Pediatric Fluid Management Guidelines

This document contains visual references and formulas used in calculating maintenance and rehydration fluid requirements for pediatric patients. It includes guidelines for patients over 28 days old and intravenous fluids for neonates, including example scenarios.

INTRAVENOUS FLUIDS AND ELECTROLYTES

1. This guideline applies to pediatric patients older than 28 days

2. Maintenance fluids per day should be calculated using the "100, 50, 20" rule (also known as the "4, 2, 1" where the calculation is per hour rather than per day). The maximum fluid volume per day for larger children is 2500ml.

100ml/kg/day for the 1st 10kg = 4ml/kg/hr for the 1st 10kg

50ml/kg/day for the 2nd 10kg = 2ml/kg/hr for the 2nd 10kg

20ml/kg/day for every kg thereafter = 1ml/kg/hr for every kg thereafter

3. If the child is dehydrated, the water deficit is calculated by multiplying the body weight by the percentage dehydration to obtain the deficit in litres

e.g. 10kg child, 3% dehydration, 10 * 0.03 = 0.3 litres = 300ml deficit

Fluid deficit in mls:

Weight (kg)	Dehydration (%)			
	3	5	10	15
3	90	150	300	450
5	150	250	500	750
10	300	500	1000	1500
15	450	750	1500	2250
20	600	1000	2000	3000
30	900	1500	3000	4500
40	1200	2000	4000	6000
50	1500	2500	5000	7500

4. The fluid used to rehydrate is the same as the fluid used to provide the maintenance infusion. Rehydration should be carried out evenly over at least 24 hours. If the dehydration is 10% or greater, then rehydration should be carried out over a longer period.

e.g. 15 kg child, 5% dehydration: maintenance 1250 ml/day, deficit 750 mls

therefore prescribe 2000 mls/day (80 mls/hr) for the 1st 24 hours, 1250 mls/day thereafter

e.g. 30 kg child, 10% dehydration: maintenance 1750 ml/day, deficit 3000 mls

plan to correct the deficit over 48 hours, therefore prescribe 3250 ml/day (1500 + 1750) (135 ml/hr) for the 1st 48 hours, followed by maintenance of 1750 ml/day thereafter.

INTRAVENOUS FLUIDS IN NEONATES

This guideline is applicable to CE neonatal patients from birth till 28 days old.

Day Of Life	ml / kg / day
1	60
2	90
3	120
4 till 28 days	150
More than 28 days old	'4-2-1' Regime

Normal Urine Output

Neonates > 0.5 ml/kg/h

Infants and above > 1 ml/kg/h

Expected Systolic Blood Pressure (SPB)

< 1 month of age: SBP > 60 mmHg

1 month to 1 year: SBP > 70 mmHg

1 to 10 years: SBP > 70 + (age in years * 2) mmHg

Minimum Systolic Blood Pressure Calculator

Formula: 70 + (age * 2)

The formula is only applicable for children up to 10 years old. Thereafter will be a minimum of 90 mmHg.

Hours Of Life (HOL)

Used to calculate the number of hours of life in small babies.

Formula: (date and time now – date and time of birth)