME: :
- 02 OXYGEN IF REQUIRED**
START IF O₂ SATURATIONS LESS THAN 92% - AIM FOR O₂ SATURATIONS OF 94-98%
IF AT RISK OF HYPERCARBIA AIM FOR SATURATIONS OF 88-92% TIME: :
- 03 OBTAIN IV ACCESS, TAKE BLOODS**
BLOOD CULTURES, BLOOD GLUCOSE, LACTATE, FBC, U&EA, CRP AND CLOTTING
LUMBAR PUNCTURE IF INDICATED TIME: :
- 04 GIVE IV ANTIBIOTICS**
MAXIMUM DOSE BROAD SPECTRUM THERAPY
CONSIDER: LOCAL POLICY / ALLERGY STATUS / ANTIVIRALS TIME: :
- 05 GIVE IV FLUIDS**
GIVE FLUID BOLUS OF 20 ml/kg if age <16, 500ml if 16+
NICE RECOMMENDS USING LACTATE TO GUIDE FURTHER FLUID THERAPY TIME: :
- 06 MONITOR**
USE NEWS-2. MEASURE URINARY OUTPUT; THIS MAY REQUIRE A URINARY CATHETER REPEAT LACTATE
AT LEAST ONCE PER HOUR IF INITIAL LACTATE ELEVATED OR IF CLINICAL CONDITION CHANGES TIME: :

SEPSIS

RED FLAGS AFTER ONE HOUR - ESCALATE TO CONSULTANT NOW



ETC0₂: carbon dioxide being produced from the lungs and measured as end tidal carbon dioxide is the gold standard for confirmation of correct placement of the ETT and should be measured continuously on an intubated patient.

kPa	4.0 – 5.7
mmHG	35 - 45

Calculate urine output in Mls/kg/hour
If catheterised, calculate hourly or two hourly
If voiding in nappies, calculate at every nappy change
Report any urine output less than 1ml/kg/hr