

Neonatal Medicines Guide

Key Points

- This is a locally compiled guide of medication doses and administration information which should be used alongside local policies to guide medicine selection.
- It is not a comprehensive guide and for medicines not listed consult BNFC
- See Anti-infectives and Infusion guides for other medications

**This is a controlled document. If you are using a printed copy, check it against the guidelines site to ensure you are using the latest edition.
Print copies must be destroyed after use.**

Abbreviations

BNFC	British National Formulary
SVT	Supraventricular tachycardias
ECG	electrocardiogram
cGA	Corrected Gestational Age

For specialist medicines or where you require further advice, please consult your pharmacist, consultant or specialist/tertiary centre.

Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Abidec®	Prevention of vitamin deficiency for premature babies	Oral	See vitamin supplementation appendix in 'Enteral feeding guideline'	Once daily Start when on full enteral feeds.	0.6mL daily (Can split to 0.3mL BD if not tolerated)	Many preterm formulas contain insufficient vitamin D for full supplementation	0.6mL contains Vitamin A (1333 units), B group, C & D (400 units) Contains sucrose and arachis (peanut) oil	Prescribe in conjunction with vitamin supplementation appendix in 'Enteral feeding guideline'
Adenosine	SVT >220bpm	Rapid IV injection	150 microgram/kg	Increase dose in 50-100micrograms/kg increments every 2 minutes until tachycardia terminated or maximum single dose given	300 microgram/kg per dose - may be repeated if necessary	Monitor ECG continuously Injection painful and rapidly metabolised in peripheral circulation	6mg/2mL vials Dilute 1mL in 20mL sodium chloride 0.9%* to give 150 micrograms/mL Give rapidly in <2 seconds via central line (if possible) or large peripheral vein. Followed by rapid sodium chloride 0.9% flush	150 microgram/kg $\equiv$ 1mL/kg of diluted solution Must be given by or under direct supervision of a doctor
Adrenaline	Cardiac arrest	Rapid IV or intraosseous injection	Initial dose: 10 microgram/kg Subsequent doses: up to 30 microgram/kg		30microgram/kg per dose – may be repeated if necessary	Monitor ECG continuously Some brands contain sodium metabisulphite	1 in 10,000 ampoules (100 micrograms/ mL) Give rapidly centrally (if possible) or large peripheral vein. Followed by rapid sodium chloride 0.9% flush	10microgram/kg $\equiv$ 0.1mL/kg of 1 in 10,000 injection
Atropine	Intubation pre-medication LISA	IV injection	See intubation or Less-Invasive Surfactant Administration (LISA) guideline					

*Always check product leaflet for diluent information

Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Caffeine (expressed as caffeine citrate)	Apnoea of prematurity LOADING DOSE	Oral	20 mg/kg	Single loading dose		Tachycardia, arrhythmia, jitteriness	10mg/mL injection for IV or oral use 10mg/mL oral solution	Prescribe as caffeine citrate Caffeine citrate 2mg ≡ caffeine base 1mg
		IV infusion over 30 minutes						
	Apnoea of prematurity MAINTENANCE DOSE	Oral	5 mg/kg	Once daily	Dependant on clinical need increase to 20mg/kg/day	Observe IV site carefully for extravasation & skin burn	Infuse centrally (if possible) undiluted using a syringe pump	
		IV infusion over 10 minutes	Starting 24 hours after loading dose					
Calcium	Hypocalcaemia	Oral	0.25 mmol/kg	Four times a day	1mmol/kg/day in divided doses	Alliance Calcium Syrup (calcium lactate and calcium gluconate) contains 0.51mmol/mL calcium, also contains passion fruit and mango flavour, and fructose 2g/5mL If syrup is not available: Calcium gluconate 10% injection may be given orally For babies over 37 weeks cGA or >4 weeks old use Calvive 1000 effervescent tablets (calcium lactate gluconate, calcium carbonate) contains 25mmol calcium. Disperse 1 tablet in 20mL water to give approx. 25mmol in 25mL (1mmol in 1mL). Note wait for tablet to fully disperse and stop fizzing before administering dose. (Approx 5 minutes. Contains small amounts of benzyl alcohol. May block tube – use with caution.		
		IV infusion	0.5 - 1 mmol/kg over 24 hours		Maximum rate 0.022mmol/kg/ hour	Monitor ECG Risk of extravasation when given intravenously (osmolality 726mOsmol/L), switch to oral as soon as suitable	Calcium gluconate 10% (0.225mmol/mL) ampoules Dilute to at least 0.045mmol in 1mL (i.e. 1 in 5 dilution) with glucose 5% or sodium chloride 0.9% (may be given neat via central-line) *	0.11 mmol/kg is equivalent to 0.5 mL/kg of calcium gluconate 10%
	Rapid correction of hypocalcaemia or hyperkalaemia	Slow IV injection over 3-5 minutes	0.11 mmol/kg					<u>Do not infuse alongside ceftriaxone (even via separate lines)</u>

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Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Chlorothiazide	Oedema Chronic Lung Disease Heart failure - may use with spironolactone	Oral	10 - 20 mg/kg	Twice daily	20mg/kg twice daily	Electrolyte imbalance Hyperglycaemia	250mg/5mL suspension	Stop treatment if no clinical response after 48-72 hours
	Congenital hyperinsulinaemia – use in combination with diazoxide	Oral	As per tertiary centre	Twice daily	Usual max 10mg/kg daily in divided doses	Electrolyte imbalance		Potentiates effect of diazoxide

Colecalciferol (Vitamin D₃)	Treatment of clinical or biochemical Rickets	Oral	3000 units	Once daily To be reviewed after 8 weeks	Adjust as necessary	Hypercalcaemia, metastatic calcification Monitor calcium and phosphate levels	Fultium D3: 2740 IU/mL (200 units $\equiv$ 5microgram $\equiv$ 3 drops) SunVit D3: 2740 IU/ml (200 units $\equiv$ 5microgram $\equiv$ 2 drops) THORENS 10,000 IU/ml (200 units $\equiv$ 5microgram $\equiv$ 1 drop)	Round to 1mL for ease of administration Thorens may be used for buccal administration as per Metabolic Bone Disease Guidelines
Cyclopentolate	Preparation for Retinopathy of Prematurity (ROP) screening	Ocular	1 drop 30-60 minutes pre-procedure		Non-caucasian babies may require a second dose to dilate the pupil fully	Sympathomimetic, tachycardia Effect may last for up to 24 hours	0.5% Minims	To be used in conjunction with phenylephrine 2.5%
Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Dalivit® (for use when Abidec is unavailable or familial peanut allergy)	Vitamin supplements for premature babies	Oral	0.3 mL	Once daily Start when on full enteral feeds	0.3mL daily	Many preterm formulas contain insufficient vitamin D	0.3mL contains Vitamin A (2500 units), B group, C and D (200 units) Does NOT contain arachis oil (peanut oil) or soya Give colecalciferol 200units alongside to make up recommended daily vitamin D dose	Prescribe in conjunction with vitamin supplementation appendix in 'Enteral feeding guideline'
Diazoxide	Congenital hyperinsulinaemia	Oral	Prescribe after discussion with tertiary centre Use in conjunction with chlorothiazide					
Fentanyl	Intubation pre-medication LISA	IV injection	See intubation or LISA guideline					

*Always check product leaflet for diluent information † - displacement values already accounted for

Folic acid	Folate-deficient megaloblastic anaemia	Oral	500 micrograms/kg	Once daily for up to 4 months	Maximum 5mg daily (10mg in malabsorption states)	May decrease plasma concentration of phenytoin and phenobarbitone if given concurrently	2.5mg/5mL suspension	
	Haemolytic anaemia; metabolic disorders		Neonate 250 micrograms Child 1 month - 1 year 2.5 – 5 mg	Once daily		Rule out and/or correct vitamin B12 deficiency before treating with folic acid as neuropathy may be precipitated		
Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Furosemide	Oedema in heart failure, renal disease, and hepatic disease	Oral	0.5 – 2 mg/kg	Neonate <31 weeks CGA Every 24 hours	Maximum rate of 0.5mg/kg/min	Hypokalaemia	50mg/5mL oral solution 20mg/2mL injection can be diluted and given orally	Incompatible with dopamine and dobutamine
	Pulmonary oedema	Slow IV injection	0.5 – 1 mg/kg	Neonate >31 weeks CGA Every 12 – 24 hours		Short term use only in premature babies due to risk of nephrocalcinosis	May be diluted with sodium chloride 0.9%* to aid slow administration; give over 5-10mins	
Glucose	Hypoglycaemia	IV injection	250 mg/kg Followed by IV infusion (see infusions guide)				10% (10g in 100mL) solution for infusion 250mg/kg = 2.5mL/kg	Maximum concentration for peripheral administration is 12.5%
Hyaluronidase	Extravasation injury	SUB CUT injection	500 – 1000 units				Dilute 1500units to 3mL with water for injections* Inject in aliquots as directed	Dose dependent on severity of extravasation injury

*Always check product leaflet for diluent information † - displacement values already diluent information

Hydrocortisone	Acute adrenocortical insufficiency (Addisonian crisis)	Slow IV injection over 1-10 mins	Initially 2.5mg/kg as a single dose Followed by 2mg/kg every 6 hours			See BNFc for full list	100mg vial (as sodium succinate)	If oral preparation required: Unlicensed 5mg/5mL oral suspension
	Hypotension in premature neonate		2.5 mg/kg	Every 4 hours for two doses, then every 6 hours for 48 hours or until blood pressure recovers Dose then to be reduced gradually over at least 48 hours			Reconstitute 100mg vial with 1.9mL water for injections*† to give a concentration of 50mg/mL Dilute if required with sodium chloride 0.9% or glucose 5%*; give over 1-10 minutes	
Hyoscine hydrobromide	Hypersalivation	Transdermal	¼ (one quarter) patch	Change every 72hrs	Change every 48hrs if tolerance develops	Apply to a clean, dry, hairless area of skin	1.5mg 2.5cm² patch releasing 1mg over 72hrs	Patches may be cut or the portion of the patch that is not required covered, so that it does not touch the skin

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† - displacement values already accounted for

Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Ibuprofen	Closure of ductus arteriosus LOADING DOSE	Slow IV injection over 15mins	10 mg/kg	Single dose	3 doses per course	Monitor U&E's, renal function, urine output and platelet levels. Contraindicated in hyperbilirubinaemia	10mg/2mL ampoule If necessary, may be diluted* with sodium chloride 0.9% or glucose 5%	Course may be repeated after 48 hours if necessary
	Closure of ductus arteriosus MAINTENANCE DOSE		5 mg/kg	2 doses to be given at 24-hour intervals, starting 24 hours after loading dose				
Lansoprazole	Gastro-oesophageal reflux disease	Oral	0.5 to 1 mg/kg	Once daily	15 mg/day	May increase the risk of GI infections Reported cases of subacute cutaneous lupus erythematosus (SCLE)	15mg orodispersible tablets may be dispersed in water (do not crush the tablet) for oral or NG administration. Halve tablet before dispersing for doses under 7.5mg Disperse 15mg tablet in 10mL of sterile water	

Levetiracetam	Seizures: LOADING DOSE	IV injection over 5 minutes	20 - 40mg/kg	Single dose	40mg/kg in 24 hours		500mg/5mL ampoules Dilute the required dose to 50mg/mL in sodium chloride 0.9% or glucose 5%	Use under advice of tertiary centre only
	Seizures MAINTENANCE DOSE	IV infusion over 15 minutes	5 – 10 mg/kg	Once or twice daily <u>To start 24 hours after loading dose</u>	May increase by 10 mg/kg/dose to a maximum of 30mg/kg BD on tertiary centre advice only	There is no experience with the use of IV levetiracetam for longer than 5 days	500mg/5mL ampoules Dilute the required dose to between 2.5 - 15mg/mL using sodium chloride 0.9% or glucose 5%	Titration regimens may differ depending on the tertiary centre, use monograph for guidance only. The oral route may be used for maintenance, doses are equivalent to IV
Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Levothyroxine	Congenital hypothyroidism	Oral	Initially 10 – 15 <i>micrograms/kg</i>	Once daily – preferably in the morning Adjust in steps of 5 <i>micrograms/kg</i> every 2 weeks or as necessary according to blood results		Maximum 50 <i>micrograms</i> daily	Monitor TSH, free T4, growth and weight gain. Use 50% dose if cardiac disease present	25 <i>microgram</i> tablets can be crushed and dispersed in 5mL of water
Lidocaine	Local infiltration for painful procedures	Local infiltration	Up to 3 mg/kg	Dose may be repeated not more often than every 4 hours		Avoid injection into infected or inflamed tissues	1% (10mg/mL) ampoule	1mg is equivalent to 0.1mL of 1% lidocaine
Loperamide	Diarrhoea	Oral	100 <i>microgram/kg</i>	Two to four times a day	Max 2mg/kg/day	Respiratory depression	2mg tablets – crush and dissolve in water 2mg capsules – open and disperse contents in water Do not use loperamide liquid in neonates due to excipients	If on enteral feeds – give 30 minutes before feed

Magnesium glycerophosphate	Hypomagnesaemia	Oral	0.2mmol/kg	Three times a day	Increase according to plasma magnesium level	Diarrhoea	1mmol/mL unlicensed liquid <i>Only Prulab pharma manufacturer suitable for neonates due to excipients</i> If above preparation not available, magnesium aspartate sachets (10mmol) can be used – dissolve one sachet in 10mL of WFI	
Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Magnesium sulphate	Hypocalcaemia	IV infusion	100 mg/kg every 12 hours		2–3 doses	Rate of administration should not exceed 10mg/kg/min Monitor blood pressure, respiratory rate, urinary output Infuse centrally where possible	10% ampoules (may be given undiluted) and 20% ampoules Dilute to a concentration of 10% (100mg/mL) with 5% or 10% glucose or 0.9% sodium chloride If fluid restricted, maximum concentration is 20% (200mg/mL)	0.2mmol is equivalent to 50mg of magnesium
	Persistent pulmonary hypertension LOADING DOSE		200 mg/kg over 20–30 minutes followed by continuous intravenous infusion					
	Persistent pulmonary hypertension MAINTENANCE DOSE		20–50 mg/kg/hour (to maintain plasma magnesium concentration of 3.5–5.5mmol/L)		Max 5 days if responding			
Morphine sulphate	Neonatal abstinence syndrome (NAS)	Oral	Follow NAS guideline on Intranet			Monitor NAS score	100microgram/mL oral solution (Special ordered from Newcastle Manufacturing Unit)	See Neonatal Abstinence Guideline for directions on how to wean

	Sedation Relief of pain	IV injection over 5-10 minutes	50 - 100 <i>micrograms/kg</i> Followed by IV infusion			Respiratory depression	10mg/10mL ampoules Administer undiluted	
Naloxone	Reversal of opioid induced respiratory depression	IV injection	10 <i>microgram/kg</i>	Every 2-3 minutes as necessary	100 <i>microgram/kg</i>	Monitor for recurrence, repeat dose may be required	400 <i>microgram</i> /mL ampoule Administer undiluted	IM preferred in neonates with respiration depressed by maternal opioids - for a prolonged effect given within 4 hours of delivery
		IM injection	200 <i>micrograms</i>					

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Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Omeprazole	Gastro-oesophageal reflux disease	Oral	700 micrograms/kg	Once daily Increased if necessary, after 7-14 days to 1.4 – 2.8 mg/kg once daily	3mg/kg/day	May increase the risk of GI infections Reported cases of subacute cutaneous lupus erythematosus (SCLE)	10mg tablets (Losec MUPS®) - may be dispersed in water (do not crush the tablet) for oral administration. Halve tablet before dispersing for doses under 5mg Disperse 10mg tablet in 10mL of sterile water Disperse 5mg tablet in 5mL of sterile water	On discharge – supply with oral suspension ONLY if NG tube still in situ
Oxybuprocaine	Pain relief during ROP screening	Ocular	1 drop 60 seconds pre-procedure, to be repeated at 90 second intervals up to a maximum of 3 drops				0.4% Minims	
Pancuronium	Neuromuscular blockade for assisted ventilation	Slow IV injection over 3-5 mins	100 microgram/kg initially Followed by 50 microgram/kg repeated as necessary			Tachycardia, hypotension, prolonged neuromuscular block, anaphylactic reactions, injection site histaminergic reactions (rare)	4mg/2mL injection Administer undiluted, or diluted in glucose 5% or sodium chloride 0.9% to aid administration	Onset of action 4-5mins Duration of action 45-60mins

Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Paracetamol	Pain relief LOADING DOSE	Oral	<u>Neonate >28 weeks CGA</u> 20mg/kg as a single dose		<u>Neonate 28-32 weeks CGA</u> Maximum 30mg/kg daily in divided doses <u>Neonate >32 weeks CGA</u> Maximum 60mg/kg daily in divided doses	Overdose causes liver damage	120mg/5mL suspension 30mg, 60mg suppositories	Note that oral doses and rectal doses are different and cannot therefore be prescribed or given interchangeably
		Per rectum	<u>Neonate 28-32 weeks CGA</u> 20mg/kg as a single dose <u>Neonate >32 weeks CGA</u> 30mg/kg as a single dose					
	Pain relief MAINTENANCE DOSE	Oral	<u>Neonate 28 – 32 weeks CGA</u> 10-15mg/kg every 8 to 12 hours as needed <u>Neonate >32 weeks CGA</u> 10-15mg/kg every 6 to 8 hours as needed <u>Child 1-2 months</u> 30-60mg every 8 hours as necessary					
		Per rectum	<u>Neonate 28-32 weeks CGA</u> 10-15mg/kg every 12 hours as needed <u>Neonate >32 weeks CGA</u> 15-20mg/kg every 8 hours as needed <u>Child 1-2 months</u> 30–60 mg every 8 hours as necessary					
	PDA closure (off label)	IV Infusion over 15mins	15mg/kg QDS for a maximum of 3 days Course can be repeated after reassessment of liver function			Review liver function daily	500mg in 50mL vial	Only to be used following tertiary centre advice
Paraldehyde	Seizure	Per rectum	0.8mL/kg	As a single dose		Do not use if the solution has a brownish colour or smells of acetic acid	50:50 enema solution of paraldehyde in olive oil	Administer using glass syringe and quill, plastic can be used if giving immediately

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Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments	
Phenobarbital	Status epilepticus LOADING DOSE	Slow IV injection	20mg/kg as a single dose		If ineffective after 20 minutes, up to 2 additional half loading doses of 10mg/kg may be administered only if ventilated	Multiple interactions – monitor TDM drugs closely	60mg/mL ampoule Dilute to a maximum concentration of 20mg/mL with water for injection* Max administration rate 1mg/kg/min Contains propylene glycol	Phenobarbital levels (trough) to be taken if dose is greater than 5mg/kg/day or if clinically indicated for prolonged courses	
	Status epilepticus MAINTENANCE DOSE	Slow IV injection	2.5 - 5mg/kg	Once daily <u>To start 12 hours after loading dose</u>	Adjust by 2mg/kg/day according to response, to a maximum of 10mg/kg/day		15mg tablets may be crushed and dissolved if 50mg/5mL alcohol free liquid is unavailable	** Ordered and stored as a CD **	
		Oral							
		Neonatal abstinence syndrome – 2 nd line or polydrug abuse LOADING DOSE	Oral	As per Neonatal Abstinence Guideline		Increase by 10% or 1mg until symptom free, to max dose 4mg/kg BD	See Neonatal Abstinence Guidelines for dosing and weaning information Should wean by 10% or 1mg every 24 hours	15mg tablets may be crushed and dissolved if 50mg/5mL alcohol free liquid is unavailable	
		Neonatal abstinence syndrome – 2 nd line or polydrug abuse MAINTENANCE DOSE		As per Neonatal Abstinence Guideline					

Phenylephrine	Preparation for Retinopathy of Prematurity (ROP) screening	Ocular	1 drop 60-90 minutes pre-procedure	Non-caucasian babies may require a second dose to dilate the pupil fully		2.5% Minims	To be used in conjunction with cyclopentolate 0.5% eye drops
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Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Phenytoin	Status epilepticus and epilepsy LOADING DOSE	Slow IV injection	20mg/kg	Single dose			250mg/5mL ampoule	
	Status epilepticus and epilepsy MAINTENANCE DOSE	Slow IV injection	2.5-5mg/kg	Twice daily	7.5mg/kg twice daily	For intravenous injection, give into a large vein at rate not exceeding 1 mg/kg/minute.	IV infusion (preferred method) Dilute and give through an in-line filter (0.22-0.5micron) using an infusion pump. Max rate 1mg/kg/minute.	**Rapid administration of phenytoin causes arrhythmias, atrial conduction depression and cardiac arrest**
		Oral				Before and after administration flush intravenous line with Sodium Chloride 0.9% For IV use – BP and ECG monitoring is required	IV injection or infusion (undiluted) Give slowly at a rate not exceeding 1mg/kg/minute using an infusion pump Loading doses of up to 1g must be given over at least 20 minutes Complete the infusion within one hour of preparation.	
Phosphate (sodium dihydrogen phosphate oral solution)	Hypo-phosphataemia	Oral	0.5mmol/kg	Twice daily			1mmol/mL oral solution	Do not give at the same time as iron - leave 2-hour gap
		IV infusion	1mmol/kg/day		Increase according to serum phosphate and/or ALP levels (discuss with consultant)	Hypocalcaemia Low BP	Sodium glycerophosphate (21.6%) solution for infusion – contains 1mmol of phosphate per 1mL Peripheral administration: Dilute to 0.05mmol phosphate in 1mL using sodium chloride 0.9% or glucose 5% Rate should not exceed 0.05mmol/kg/hour	Note high sodium content (2mmol per 1mL)

Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Potassium chloride	Hypokalaemia	IV infusion	1mmol/kg/day		Titrate according to serum potassium	***CAUTION*** Potassium overdose can be fatal. Ensure solutions are thoroughly mixed before administration	15% injection (controlled drug) added to daily fluids – 2 mmol/mL	
		Oral	0.5mmol/kg	QDS			1mmol/mL (Kay-Cee-L) syrup	
Propranolol	Arrhythmias	IV injection over 5 to 10 minutes	25-50 micrograms/kg	6 to 8 hourly		ECG required during administration – excessive bradycardia may occur	1mg/1mL ampoule Decomposes rapidly at alkali pH; do not infuse with other medicines May be diluted with Sodium Chloride 0.9% or Glucose 5%	Incompatible with bicarbonate Max IV rate 1mg/minute
		Oral	250-500 micrograms/kg	6 to 8 hourly	2mg/kg three times a day	Bradycardia, cold peripheries, dyspnoea	50mg/5mL oral solution (<i>Thames brand only</i>)	
Pyridoxine	Pyridoxine-dependent seizures LOADING DOSE	IV injection over 5 minutes	100mg	Once daily for 7 days		Can cause hypotonia, high doses may be neurotoxic	50mg/1mL ampoules	
		Oral	200mg					
	Pyridoxine-dependent seizures MAINTENANCE DOSE	Oral	50-100mg	Once daily			Injection can be given orally or tablets may be dispersed in sterile water	

*Always check product leaflet for reconstitution information

Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Salbutamol	Hyperkalaemia	IV injection over 5 to 10 minutes	4 microgram/kg			Arrhythmias, tachycardia, hyperglycaemia, hypertension	5mg/5mL ampoule Dilute to 50micrograms/mL using glucose 5% or sodium chloride 0.9%	Not kept on NNU: request from pharmacist
		Nebulised	2.5-5mg as a single dose, repeated as necessary				2.5mg/2.5mL nebules	
Sildenafil	Pulmonary hypertension	Oral	As guided by tertiary centre			Nausea, diarrhoea, fluid retention. Vasodilation can cause hypo- or hypertension	20mg tabs may be crushed and dispersed Liquid 10mg/ 1mL available	High dose long term use should be used caution – increased mortality
Sodium bicarbonate	Correction of acidosis	See infusions guide for full details						
Sodium chloride	Supplementation	IV infusion	2 – 4 mmol/kg/day		Titrate according to serum electrolytes	Due to extreme osmolarity extravasation of sodium chloride solutions with a concentration of 1.8% or more may cause tissue damage	30% injection (5mmol/mL) added to daily fluids (to max concentration 0.9%)	The following formula can be used if <i>replacement therapy</i> is required: (138-serum Na) x 0.3 x weight
		Oral	1 – 2 mmol/kg/day				5mmol/mL preservative free oral solution	

Spironolactone	Fluid retention Cardiac failure Patent Ductus Arteriosus – use with furosemide or thiazide diuretic	Oral	0.5 – 1mg/kg	Twice daily	7mg/kg per day	Hyperkalaemia Hyponatraemia	50mg/5mL suspension	Stop if no benefit after 48-72hrs
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Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Sucrose	Procedural pain	Oral	0.2mL	2mins prior to procedure Repeat every 2 minutes as necessary	<u>Neonate <37 weeks</u> 1mL per procedure <u>Neonate >37 weeks</u> 2mL per procedure	May cause temporary increase in "Neurobiologic Risk" score (more common in infants <32 weeks CGA)	24% solution Apply onto the tongue one drop at a time using an oral syringe Alternatively administer using a non-nutritive sucking device (one dip estimated to be 0.2mL) Single use only	Avoid in patients who are: intolerant to fructose or sucrose; paralysed; hyperglycaemic; born to diabetic mothers; have suspected or confirmed necrotising enterocolitis; or babies of opiate dependant mothers
Suxamethonium	Intubation pre-medication LISA	IV injection	See intubation or LISA guideline					
Sytron® (Sodium ferredetate)	Iron supplementation in babies	Oral	1mL	Once daily Start on day 28 of life continue until 12 months post estimated due date		Gastrointestinal upset, constipation	207.5mg in 5mL (contains 5.5mg/mL elemental iron) Not to be given within 2 hours of sodium dihydrogen phosphate	Prescribe in conjunction with vitamin supplementation appendix in the 'Enteral feeding guideline'

	Iron-deficiency anaemia		Up to 2.5mL twice daily Smaller doses to be used initially					Prescribe generically as 'sodium feredetate' on drug chart
Tetracosactide (Synacthen®; ACTH)	Stimulation test	IV injection over 2 minutes or IM injection	62.5 micrograms or as directed by tertiary centre	As a single dose		Avoid in active infection Discontinue steroids at least 12hours prior to stimulation test	250 micrograms/mL injection (administer undiluted) Do not use 1mg/mL depot injection)	Collect blood samples immediately before administration, at 30mins and 60mins after administration OR as directed by tertiary centre

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Drug	Indications	Route	Single Dose	Frequency	Recommended maximum	Side Effects and Precautions	Preparation	Comments
Ursodeoxycholic acid	Cholestasis Biliary Cirrhosis	Oral	5mg/kg	TDS	10mg/kg TDS (for PN associated cholestasis)	Rarely exacerbates hepatic cirrhosis	250mg/mL suspension	To be started on the advice of tertiary centre only
Vecuronium	Neuromuscular blockade for assisted ventilation	Slow IV injection	80 - 100 micrograms/kg Followed by 20-30micrograms/kg repeated as required OR by IV infusion (see infusions guide)			Hypotension, bronchospasm, tachycardia, hypersensitivity. Effects may accumulate with infusion in neonates	10mg powder for solution for injection IV injection Reconstitute with either 5mL or 10mL of water for injection	Onset of action: 19-120 seconds Duration of action: 30-40 minutes
Vitamin K (phyto-menadione)	PREVENTION of Vitamin K deficiency bleeding (previously termed haemorrhagic disease of the newborn)	IM injection	<36 weeks CGA 0.4mg/kg (MAX 1mg)	Once at birth	Risk of vascular collapse with rapid IV administration Increased risk of kernicterus with IV administration to premature neonate or where body weight <2.5kg	Konakion MM paediatric (2mg in 0.2ml) for oral, IV or IM administration Use the silicon free syringes provided only for oral administration May be diluted to a convenient volume in glucose 5% if		Consider IV for babies <30 weeks CGA
		Slow IV injection over 5-10 minutes	>36 weeks CGA 1mg	Once at birth Subsequent oral (or IV) doses will be required, at one week and at 4-6 weeks				
		Oral	2mg		Oral not			

		(at parents' request)		Once at birth AND once at 4-7 days AND once at 4 weeks <u>ONLY IF</u> breast fed or mixed feeding	recommended in babies <36 weeks CGA		necessary for IV injection	
	TREATMENT of Vitamin K deficiency bleeding	IV injection	1mg	Every 8 hours				
	Neonatal Biliary Atresia	Oral	1mg	Once daily	Oral not recommended in babies <36 weeks CGA	Monitor INR		To be started on the advice of tertiary centre only

*Always check product leaflet for reconstitution information

References:

1. Paediatric Formulary Committee (PFC) (2025) *British National Formulary for Children*. London: BMJ Group and Pharmaceutical Press. Available at: <https://www.medicinescomplete.com/#/browse/bnfc> (Accessed: 25 November 2025).
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Full version control record

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Guidelines Lead(s):	Dr Angela Yannoulis, Consultant Paediatrician
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This guideline has been registered with the Trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt, contact a senior colleague or expert. Caution is advised when using guidelines after the review date.

This guideline is for use in Frimley Health NHS Foundation Trust hospitals only. Any use outside this location will not be supported by the Trust and will be at the risk of the individual using it.

Version History

Version	Date	Guideline Lead(s)	Status	Comment
1.0	June 2021	Dr. Angela Yannoulis, Consultant Paediatrician Dr. Sanjay Jaiswal, Consultant Paediatrician Ruhena Ahmad, Ruth Botting, Barbara Joules & Deirdre Kriel, Women and Children Pharmacists Shakeela Banno, Neonatal Ward Manager Jennifer Lomas, Neonatal Ward Manager	Final	Cross-site Paediatric Clinical Governance (20/05/2021)

2	28/11/25	Dr. Angela Yannoulis, Consultant Paediatrician Rashmi Selli Principal Pharmacist Women's and Children Dr. Sanjay Jaiswal, Consultant Paediatrician Ruhena Ahmad, Ruth Botting, Barbara Joules & Deirdre Kriel, Women's and Children Pharmacists Shakeela Banno, Neonatal Ward Manager Jennifer Lomas, Neonatal Ward Manager	Final	Coss- site Paediatric Clinical Governance (21/01/26) & Drugs and Therapeutics Committee Feb 2026
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Related Documents

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