

Specials and expensive liquids guideline

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This guideline contains a list of commonly prescribed medicines and alternative methods of administration for patients with swallowing difficulties, feeding tubes or for patients prescribed unlicensed 'specials' medication. Each entry takes into account alternative medicines, formulations, cost and licensing. This list is not exhaustive and will be reviewed and updated accordingly.

Equality Statement

Derby and Derbyshire Clinical Commissioning Group's aim is to design and implement guidelines and policies that meet the diverse needs of the populations to be served and the NHS workforce has a duty to have regard to the need to reduce health inequalities in access to health services and health outcomes achieved as enshrined in the Health and Social Care Act 2012. Derby and Derbyshire CCG is committed to ensuring equality of access and non-discrimination, irrespective of age, gender, disability (including learning disability), gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex (gender) or sexual orientation. It takes into account current UK legislative requirements, including the Equality Act 2010 and the Human Rights Act 1998, and promotes equality of opportunity for all. This document has been designed to ensure that no-one receives less favourable treatment owing to their personal circumstances.

Due Regard

In carrying out its functions, the Derbyshire Joint Area Prescribing Committee on behalf of Derby and Derbyshire CCG is committed to having due regard to the Public Sector Equality Duty. This applies to all the activities for which the CCG is responsible, including guideline and policy development and review.

PLEASE NOTE: This document is subject to clinical interpretation and judgement on an individual basis and the specific needs and best interests of the individual patient should be taken into account. Manipulation of a licensed product will be outside of the product's marketing authorisation. However, there is evidence and clinical experience detailed in reputable sources (e.g. NEWT) confirming that formulation manipulation of this nature can take place without compromising the effectiveness of the medicine.

Administration notes:

Crushing tablets: Crush tablets using a suitable device (e.g. tablet crusher, pestle and mortar or between two metal spoons) and transfer into a medicine cup/pot. Mix well with 15–30ml water and administer to the patient. Rinse the device with water and administer this also.

Opening capsules: Gently ease open the capsule to release its contents into a medicine cup/pot. Mix with 15–30ml water and administer to the patient. Rinse the medicine cup/pot with water and administer this also.

Dispensing or crushing tablets or opening capsules should never be used to administer a fraction of a dose. Manipulation of solid dosage forms in this way for covert administration may be done in exceptional circumstances following agreement by the multidisciplinary team and taking mental capacity into consideration. It should be authorised in writing by the GP. Some formulations should not usually be crushed and this has been taken into account in the advice outlined below.

Prescription writing and labelling advice:

The Medicines Act 1968 stipulates that medicines intended for use by humans are subject to a product license. The act also requires that prescription medications be given only in accordance with the directions of an appropriate practitioner who has prescribing authority.

Crushing tablets or opening capsules contrary to the prescribing practitioner would be in breach of the Medicines Act 1968. Therefore, prescribers should explicitly state in the directions how the medication is to be manipulated.

E.g. Take ONE tablet, crushed and dispersed in water, three times a day

These directions should be transposed on to the dispensing label so that the directions are available to the patient or carer.

NB: Manipulating medicines in this way will, more often than not, render them 'off-label', so the patient should be made aware of this. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

Unlicensed medicines listed in part VIIB of the drug tariff:

All unlicensed medicines in part VIIB of Drug Tariff (<https://www.nhsbsa.nhs.uk/sites/default/files/2019-04/Drug%20Tariff%20May%202019.pdf>) are listed with a minimum quantity and corresponding price, which is payable for any amount prescribed up to the minimum quantity. Unless in a special container, subsequent quantities will be payable at the additional price per ml/g/tab/cap up to the total quantity prescribed. It is usually cheaper to order the total volume in one container rather than in smaller containers e.g. 200ml rather than 2 x 100ml. Almost invariably these products will cost significantly more than the licensed alternative.

Drug	Alternatives available
Acetazolamide	<p>The standard tablets disperse with a fine sediment. They disperse in one to five minutes. Rinse equipment well to ensure the whole dose is given.¹</p> <p>The MR capsules are generally not considered suitable for use, although some centres have opened them and flushed the contents down enteral feeding tubes¹ - seek further specialist advice.</p> <p>UNLICENSED 250mg/5ml oral suspension included in Part VIIB of Drug Tariff Minimum quantity 100ml</p>
Acetylcysteine	<p>LICENSED 600mg effervescent tablets available but expensive if prescribed generically (£89.50 per 30 DT Dec 18). Check being used as per formulary and prescribed by brand name NACSYS. (£5.50 per 30 Dec 18).</p> <p>Note that 600mg capsules are also available and in drug tariff, but are not licensed.</p> <p>LICENSED 200mg oral powder sachets available, but very expensive.</p> <p>Effervescent tablets are preferred choice for enteral feeding tubes. Stop the feed prior to administration and restart afterwards.¹</p>
Aciclovir	<p>Use dispersible tablets (available as 200mg, 400mg and 800mg)</p> <p>LICENSED suspension is available as 200mg/5ml and 400mg/5ml but is expensive (e.g. 400mg/5ml - £39.47 for 100ml)</p>

Alendronic Acid	<p>Assess clinical need - consider withholding if swallowing difficulty/feeding tube is temporary.</p> <p>Do not crush the tablets, risk of oesophageal damage¹</p> <p>Alendronic acid 70mg effervescent tablets sugar free (LICENSED)</p> <p>Alendronic acid 70mg/100mL oral solution unit dose sugar free (LICENSED, LESS COST-EFFECTIVE).</p> <p>No info on using effervescent tablets or liquid for enteral feeding tubes. Preferred option is to switch to parenteral bisphosphonate.¹</p>
Allopurinol	<p>The tablets can be crushed and mixed with water for administration. The 100mg tablets will disperse within one minute without crushing. The 300mg tablets take longer to disperse and so should be crushed before dispersing in water. They should be crushed well as the drug is not very soluble. Give immediately.¹</p> <p>UNLICENSED 100mg/5mL or 300mg/5mL oral suspension included in Part VIIIB of Drug Tariff. Minimum quantity 100ml</p>
Amantadine HCl	<p>The capsules can be opened and the contents mixed with water for administration. The drug is very soluble.¹</p> <p>LICENSED Amantadine 50mg/5ml oral solution sugar free is available but is expensive</p>
Amiloride	<p>The tablets can be crushed and dispersed in water for administration. Different brands of amiloride tablets may disperse in water at notably different rates.¹</p> <p>LICENSED sugar-free 5mg/5ml oral solution available (£42.33 for 150ml)</p>
Amiodarone	<p>The tablets can be crushed and mixed with water for administration. Without crushing they disperse in around five minutes. Give immediately. The crushed tablets have a bitter taste, for swallowing difficulties they can be mixed with fruit juice if desired.¹</p> <p>UNLICENSED 50mg/5ml and 100mg/5ml oral suspension included in Part VIIIB of Drug Tariff. 100mg/5ml more cost effective (DT Dec18). Minimum quantity 100ml</p>
Amitriptyline Hydrochloride	<p>The tablets can be crushed and dispersed in water.</p> <p>For administration by enteral tubes they should be crushed well as the film-coating may block enteral feeding tubes if it is not broken up properly¹</p> <p>LICENSED Amitriptyline sugar free oral solution 25mg/5mL and 50mg/5mL is available but expensive. LICENSED 10mg/5ml sugar free oral solution is very expensive (£131.90 for 150ml – Drug tariff May 19) Shelf life is 28 days once opened.</p> <p>Absorption may be decreased by high-fibre feeds. If administered directly into the jejunum (i.e. through an NJ, PEJ, or PEGJ tube), monitor for increased systemic effects.¹</p>

Amlodipine	<p>Most tablet brands will disperse in water easily. They disperse in one to five minutes. Give immediately as the drug is light sensitive.¹</p> <p>LICENSED oral solution available, but very expensive. (5mg/5ml and 10mg/5ml, sugar free - 1 month expiry once opened, store in fridge)</p> <p>No other calcium channel blocker has a licensed liquid or dispersible tablet option.</p> <p>Administration via enteral feeding tube – Use an oral solution which is licensed for enteral tube administration. Flush the feeding tube after the dose with 20mL of water.¹ Contact practice pharmacist if administering via NJ or PEJ (see NEWT guidelines).</p>
Apixaban	<p>No licensed liquid available</p> <p>The SPC for Eliquis tablets states that the tablets may be crushed and suspended in water or apple juice or mixed with apple puree and immediately administered orally. Alternatively, Eliquis tablets may be crushed and suspended in 60 mL of water and immediately delivered through a nasogastric tube.</p> <p>Crushed Eliquis tablets are stable in water, apple juice, and apple puree for up to 4 hours.</p> <p>Licensed for administration through nasogastric tubes – administration through other types of enteral feeding tube would be outside the product license. Take care to ensure the whole dose is administered, and flush well after each dose.¹</p>
Aripiprazole	<p>Orodispersible tablets are available and most cost-effective option</p> <p>Aripiprazole 1mg/mL solution is available (LICENSED, HIGH COST)</p>
Atenolol	<p>The tablets can be crushed and mixed with water for administration.</p> <p>For administration via enteral tube, crush the tablets well to break up the film-coating in order to prevent tube blockage. Atenolol is absorbed in the jejunum and so should have a good clinical effect following jejunal administration. Some sources recommend that only the crushed tablets should be used for patients with enteral feeding tubes terminating in the jejunum.¹</p> <p>Licensed atenolol 25mg/5mL oral solution sugar free is also available but more expensive. Shelf life is 28 days once opened</p>
Azathioprine	<p>Cytotoxic drug DO NOT CRUSH tablets. Tablets have a film coating that prevents exposure to the cytotoxic medicine inside¹</p> <p>UNLICENSED 50mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec 18) Minimum quantity 100ml Shelf life is 28 days once opened.</p> <p>Note that 20mg/5ml, 25mg/5ml & 100mg/5ml also in tariff, but are more expensive than the 50mg/5ml.</p> <p>NB: Carers handling the suspension should wear gloves in case of contact with the medication</p>
Baclofen	<p>Baclofen 5mg/5mL oral solution sugar free (LICENSED). Shelf life is 28 days once opened.</p>

Bendroflumethiazide	<p>Crush tablets and mix with water or disperse in water (disperse readily in 1-5mins).¹</p> <p>UNLICENSED 2.5mg/5ml oral suspension included in Part VIII B of Drug Tariff. Minimum quantity 150ml. Shelf life is 28 days once open.</p>
Betahistine Hydrochloride	<p>Crush tablets and mix with water.¹</p> <p>UNLICENSED 8mg/5ml oral suspension included in Part VIII B of Drug Tariff. Minimum quantity 200ml</p>
Bisoprolol	<p>Consider switching to atenolol 25mg/5ml oral solution sugar free (LICENSED, LOW COST)</p> <p>The tablets can be crushed and mixed with water for administration. The drug is very soluble¹</p> <p>UNLICENSED 2.5mg/5ml oral solution included in Part VIII B of Drug Tariff. Minimum quantity 150ml. Note that other strengths also in tariff, but 2.5mg/5ml oral solution is most cost effective option (DT Jan18).</p>
Bumetanide	<p>Tablets can be crushed and mixed with water.¹</p> <p>If liquid is needed LICENSED furosemide is more cost-effective than bumetanide liquid (50mg/5ml costs £20.21 for 150ml)</p> <p>LICENSED bumetanide sugar-free oral solution (1mg/5ml) available but extremely expensive (£198 for 150ml – May 19 DT).</p>
Candesartan Cilexetil	<p>The tablets can be crushed and mixed with water for administration. Without crushing they disperse in around five minutes.¹</p> <p>No information on use with feeding tubes.</p>
Captopril	<p>The tablets will disperse in water in one to five minutes.¹</p> <p>NB. For enteral tubes: A fine powder sediment may be left, so flush well after each dose.¹</p> <p>LICENSED liquid available, but expensive (5mg/5ml and 25mg/5ml, Noyada®, Martindale - Expires 21 days after opening 100ml pack size)</p>
Carbamazepine	<p>If used as epilepsy treatment, a product change poses a risk of fits: https://www.gov.uk/drug-safety-update/antiepileptic-drugs-new-advice-on-switching-between-different-manufacturers-products-for-a-particular-drug</p> <p>Carbamazepine 100mg/5mL oral suspension sugar free (LICENSED)</p> <p>NB. For enteral tubes, dilute with an equal volume of water before administration to prevent adsorption to the feeding tube</p> <p>Note: Carbamazepine MR tablet 400mg twice daily is equivalent to Carbamazepine liquid 200mg four times a day.¹</p> <p>Carbamazepine 125mg or 250mg suppositories (LICENSED, HIGH COST)</p> <p>Note: Carbamazepine 100mg tablet or liquid is equivalent to one carbamazepine 125mg suppository.¹</p>
Carbimazole	<p>Crush tablets and mix with water.¹</p> <p>UNLICENSED 10mg/5ml oral suspension included in Part VIII B of Drug Tariff. Minimum quantity 150ml</p>

Carbocisteine	<p>Consider acetylcysteine (NACSYS) as an alternative (see separate entry)</p> <p>Licensed carbocisteine 750mg/10ml oral solution sachets S/F are more cost-effective than oral solution.</p> <p>Licensed carbocisteine 250mg/5ml oral solution S/F is also available but more expensive</p>
Carvedilol	<p>Consider switching to LICENSED atenolol 25mg/5ml oral solution sugar free</p> <p>Crush tablets and mix with water. Give immediately¹</p> <p>If administered directly into the jejunum (i.e. through an NJ, PEJ, or PEGJ tube), monitor for increased systemic effects¹</p> <p>UNLICENSED 5mg/5ml oral suspension included in Part VIII B of Drug Tariff. Minimum quantity 100ml. No information available on giving the unlicensed suspension via enteral tube.</p>
Chloral hydrate	<p>UNLICENSED 500mg/5ml oral solution included in Part VIII B of Drug Tariff. Minimum quantity 100ml (£18.83/100ml DT May 19)</p> <p>LICENSED preparations available (143.3mg/5ml oral solution BP, 150ml = £244.25 DT May 19)</p> <p>For enteral feeds: Use the elixir. It is light sensitive, so give immediately.¹</p>
Chlorothiazide	<p>Crush or disperse tablets in water. They disperse in less than a minute.¹</p> <p>UNLICENSED 250mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18) Minimum quantity 50ml</p> <p>Note that 150mg/5ml oral suspension also in tariff, but 250mg/5ml oral suspension is most cost effective option.</p>
Chlorpromazine	<p>Tablets should not be crushed – may cause contact sensitisation.</p> <p>LICENSED oral solution available (25mg/5ml and 100mg/5ml - 6 month expiry once opened. Note that Pinewood Healthcare also make a 25mg/5ml sugar-free solution, but it only has a 1 month expiry once opened.)</p> <p>Chlorpromazine has been reported as being incompatible with some enteral feeds, so ensure enteral feeding tubes are flushed well before and after each dose.¹</p>
Citalopram Hydrobromide	<p>LICENSED oral drops available.</p> <p>Note that 8 drops (16mg) is equivalent to 20mg tablet dose and 16 (32mg) drops is equivalent to 40mg tablet dose.</p> <p>The tablets have been crushed and dispersed in water if the drops are unavailable, but they may taste unpleasant. If giving via enteral feeding tube, flush well following administration.¹</p>

Clindamycin	<p>Where clinically appropriate, change to an alternative antibiotic available as a liquid or dispersible tablet.</p> <p>Open the capsules and disperse in water immediately prior to administration. Avoid inhalation of capsule contents.¹</p> <p>The capsule contents taste extremely unpleasant and may be unpalatable for oral administration in patients with swallowing difficulties. The capsule contents can be mixed with grape juice or maple syrup.¹</p> <p>UNLICENSED 75mg/5ml oral suspension included in Part VIII B of Drug Tariff Minimum quantity 100ml</p>
Clobazam	<p>Prescribe for epilepsy treatment only. A product change poses a risk of fits: https://www.gov.uk/drug-safety-update/antiepileptic-drugs-new-advice-on-switching-between-different-manufacturers-products-for-a-particular-drug</p> <p>LICENSED 10mg/5ml oral suspension S/F available - Expires 28 days after opening (LICENSED 5mg/5ml oral suspension S/F is also available but is less cost-effective)</p>
Clonazepam	<p>If used as epilepsy treatment, a product change poses a risk of fits: https://www.gov.uk/drug-safety-update/antiepileptic-drugs-new-advice-on-switching-between-different-manufacturers-products-for-a-particular-drug</p> <p>LICENSED liquids available (500micrograms/5ml and 2mg/5ml, Clonazepam Rosemont - expires 1 month after opening)</p> <p>For administration via NG / PEG tubes: Use the oral solution which is licensed for administration via enteral feeding tubes (non-PVC tubes only). The tube should be flushed well with three separate flushes of at least 5mL water each, as the solution is oily and can adsorb to the inside of the feeding tube.¹</p> <p>For NJ or PEJ feeding contact practice pharmacist (see NEWT guidelines).</p>
Clonidine	<p>LICENSED 50micrograms/5ml sugar free oral solution available - expires 30 days after opening.</p> <p>The tablets have been crushed by some centres, but there is little information on this.¹</p>
Clopidogrel	<p>The tablets can be crushed and dispersed in water. Most brands disperse in one to five minutes without crushing, however some take longer.¹</p> <p>UNLICENSED 75mg/5ml oral solution included in Part VIII B of Drug Tariff. Minimum quantity 150ml</p> <p>Note that 1mg/ml & 75mg/5ml oral suspension are in tariff, but 75mg/5ml oral solution is more cost effective.</p> <p>No information about using the solution or the suspension via enteral feeding tubes has been located.¹</p>

<p>Co-Beneldopa (Benserazide/Levodopa)</p>	<p>Do not open modified release (MR) or immediate release (IR) capsules.</p> <p>Co-beneldopa 12.5mg/50mg or 25mg/100mg dispersible tablets (LICENSED) Note: dispersible tablets have a faster onset of action and shorter duration of action than MR capsules and a direct substitution cannot occur. Seek advice from specialist.¹</p> <p>If changing from IR capsules to dispersible tablets a direct changeover is acceptable, but the patient should be monitored for any change in effect as there may be an altered bioavailability. It may be appropriate to prescribe a small 'when-required' dose to cover any unexpected 'on-off' effects.¹</p> <p>For enteral feeds: To reduce fluctuations in effect, doses should be given at the same time each day in relation to the feed regimen, and patients should be monitored closely if enteral feed formulations are altered. Levodopa is mainly absorbed in the jejunum. Drug effect may be particularly unpredictable in patients with enteral tubes terminating in the jejunum.¹</p>
<p>Co-Careldopa (Carbidopa/Levodopa)</p>	<p>Consider switching to LICENSED Co-beneldopa - capsules/dispersible tablets. (Dose conversion table available in NEWT Guidelines).</p> <p>Crush co-careldopa tablets and disperse in water and give immediately.¹ (Info only available for Sinemet brand).</p> <p>Do NOT crush MR tablets.¹</p> <p>UNLICENSED 25mg/100mg/5ml oral suspension included in Part VIII B of Drug Tariff. Minimum quantity 100ml</p> <p>Note that 12.5mg/50mg/5ml oral suspension also in tariff, but 25mg/100mg/5ml strength is more cost effective.</p>
<p>Codeine Phosphate</p>	<p>Codeine 15mg/5mL linctus sugar free or Codeine 25mg/5ml oral solution (LICENSED)</p>
<p>Co-Dydramol (Dihydrocodeine/Paracetamol)</p>	<p>Consider switching to co-codamol effervescent tablets or paracetamol (available as soluble tablets, suspension and suppositories)</p> <p>UNLICENSED 10mg/500mg/5ml oral suspension included in Part VIII B of Drug Tariff. Minimum quantity 150ml</p> <p>No information about using via enteral feeding tubes¹</p>
<p>Cyanocobalamin</p>	<p>Consider hydroxocobalamin intramuscularly</p> <p>Consider increasing dietary intake of vitamin B12</p>
<p>Cyclizine Hydrochloride</p>	<p>Consider switching to alternative anti-emetic: promethazine, metoclopramide or domperidone (available as LICENSED liquids)</p> <p>Crush tablets and disperse in water. Protect from light. The crushed tablets have a bitter taste.¹</p> <p>UNLICENSED Cyclizine 50mg/5mL oral suspension included in part VIII B of drug tariff. Minimum quantity 100ml. Shelf life is 30 days once opened.</p>
<p>Dabigatran</p>	<p>Do not open the capsules as this may greatly affect the oral bioavailability of the drug, with a risk of increased side effects (i.e. bleeding).</p> <p>Consider switch to alternative NOAC – apixaban or rivaroxaban. See separate entries.</p>

Dexamethasone	<p>LICENSED liquid available, various strengths and manufacturers. Expiry once opened 1 to 3 months depending on manufacturer.</p> <p>LICENSED soluble tablets also available.</p> <p>It may be preferable to use soluble tablets rather than the liquid for intrajejunal administration.¹</p> <p>The tablets have been crushed and mixed with water for administration. They should be crushed with care to avoid inhalation of dust by the carer¹</p>
Diazepam	<p>LICENSED preparations available (liquid and rectal tubes).</p> <p>For enteral administration: Use the syrup or the oral solution, and dilute with water before administration to reduce viscosity and tube binding.¹</p>
Diclofenac Sodium	<p>Diclofenac treatment should only be initiated after careful consideration for patients with significant risk factors for cardiovascular events (https://www.gov.uk/drug-safety-update/non-steroidal-anti-inflammatory-drugs-nsaids-cardiovascular-risks - MHRA, June 2013)</p> <p>If NSAID is required, consider ibuprofen or naproxen (see individual entries)</p> <p>Diclofenac suppositories (LICENSED)</p> <p>UNLICENSED diclofenac 50mg/5ml oral suspension included in part VIII B of drug tariff. Minimum quantity 150ml</p>
Digoxin	<p>Crush tablets and mix with water.¹</p> <p>LICENSED digoxin 50micrograms/mL oral solution. Note: one 62.5microgram tablet is equivalent to 50mcg oral solution</p>
Dihydrocodeine Tartrate	<p>Do not crush the modified release tablets¹</p> <p>Dihydrocodeine 10mg/5mL oral solution (LICENSED)</p> <p>If administered directly into the jejunum (i.e. through an NJ, PEJ, or PEGJ tube), monitor for increased systemic effects. Dihydrocodeine has a high level of first pass metabolism and such drugs, when administered into the jejunum, can have increased absorption leading to greater clinical effects and adverse effects.¹</p>

Diltiazem Hydrochloride	<p>Diltiazem capsules/tablets should be prescribed by brand as bioavailability differs between preparations.</p> <p>Where clinically appropriate, consider changing to an alternative once daily calcium-channel blocker such as amlodipine.</p> <p>Note that all diltiazem tablets and capsules are labelled modified release, but the 60mg generic preparation is not slow-release and can be crushed.¹ For 60mg tablets: crush and disperse in water - may change pharmacokinetics so if dose increase needed consider QDS dosing.</p> <p>If converting from sustained release (SR), start with 60mg TDS and titrate as dose unlikely to be equivalent due to variation in bioavailability between SR preparations.</p> <p>SR capsules can be opened and the beads mixed with water or soft food (do not crush the capsule contents).¹</p> <p>See NEWT guidelines for more brand specific information with regards to enteral tube administration.</p> <p>UNLICENSED 60mg/5ml oral suspension included in Part VIII B of Drug Tariff. Minimum quantity 100ml</p>
Dipyridamole	<p>The modified-release capsule contents have been mixed with soft food, juice, or water for administration to patients with swallowing difficulties. The capsule contents should not be crushed, therefore this method may not be suitable for patients with limited understanding or impaired ability to follow instructions¹</p> <p>LICENSED dipyridamole 50mg/5ml oral suspension S/F and 200mg/5ml oral suspension S/F is available but a dosage adjustment is required if switching between MR capsules and suspension.¹ Licensed indications are also different between the MR and standard release preparations.</p> <p>Enteral dipyridamole should be given on an empty stomach, so withhold enteral feeds for half an hour before and half an hour after each dose. Seek advice from dietician.¹</p>
Docusate Sodium	<p>Docusate 12.5mg/5mL or 50mg/5mL oral solution sugar free (LICENSED)</p>
Donepezil	<p>The film-coated tablets can be crushed and mixed with water for administration. For oral administration they have a strong, bitter taste.</p> <p>LICENSED orodispersible tablets available (5mg and 10mg tablets)</p> <p>LICENSED oral solution S/F also available (1mg/ml), but much more expensive than orodispersible tablets.</p>

Doxazosin Mesilate	<p>Assess ongoing clinical need and switch to alternative if possible.</p> <p>The standard tablets disperse readily in de-ionised water for administration (e.g. water for injection, water for irrigation). Most disperse within one minute. Do not use tap water, as the chloride ions in the water will cause the drug to precipitate out.¹</p> <p>Do not crush or divide MR tablets.¹</p> <p>UNLICENSED 4mg/5ml oral solution included in Part VIII B of Drug Tariff. Minimum quantity 150ml</p> <p>Note 1mg/5ml oral suspension or solution and 4mg/5ml suspension also in tariff, but are not as cost effective.</p> <p>No information on administering the oral solution via enteral feeding tubes has been located.¹</p>
Doxycycline Hyclate	<p>Do not open the capsules as the contents are an irritant.</p> <p>Doxycycline 100mg dispersible tablets (LICENSED).</p> <p>Note: when given via enteral tubes, doxycycline binds to calcium ions reducing absorption, so prescribe at the higher end of the standard dosage range¹ Withhold enteral feeds for two hours before and one hour after each dose – seek advice from dietician.</p>
Duloxetine	<p>The capsules can be opened and their contents mixed with apple juice or apple sauce. The capsules contain enteric-coated beads which should not be chewed or crushed. The mixture should be given immediately.¹</p> <p>No information on giving duloxetine via enteral feeding tubes has been located.</p>
Edoxaban	<p>The tablets can be crushed and mixed with water or apple sauce for administration¹.</p> <p>For enteral tubes, the tablets can be crushed and mixed with water for administration¹.</p>
Enalapril Maleate	<p>The tablets can be crushed and dispersed in water for administration. Without crushing some brands will disperse in around five minutes.¹ The crushed tablets may have a bitter aftertaste.¹</p> <p>UNLICENSED 5mg/5ml oral <u>solution</u> included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 150ml</p> <p>Note other strengths are also in tariff, but are not as cost effective.</p>
Ergocalciferol	<p>Review prescribing and monitoring of patient in line with the Derbyshire Vitamin D guideline. LICENSED products available - details in guideline.</p> <p>Patients to be advised to purchase OTC for supplementation, prevention or management of insufficiency.</p>
Escitalopram	<p>The tablets can be dispersed in water for administration. They disperse immediately. The crushed / dispersed tablets have an unpleasant taste.¹</p> <p>For enteral tubes flush well as the tablets are poorly soluble.</p> <p>LICENSED 20mg/ml oral drops S/F are available which can be mixed with water, orange juice or apple juice to aid administration</p>

Esomeprazole	<p>Consider switching to lansoprazole orodispersible tablets.</p> <p>The tablets and some brands of capsules can be dispersed in non-carbonated water for administration. They should not be dispersed in any other liquid. The pellets remaining after the tablet disperses / after the capsule is opened should not be crushed.¹</p> <p>LICENSED esomeprazole 10mg gastro-resistant granules sachets for oral suspension are available.</p> <p>For administration via enteral tubes see NEWT guidelines.</p>
Felodipine	<p>Do not crush tablets¹ (Felodipine tablets are MR and should not be crushed).</p> <p>Review indication. Consider switching to amlodipine (see individual entry)</p>
Ferrous Fumarate	<p>Ferrous fumarate 140mg/5mL oral solution (LICENSED). Dilution with water may reduce side effects when ferrous fumarate liquid is given through enteral tubes terminating in the jejunum. Higher doses may be needed when given through enteral tubes terminating in the jejunum. Some iron preparations have been reported as being incompatible with some enteral feeds, so ensure enteral feeding tubes are flushed well before and after each dose.</p>
Ferrous Sulfate	<p>Convert to appropriate dose of ferrous fumarate oral solution. Note: ferrous sulfate 200mg tablets three times a day, is equivalent to 10mL twice daily of ferrous fumarate 140mg/5mL oral solution (LICENSED)</p> <p>LICENSED oral drops available (125mg (25mg iron)/ml, Ironorm®) but more cost effective to switch to ferrous fumarate liquid</p>
Fexofenadine Hydrochloride	<p>Consider switching to alternative antihistamine in liquid form e.g Loratadine 5mg/5ml oral solution (LICENSED)</p> <p>The tablets can be crushed and mixed with water for administration. Without crushing they disperse in around five minutes.¹</p>
Finasteride	<p>Note: women who are, or who may become pregnant should not handle crushed, broken, or dissolved tablets</p> <p>Place the tablet in the barrel of an oral or enteral syringe. Draw water up into the syringe and allow the tablet to disperse (in order to minimise carer contact with the medication).¹</p> <p>For enteral tubes flush well after each dose as the drug is insoluble¹</p>
Flecainide	<p>Disperse tablet in de-ionised water (e.g. water for injection or irrigation) immediately prior to administration.¹</p> <p>Food reduces the rate but not the extent of absorption.</p> <p>NB: May have an anaesthetic effect on the tongue so care should be taken with hot meals after administration.¹</p> <p>If giving via enteral feeding tube, always flush with de-ionised water.¹</p> <p>UNLICENSED 25mg/5ml oral <u>suspension</u> included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 200ml</p> <p>Note that 10mg/5ml oral suspension and 25mg/5ml oral solution also in tariff, but 25mg/5ml oral suspension is more cost effective.</p>

Fludrocortisone Acetate	<p>The tablets will disperse in water. They disperse within one minute¹</p> <p>Flush the feeding tube well after enteral administration.¹</p> <p>UNLICENSED 50micrograms/5ml or 100micrograms/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p>
Fluoxetine	<p>LICENSED liquid and dispersible tablets available.</p> <p>If giving via enteral feeding tube, dilute with the same volume of water.¹</p>
Folic Acid	<p>The tablets have been crushed and mixed with water for administration¹</p> <p>LICENSED Folic acid 2.5mg/5mL oral solution sugar free is available (5mg/5ml is also available but is less cost-effective).</p> <p>The oral solution can be diluted with water to reduce the osmolality if desired when giving into the jejunum, however this is outside the marketing authorisation.¹</p>
Furosemide	<p>Furosemide oral solution S/F 20mg/5mL, 40mg/5mL or 50mg/5mL (LICENSED)</p> <p>There is an oral solution which is licensed for administration via NG and PEG tubes (Frusol®). This brand does not need to be diluted before administration.¹</p>
Gabapentin_Oral Soln 50mg/ml S/F	<p>Open capsules and disperse capsule contents in water, and give immediately. Contents can be sprinkled on food or given in fruit juice to mask their unpleasant taste¹</p> <p>Gabapentin 50mg/mL oral solution sugar free (LICENSED). Shelf life is 28 days once opened.</p> <p>Administration via NG / PEG tubes There are oral solutions licensed for administration via enteral feeding tubes (Colonis & Rosemont refer to SPC). The solution should not be diluted prior to administration, but should be flushed with water after the dose has been given.¹</p> <p>Speak to practice pharmacist if administering via NJ or PEJ. (see NEWT guidelines)</p>
Galantamine	<p>The tablets can be crushed and mixed with water. The drug is quite soluble¹</p> <p>LICENSED 20mg/5ml oral solution S/F is available. It should be diluted in water (or any non-alcoholic drink) before administration¹</p>
Glibenclamide	<p>The tablets can be crushed and mixed with water for administration. Without crushing they disperse in one to five minutes.¹</p> <p>For enteral tubes: Give just before the start of a feed. There is a possibility of reduced absorption when administered directly into the jejunum. Monitor blood glucose.</p>

Gliclazide	<p>For non-MR tablets: Crush the tablets well (as the drug is practically insoluble) and mix with water or orange juice for administration.¹ Do not crush MR tablets¹</p> <p>If giving via enteral tube seek advice from pharmacist.</p> <p>UNLICENSED 80mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18) Minimum quantity 150ml</p> <p>Note 40mg/5ml oral suspension also in tariff, but 80mg/5ml is more cost effective.</p>
Glycopyrronium bromide Hypersalivation	<p>Glycopyrronium is GREY after consultant/specialist initiation: for hypersalivation(sialorrhoea) or drooling after a trial or consideration of hyoscine (oral and patches) for adults and children 3 years and older.</p> <p>Consider switching to hyoscine hydrobromide patches if appropriate.</p> <p>LICENSED glycopyrronium oral solutions available see JAPC traffic light classification. Check SPC for licensed indications. (1mg/5ml, Colonis (expires 1 month after opening) & 2mg/5ml Sialanar (expires 2 months after opening).</p> <p>Sialanar is licensed for use through enteral feeding tubes which should be flushed with 10 ml water immediately after dosing. Absorption of enteral glycopyrronium oral solution can be decreased by concomitant food. Hold enteral feeds for two hours before and one hour after each enteral dose. If the patient does not have a break in their feeding regimen during which glycopyrronium can be given, the Nutrition Team should be contacted to advise on management.¹</p>
Griseofulvin	<p>Review indication and switch to alternative antifungal e.g. terbinafine (see separate entry)</p>
Haloperidol	<p>Haloperidol 10mg/5ml oral solution sugar free (LICENSED)</p> <p>LICENSED Haloperidol 5mg/5ml oral solution sugar free is also available but less cost effective.</p>
Hydrocortisone	<p>The standard-release tablets are insoluble but will disperse in water for administration.¹ They disperse within one minute.</p> <p>Patients on modified-release tablets should be converted to immediate-release preparations, using the same total daily dose, divided and given more frequently. Monitor clinical response.¹</p> <p>2.5mg muco-adhesive buccal tablet available, but only licensed for mouth ulcers (not recommended for replacement therapy).</p> <p>Alkindi hydrocortisone granules in capsules for opening (0.5mg, 1mg, 2mg & 5mg) are licensed for replacement therapy in adrenal insufficiency in <18 years of age but are very expensive and classified GREY consultant/specialist initiation. These are only to be used in patients whose hydrocortisone must otherwise be individually prepared by manipulation in order to produce an age-appropriate dose, or if hydrocortisone is given as off-label buccal tablets.</p> <p>UNLICENSED 5mg/5ml and 10mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p>
Hydroxycarbamide	<p>Cytotoxic: Do not crush or open capsule</p> <p>UNLICENSED 500mg/5ml oral suspension included in Part VIII B of Drug Tariff. Minimum quantity 100ml</p> <p>Caution - CYTOTOXIC</p>

Hydroxychloroquine Sulfate	<p>The tablets can be crushed and dispersed in water.¹</p> <p>UNLICENSED 200mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p>
Hyoscine Butylbromide	<p>UNLICENSED 10mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p> <p>Note that sugar-free oral solution is also available but is more expensive.</p>
Hyoscine Hydrobromide	<p>LICENSED chewable tablets available. Consider switching to hyoscine hydrobromide (Scopoderm) 1mg patch if appropriate.</p> <p>The tablets may be sucked if the patient is able, and absorbed through the lining of the mouth, although the level of absorption may vary, particularly in patients with little saliva.¹</p> <p>The tablets can be dissolved in water for administration via enteral tube, but again, absorption may vary.¹</p>
Imipramine HCl	<p>Tablets may be crushed and mixed with water. For enteral tubes, flush well after dosing as the coating has the potential to block the tube.¹</p> <p>Licensed sugar-free oral solution available (25mg/5ml - expires 30 days after opening) or consider alternative tricyclic antidepressant. With enteral administration it may adsorb to the tube, so flush well after dosing.¹</p> <p>If administered directly into the jejunum (i.e. through an NJ, PEJ, or PEGJ tube), monitor for increased systemic effects.¹</p>
Indapamide	<p>The standard tablets can be dispersed in water for administration. They disperse in one to five minutes.¹</p> <p>DO NOT crush slow release formulations.¹</p> <p>Consider switch to IR indapamide (1.5mg SR is equivalent to 2.5mg IR) or bendroflumethiazide.</p> <p>For patients with tubes terminating in the stomach, the standard tablets can be dispersed in water for administration. Administration via tubes terminating in the jejunum is not appropriate for indapamide as absorption will be greatly reduced.¹</p>
Irbesartan	<p>Consider switching to alternative ACEi or ARB.</p> <p>The tablets can be crushed and dispersed in water for administration. Without crushing they disperse in around five minutes.¹</p> <p>There is no information available to indicate whether irbesartan is likely to block enteral feeding tubes. Flush enteral tube well after each dose.¹</p>

Isosorbide Mononitrate	<p>Do not open capsule contents and do not crush the modified release (MR) tablets (note: if scored, they can be halved). MR preparations can be converted to twice daily immediate release (IR) preparations (morning and lunchtime – see below). Most patients can be changed initially on a milligram per milligram substitution of their total daily dose where available preparations allow. (PresQIPP Bulletin 85 Isosorbide Mononitrate Prescribing 2.0 Nov 2015)</p> <p>The IR tablets can be crushed and dispersed in water. They may have an increased rate of absorption and therefore increased side effects. Consider reducing the dose and giving doses more frequently if this occurs.</p> <p>UNLICENSED 20mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p> <p>Consider use of glyceryl trinitrate transdermal patches (LICENSED).</p>
Lansoprazole	LICENSED orodispersible tablets available. License covers administration via NG tube.
Levetiracetam	<p>LICENSED sugar-free oral solution available (100mg/ml). Granules also available but are more expensive than liquid.</p> <p>Granules (Desitrend) are licensed to be administered via feeding tube. The granules should be suspended by shaking for at least 2 minutes in at least 10mL of water, then administered through the enteral feeding tube which should be flushed twice with 10mL of water.¹</p>
Levomepromazine	<p>Consider switching to alternative antipsychotic if appropriate (eg: haloperidol, chlorpromazine, sulpiride available as LICENSED liquids)</p> <p>The tablets can be dispersed in water for administration if necessary. They disperse immediately.¹</p> <p>25mg tablets have a break line and can be halved if the patient, carer or pharmacy is able. Ensure directions are clearly explained to patient.</p> <p>UNLICENSED 2.5mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p>
Levothyroxine	<p>Crush and disperse tablets in water¹</p> <p>LICENSED levothyroxine oral solution 50micrograms/5mL or 100micrograms/5mL. Shelf life is 28 days once opened.</p> <p>LICENSED levothyroxine oral solution 25micrograms/5ml is also available but is more expensive.</p> <p>For patients receiving levothyroxine through enteral feeding tubes, consider holding the feed for one hour before and one hour after each dose to minimise feed interactions.¹</p> <p>Administration - NJ / PEJ / PEGJ tubes: There is some indication that absorption of levothyroxine is reduced when administered through enteral feeding tubes terminating in the jejunum. Monitor thyroid function, consider increasing the dose if necessary, and take care when switching between jejunal and gastric-terminating tubes.¹</p> <p>Ask pharmacist for more details (see NEWT guidelines)</p>
Linagliptin	No information available. Review indication and consider alternative options. See individual entries.

Lisinopril	<p>The tablets can be dispersed in water. The drug is soluble and the tablets disperse in one to five minutes¹</p> <p>LICENSED lisinopril 5mg/5mL oral solution S/F is available but very expensive. Shelf life is 28 days once opened.</p> <p>Lisinopril oral solution is absorbed to a lesser extent than lisinopril tablets. When converting patients to and from the liquid, monitor blood pressure and consider a dose alteration if necessary¹</p>
Lofepamine	<p>The tablets are not suitable for crushing.¹</p> <p>LICENSED sugar-free oral suspension available (70mg/5ml)</p> <p>For enteral administration Rosemont do not recommend diluting the suspension with water before administration as this may destabilise the suspension. If administered directly into the jejunum (i.e. through an NJ, PEJ, or PEGJ tube), monitor for increased systemic effects. Lofepamine has a high level of first pass metabolism so can have increased absorption leading to greater clinical effects and adverse effects.¹</p>
Loperamide Hydrochloride	<p>Opening capsules is not recommended as it can change the bioavailability and will block feeding tubes.¹</p> <p>LICENSED Loperamide 1mg/5mL oral solution sugar free.</p> <p>Loperamide liquid is suitable for administration through enteral tubes terminating in the jejunum. The liquid should be given undiluted to facilitate its dose dependant effect on motility. Flushing should still occur.¹</p> <p>Loperamide 2mg orodispersible tablets (LICENSED, LESS COST-EFFECTIVE)</p>
Lorazepam	<p>The tablets can be crushed and mixed with water for administration. Without crushing they disperse in one to five minutes.¹</p> <p>The tablets may also be effective given sublingually, but be aware that the patient must have a sufficiently moist mouth for sublingual absorption to occur.</p> <p>Lorazepam 1mg/ml oral solution S/F is also available (LICENSED, HIGH COST). Consider switch to diazepam liquid if no other suitable alternative.</p>
Losartan Potassium	<p>Consider switch to alternative ACEi or ARB (see separate entries)</p> <p>For swallowing difficulties, losartan 2.5mg/mL oral suspension sugar free (LICENSED, HIGH COST). Shelf life is 28 days once reconstituted.</p> <p>No information about administering the suspension via enteral tubes has been located. If necessary the tablets can be crushed and mixed with water for administration.¹</p>
Lymecycline	<p>Consider switching to doxycycline (LICENSED) (see separate entry)</p>

Magnesium	<p>1st line: Co-magaldrox liquid 10-20ml QDS, preferred brand is Mucogel (10ml Mucogel = 6.6mmol Mg). See Southern Derbyshire Shared care Pathology guidelines on Hypomagnesaemia in Adults available here: http://www.derbyhospitals.nhs.uk/primary/pathology/southern-derbyshire-shared-care-pathology/</p> <p>2nd line (<u>only if intolerant of co-magaldrox</u>): Licensed chewable tablets (Neomag 1 tablet=4mmol Mg).</p>
Mebeverine Hydrochloride	<p>Mebeverine 135mg tablet is equivalent to mebeverine 150mg liquid¹</p> <p>LICENSED sugar-free oral suspension available (50mg/5ml), but very expensive.</p> <p>If laxative also needed, consider mebeverine with ispaghula husk effervescent granules. NB. This combined product is not suitable for administration via enteral feeding tube</p>
Melatonin	<p>Circadin 2mg MR is the preferred prescribing option (off-label). See melatonin information sheet for more information.</p> <p>NB: Changing between immediate release and modified release preparations is not recommended without discussion with the specialist.</p> <p>Circadin tablets may be halved using a tablet cutter and maintain slow release properties.</p> <p>Circadin tablets may be crushed. Modified release characteristics are then lost and it acts like an immediate release preparation. See information sheet on Derbyshire Medicines Management website for more information.</p> <p>Circadin[®] is not licensed to be given through enteral feeding tubes. However the manufacturers state that if necessary it can be crushed and mixed in 15-30mL of water for administration through enteral feeding tubes. The tube should be flushed well after administration</p> <p>Ask prescribing advisor for advice on most cost effective option if considering using an unlicensed liquid special. A variety of strengths are included in Part VIII B of Drug Tariff (UNLICENSED).</p>
Memantine	<p>The tablets can be crushed and dispersed in water for administration. Crush well as they are film-coated¹</p> <p>LICENSED orodispersible and soluble tablets are available</p> <p>LICENSED 10mg/ml oral solution S/F is available.</p>
Mercaptopurine	<p>CYTOTOXIC – DO NOT CRUSH TABLETS</p> <p>LICENSED suspension available (20mg/ml Xaluprine®, Nova Laboratories - Expires 56 days after opening) NB: Carers handling the suspension should wear gloves in case of contact with the medication</p>

Mesalazine	<p>Tablets are enteric coated for release in the small intestine. Do not crush.</p> <p>For oral administration and wide-bore tubes: <i>Pentasa</i>® tablets will disperse in water, leaving small beads which must be administered intact and therefore may not be appropriate for patients with limited understanding or impaired ability to follow instructions.¹ Do not crush.</p> <p>Mesalazine MR granules sachets sugar free (LICENSED) can be used for patients with swallowing difficulties but not for enteral feeding.¹ Prescribe as <i>Pentasa</i> ®or <i>Salofalk</i>®</p> <p>Consider rectal route (enemas or suppositories) if appropriate to the location of the condition.</p>
Metformin	<p>LICENSED sugar-free oral solution available (500mg/5ml, expires 60 days after opening).</p> <p>Other strengths available, but 500mg/5ml most cost effective option as per Drug Tariff May 19.</p> <p>Oral solution (Colonis brand) is licensed for administration via enteral feeding tubes. Flush the feeding tube twice with 10mL of water each after each dose.¹ & SPC</p> <p>The primary site of absorption of metformin is the small intestine,³⁷⁶ so there is a possibility of reduced absorption if it is given via enteral tubes terminating in the jejunum.</p>
Methotrexate	<p>Cytotoxic drug DO NOT CRUSH TABLETS</p> <p>LICENSED sugar-free solution available, but expensive (Rosemont, 2mg/ml - available as 35ml and 65ml)</p> <p>NB: Carers handling the suspension should wear gloves in case of contact with the medication</p> <p>Consider subcutaneous routes of administration. Shared care guideline.</p>
Metoclopramide HCl_	<p>Tablets have been crushed and mixed with water. Do not crush the MR preparation.¹</p> <p>LICENSED metoclopramide oral Soln 5mg/5ml S/F is also available.</p> <p>For tube feeds, use the oral solution. Metoclopramide has been reported as being incompatible with some enteral feeds, so ensure enteral feeding tubes are flushed well before and after each dose.¹</p>
Metoprolol	<p>Consider switching to alternative betablocker e.g. atenolol which is available as LICENSED liquid.</p> <p>The tablets can be crushed and mixed with water for administration. They disperse very slowly. Do not crush / disperse the modified-release tablets¹</p> <p>UNLICENSED 12.5mg/5ml & 50mg/5ml oral solution included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 150ml</p> <p>Note oral suspension also in tariff, but only in 12.5mg/5ml strength (min. quantity 100ml)</p>

Midazolam for status epilepticus	<p>Derbyshire is moving to one preferred buccal midazolam product (Buccolam), for use in both adults (off-licence use) and children (licensed use).</p> <p>Epistatus now DNP. Existing patients on epistatus should be reviewed by the specialist and switched to the recommended buccolam preparation at their next review</p>
Midodrine	The tablets can be crushed and mixed with water for administration. ¹
Mirtazapine	<p>Use the oral solution or the orodispersible tablet, as the standard tablet, when crushed, has a bitter taste and an anaesthetic effect on the mouth.¹</p> <p>LICENSED orodispersible tablets and oral solution available (orodispersible tablets are more cost effective than oral solution if patient can manage them)</p> <p>Mirtazapine is mostly absorbed in the duodenum. There is therefore a risk that if the drug is given through an enteral tube terminating in the jejunum that the drug will not be fully absorbed and the patient will not receive the prescribed dosage. Any patient requiring mirtazapine through an enteral tube terminating in the jejunum should be reviewed, and if the situation is long-term, consideration should be given to using a different treatment.¹</p>
Modafinil	<p>The manufacturer states that theoretically modafinil tablets can be crushed and dispersed in water for administration. This should be done immediately prior to use as there is no stability data available¹</p> <p>UNLICENSED 100mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p>
Montelukast	<p>For enteral feeds, use the chewable tablets, and disperse in water for administration. Withhold enteral feeds for two hours before and one hour after administration of montelukast.¹</p> <p>For oral administration, montelukast is available as both chewable tablets and granules</p> <p>Montelukast 4mg sugar free oral granules (LICENSED) can be administered either directly in the mouth, or mixed with a spoonful of soft food (SPC Montelukast sodium 4mg oral granules, April 2016)</p>
Morphine	<p>LICENSED preparations available (solution, sachets and suppositories)</p> <p>Zomorph capsules are licensed to be opened and the contents administered directly in semi-solid food (puree, jam, yoghurt) or via wider bore gastric or gastrostomy tubes. See SPC for details.</p> <p>MXL capsules may be swallowed whole or opened and the contents sprinkled on to soft cold food. The capsule and contents should not be crushed or chewed. See SPC for details.</p> <p>When an immediate-release product is required, administer morphine sulphate oral solution (e.g. Oramorph®). This is the preferred enteral method of administering morphine. The use of controlled-release preparations of morphine via enteral feeding tubes is not usually recommended.¹</p>

Naproxen	<p>The standard tablets can be crushed and dispersed in water for administration.¹ Do not crush the enteric coated tablets.</p> <p>LICENSED dispersible tablets and suspension (125mg/5ml sugar-free and 250mg/5ml) available but expensive.</p> <p>If liquid needed consider alternative NSAID (e.g. ibuprofen suspension 100mg/5ml)</p> <p>If considering enteral tube administration - consider switching to an alternative non-steroidal anti-inflammatory drug available via a different route.¹</p>
Nicorandil	<p>The tablets can be crushed and mixed with water for administration. Without crushing they disperse in around five minutes. Some of the excipients in the tablets are insoluble, so take care to flush enteral tubes well after administration¹</p>
Nifedipine	<p>Use of immediate release (IR) nifedipine capsules for blood pressure control is no longer recommended due to the risk of rebound hypertension and tachycardia.</p> <p>For blood pressure control: Consider alternative methods of blood pressure control, e.g. switching to amlodipine. See separate entry</p> <p>Coracten MR capsules can be opened and beads mixed with water (Do not crush)¹</p> <p>Modified-release capsules (e.g. Coracten[®]) can be opened and the contents flushed down enteral feeding tubes for administration. The capsule contents should not be crushed as this will destroy their modified-release properties. Be sure to flush the enteral tube well after dose administration.¹</p> <p>For other indications: UNLICENSED nifedipine 10mg/5mL oral suspension (MOST COST-EFFECTIVE STRENGTH) included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml.</p>
Nitrazepam	<p>LICENSED oral suspension (2.5mg/5ml) available but expensive.</p> <p>Alternatively, consider switching to temazepam (LICENSED liquid available)</p>
Nitrofurantoin	<p>Consider alternative antibiotic if clinically appropriate</p> <p>Do not open modified release (MR) capsules.</p> <p>Open 50mg or 100mg immediate release (IR) capsules and disperse contents in water.¹</p> <p>Crush and disperse IR tablets in water for enteral feeds only¹</p> <p>Nitrofurantoin 25mg/5mL oral suspension sugar free (LICENSED, VERY HIGH COST)</p>

Nortriptyline	<p>Consider alternative tricyclic antidepressant.</p> <p>The tablets will disperse in water for administration. They disperse in one to two minutes.¹</p> <p>Administration - enteral tubes. No information on administering the oral solution via enteral feeding tubes has been located. If administered directly into the jejunum (i.e. through an NJ, PEJ, or PEGJ tube), monitor for increased systemic effects.¹</p> <p>UNLICENSED 10mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml. Note that 100ml costs £201.75 (DT Dec18)</p>
Olanzapine	<p>LICENSED orodispersible tablets available (same dose and frequency as coated tablets). Can be placed on the tongue or dispersed in water, orange juice, milk or coffee.</p> <p>Olanzapine may be irritant to the skin and eyes, so take precautions to avoid contact (e.g. wear gloves).</p> <p>Sugar-free orodispersible tablets are more cost effective than non-sugar-free versions (DT Dec18).</p> <p>Note that oral lyophilisate is very expensive.</p> <p>Administration - enteral tubes 1st choice - Use the Velotab® and disperse in water.¹</p>
Omeprazole	<p>Capsules can be opened (LICENSED): SPC states "Patients can open the capsule and swallow the contents with half a glass of water or after mixing the contents in a slightly acidic fluid e.g. fruit juice or applesauce, or in non-carbonated water. Patients should be advised that the dispersion should be taken immediately (or within 30 minutes) and always be stirred just before drinking and rinsed down with half a glass of water. Alternatively, patients can suck the capsule and swallow the pellets with half a glass of water. The enteric-coated pellets must not be chewed."</p> <p>LICENSED orodispersible tablets available if opening capsules is not an option. Disperse in water then mix with other juice/yoghurt if flavouring required.</p> <p>For enteral tubes, Mezzopram dispersible tablets are licensed for use through enteral feeding tubes or consider switching to lansoprazole orodispersible tablets.¹ (See separate entry). See NEWT guidelines for administration.</p>
Oxybutynin HCl	<p>Tablets have been crushed and mixed with water. Do not halve, crush or chew the prolonged release tablet¹</p> <p>Could patient have a trial without?</p> <p>LICENSED oral solution available, but very expensive (2.5mg/5ml & 5mg/5ml sugar free) Patches also available (Kentera, 3.9mg/24 hours - replace twice weekly)</p>
Pantoprazole	<p>Consider switching to another proton pump inhibitor which is available in a suspension or dispersible form, e.g. lansoprazole orodispersible tablets or omeprazole (<i>Losec MUPS</i>). See separate entries.</p>

Paroxetine Hydrochloride	<p>Crush tablets and mix with water. The crushed tablets are bitter and have a slight local anaesthetic effect.¹</p> <p>For enteral tubes, they must be crushed well and the tube flushed well as the tablets are film-coated¹</p> <p>LICENSED paroxetine 10mg/5mL oral suspension S/F. Shelf life is 28 days once opened.</p>
Perindopril Arginine	<p>Classified DNP. No licensed liquid available.</p> <p>Consider switching to alternative ACEi or perindopril erbumine (note that 2.5mg perindopril arginine is equivalent to 2mg perindopril erbumine).</p>
Perindopril Erbumine	<p>The tablets can be crushed and mixed with water for administration.¹</p> <p>Administration - enteral tubes: Perindopril erbumine may not be effective when administered through enteral tubes terminating in the jejunum due to decreased absorption. Perindopril erbumine should be taken before food, so withhold enteral feeds for at least half an hour before and half an hour after administration. If the patient does not have a break in their feeding regimen during which perindopril erbumine can be given, the Nutrition Team should be contacted to advise on management¹.</p> <p>UNLICENSED Perindopril erbumine 4mg/5ml oral solution included in Part VIIIB of Drug Tariff (Dec18). Minimum quantity 150ml</p> <p>Note that oral suspension is also in tariff but the solution is more cost effective.</p>
Phenobarbital	<p>If used as epilepsy treatment, a product change poses a risk of fits: https://www.gov.uk/drug-safety-update/antiepileptic-drugs-new-advice-on-switching-between-different-manufacturers-products-for-a-particular-drug</p> <p>The tablets may be crushed and mixed with water for administration¹</p> <p>Consider licensed 15mg/5ml elixir (NB Contains 38% v/v ethanol).</p> <p>Consider alcohol free unlicensed liquid for children. Alcohol free unlicensed specials available (but not in drug tariff).</p> <p>Note that Nottingham (NUH) use 25mg/5ml and Derby use 50mg/5ml so ensure that you order the correct strength. (Please confirm formulation information with hospital to ensure this is still correct at time of prescribing).</p>
Phenytoin	<p>If used as epilepsy treatment, a product change poses a risk of fits: https://www.gov.uk/drug-safety-update/antiepileptic-drugs-new-advice-on-switching-between-different-manufacturers-products-for-a-particular-drug</p> <p>LICENSED preparations available (30mg/5ml oral suspension and chewable tablets (Epanutin Infatabs)).</p> <p>Care is needed when switching between different phenytoin preparations - 90mg liquid equivalent to 100mg tablets, capsules or injection It is recommended that phenytoin should NEVER be administered via enteral feeding tube. If parenteral therapy is not possible, alternative treatments should be considered.¹</p>
Pioglitazone	<p>The tablets can be crushed and mixed with water for administration. Give immediately.¹</p>

Pizotifen	<p>The tablets have been crushed and mixed with water for administration.¹</p> <p>See Derbyshire Primary Care Formulary for preferred options in prophylaxis of migraine.</p>
Potassium Acid Phosphate = Potassium dihydrogen Phosphate	<p>No licensed oral liquid available.</p> <p>Not in drug tariff.</p> <p>Injection is packed down for oral use in neonates.</p> <p>7 days expiry once opened as solution is not preserved.</p> <p>Secondary care may be able to supply if community pharmacy can't source a supplier.</p>
Potassium Chloride	<p>LICENSED preparations available: Sando K effervescent tablets; Kay-Cee-L liquid (dilute before use).</p> <p>Do not crush Slow K which are modified release.</p>
Pravastatin Sodium	<p>The tablets can be crushed and mixed with water for administration. The drug is very soluble. Use immediately.¹</p> <p>Consider switch to atorvastatin chewable tablets</p>
Prednisolone	<p>Many brands of tablets disperse easily in water, with some dispersing almost immediately and others taking two to five minutes.¹</p> <p>Do not crush the enteric-coated tablets.</p> <p>LICENSED prednisolone 5mg soluble tablets are GREY for fine bore tubes only.</p>
Pregabalin	<p>If used as epilepsy treatment, a product change poses a risk of fits: https://www.gov.uk/drug-safety-update/antiepileptic-drugs-new-advice-on-switching-between-different-manufacturers-products-for-a-particular-drug</p> <p>Open the capsules and dissolve the contents in water for administration. The capsule contents may have an unpleasant taste.¹</p> <p>LICENSED pregabalin 20mg/mL oral solution sugar free.</p>
Primidone	<p>If used as epilepsy treatment, a product change poses a risk of fits: https://www.gov.uk/drug-safety-update/antiepileptic-drugs-new-advice-on-switching-between-different-manufacturers-products-for-a-particular-drug</p> <p>The tablets can be crushed and dispersed in water. Without crushing they will disperse in two to five minutes. The drug is poorly soluble.¹</p> <p>UNLICENSED 50mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p> <p>Note that 62.5mg/5ml & 250mg/5ml oral suspension also in tariff, but 50mg/5ml is more cost effective.</p>
Probenecid	<p>The tablets (if available) can be crushed and mixed with water for administration. Without crushing they will disperse in two to five minutes¹</p>
Prochlorperazine Maleate	<p>Prochlorperazine 5mg/5mL oral solution (LICENSED, LOW COST) Prochlorperazine 3mg buccal tablets (LICENSED, HIGH COST)</p>
Procyclidine Hydrochloride	<p>LICENSED sugar-free oral solution available (2.5mg/5ml and 5mg/5ml)</p>

Propranolol Hydrochloride	<p>LICENSED sugar-free oral solution available (5mg/5ml, 10mg/5ml, 40mg/5ml & 50mg/5ml - may have short expiry)</p> <p>Do not crush / open modified-release preparations.¹</p> <p>The oral solution can be diluted with water to reduce the osmolality if desired when giving into the jejunum, however this is outside the marketing authorisation.¹</p> <p>Absorption of enteral propranolol can be increased by concomitant food or milk. It is therefore advisable to ensure that doses of propranolol are given at the same time of day each day in relation to feeds.¹</p>
Pyridostigmine	<p>The tablets can be crushed and mixed with water for administration¹</p> <p>Oral suspension (various strengths) in drug tariff, but is very expensive.</p>
Pyridoxine	<p>The tablets can be crushed and mixed with water for administration. The 50mg tablets disperse in one to five minutes.¹</p> <p>UNLICENSED 100mg/5ml oral <u>solution</u> included in Part VIII B of Drug Tariff (Dec18) Minimum quantity 100ml</p> <p>Note 100mg/5ml oral suspension also in tariff, but oral solution is more cost effective.</p>
Quetiapine	<p>The crushed tablets have been added to soft food (e.g. yogurt). They taste bitter.¹</p> <p>For enteral tubes, the tablets can be crushed and mixed with water for administration. Flush well after administration (tablets are not soluble).¹</p> <p>UNLICENSED Quetiapine 25mg/5mL oral suspension. Shelf life is 28 days once opened.</p> <p>LICENSED sugar-free oral suspension available (20mg/ml, Rosemont - Expires 1 month after opening and must be stored in the fridge in original container to protect from light). Note: Expensive - £95 per 100ml</p>
Quinine Sulfate	<p>Consider continued need.</p> <p>Crush the tablets well, and disperse in a large volume (e.g. 200mL) of water. The crushed tablets have a bitter taste which may be masked by mixing with syrup. Only use if absolutely necessary and swallowing problems are likely to be long-term.¹</p> <p>Enteral tubes: Crush the tablets well, and disperse in a large volume (e.g. 200mL) of water. Flush well to minimise blockage and irritancy, as the coating is likely to block narrow-bore enteral feeding tubes.¹</p> <p>UNLICENSED 300mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 150ml</p> <p>200mg/5ml also available, but 300mg/5ml is more cost effective.</p> <p>Suspension is very expensive, consider continued need for quinine.</p>

Ramipril	<p>Open capsule and disperse contents in water. The contents can be placed onto bread or mixed with apple juice/apple sauce or can be placed directly into the mouth, though taste unpleasant.¹</p> <p>For enteral tubes, crush and disperse tablets in water.¹</p> <p>LICENSED ramipril 2.5mg/5mL oral solution sugar free. Shelf life is 28 days once opened.</p> <p>Rosemont oral solution is licensed to be administered via NG and PEG tubes¹</p>
Ranitidine	<p>LICENSED 75mg/5ml and 150mg/5ml sugar-free oral solution (contains alcohol, but still used by paediatricians off label as amount of alcohol per dose not thought to be an issue)</p> <p>LICENSED 150mg or 300mg effervescent tablets (alcohol free and may be used if alcohol not suitable due to religious beliefs).</p> <p>Ranitidine will be suitable for administration through enteral tubes terminating in the jejunum. Use the effervescent tablets, dissolved in at least 75mL of water¹</p>
Risperidone	<p>LICENSED risperidone 1mg/mL oral solution sugar free.</p> <p>LICENSED risperidone orodispersible tablets sugar free. Dissolve on tongue or disperse in water (HIGH COST)</p>
Rivaroxaban	<p>License for Xarelto (rivaroxaban) includes crushing tablets and mixing with water or apple puree immediately prior to use. Doses of 2.5mg and 10mg may be given either with or without food, but doses of 15mg and 20mg should be given with food.</p> <p>See SPC for info on administration via gastric tube.</p> <p>Not suitable for administration via enteral feeding tubes terminating beyond the stomach (i.e. in the duodenum or jejunum)</p>
Rivastigmine	<p>Capsules can be opened and contents dispersed in water.¹</p> <p>LICENSED 2mg/ml oral solution S/F and LICENSED patches are available but expensive.</p>
Ropinirole Hydrochloride	<p>Do not crush the modified release (MR) tablets. Switch MR tablets to immediate release (IR) tablets (see individual SPC for conversion).</p> <p>The tablets can be crushed and mixed with soft food for patients with swallowing difficulties.¹</p> <p>The tablets can be crushed and mixed with water for administration via enteral feeding tubes. There is no information available to indicate whether ropinirole tablets are likely to block enteral feeding tubes.¹</p>
Rosuvastatin Calcium	<p>The tablets can be crushed and mixed with water for administration.¹</p>

Sertraline	<p>The tablets can be crushed and mixed with food for patients with swallowing difficulties.¹ N.B. Crushed tablets have a bitter taste and an anaesthetic effect on the tongue, so use with caution and take care with hot foods after administration.¹</p> <p>Enteral tubes: The tablets can be dispersed in water for administration. They disperse in one to five minutes.¹ No information on administered the oral suspension via enteral feeding tubes has been located¹</p> <p>Consider switching to alternative SSRI. Fluoxetine (available as LICENSED liquid) or citalopram (available as LICENSED oral drops)</p> <p>UNLICENSED 50mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 150ml</p> <p>Note that 100mg/5ml also in tariff, but 50mg/5ml is more cost effective.</p>
Sildenafil	<p>Tablets can be crushed and dispersed in water¹.</p> <p>LICENSED oral suspension available (Revatio 10mg/ml), chewable tablets 25mg, 50mg, 100mg (expensive)</p> <p>UNLICENSED 10mg/5ml and 25mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p> <p>No information on administering the suspension via enteral feeding tubes has been located.¹</p>
Simvastatin	<p>The tablets can be crushed and mixed with water for administration. Crush well as the drug is practically insoluble. Use immediately (light sensitive).¹</p> <p>LICENSED simvastatin 20mg/5mL or 40mg/5mL oral suspension sugar-free (HIGH COST). Shelf life is 28 days once opened.</p> <p>Consider switch to atorvastatin which is available as licensed chewable tablets.</p>
Sodium Bicarbonate	<p>Capsules can be opened and contents mixed with a glass of water as per instructions in PIL (Focus Pharmaceuticals).</p> <p>Licensed sugar-free oral solution available (1mmol/ml), but is very expensive compared to opening the capsules.</p> <p>Administration - enteral tubes The capsules can be opened and the contents mixed with water for administration.¹</p>
Sodium Valproate	<p>If used as epilepsy treatment, a product change poses a risk of fits: https://www.gov.uk/drug-safety-update/antiepileptic-drugs-new-advice-on-switching-between-different-manufacturers-products-for-a-particular-drug</p> <p>LICENSED preparations available: Liquid, MR granules and Crushable tablets - crush tablets and mix with water or soft food (eg yoghurt or jam) to mask bitter taste</p> <p>For patients who are stabilised on modified-release formulations, use the modified-release granules. The granules should not be chewed or crushed¹</p> <p>For enteral tubes: Use the liquid (contains sorbitol). If necessary the liquid can be diluted immediately prior to administration. It should not be diluted in advance as this would dilute the preservative.¹</p>

Sotalol Hydrochloride	<p>The tablet can be crushed and mixed with water for administration. The drug is very soluble.¹</p> <p>Consider switching to alternative beta-blocker e.g. atenolol (available as licensed liquid)</p> <p>UNLICENSED sotalol 25mg/5mL oral suspension included in Part VIII B of Drug Tariff (May 19). Minimum quantity 200ml. Shelf life is 30 days once opened.</p>
Spironolactone	<p>The tablets can be crushed and mixed with water for administration.¹</p> <p>UNLICENSED 5mg/5ml, 10mg/5ml, 25mg/5ml, 50mg/5ml & 100mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 125ml***</p>
Sucralfate	<p>Tablets are classified GREY after consultant/specialist recommendation for empirical management of patients with severe GORD, or post-cholecystectomy, alongside use of PPIs.</p> <p>Liquid is classified as DNP.</p> <p>SPC states that crushed <i>tablets</i> may be dispersed in water.³</p>
Sulpiride	<p>The tablets can be dispersed in water for administration. They disperse in one to five minutes.¹</p> <p>LICENSED 200mg/5ml oral solution S/F is available</p> <p>For enteral feeds the oral solution can be diluted with water to reduce the osmolality if desired when giving into the jejunum, however this is outside the marketing authorisation.¹</p>
Tamsulosin Hydrochloride	<p>If no other option, Modified Release capsules can be opened and the contents mixed with cold water and swallowed whole, do not crush or chew granules - not suitable for feeding tubes as likely to block them.¹</p> <p>The tablet is modified-release and should not be crushed.¹</p> <p>Note that unlicensed suspension costs more than £283 per 100ml (DT Dec18) - ask prescribing advisor for advice on alternative treatments.</p>
Terbinafine	<p>The tablets can be crushed and mixed with water for administration.¹</p> <p>UNLICENSED 250mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 50ml</p>
Thiamine Hydrochloride	<p>The tablets can be crushed and dispersed in water for administration.¹</p> <p>UNLICENSED 100mg/5ml oral <u>suspension</u> included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p> <p>Note that 50mg/5ml oral suspension and 100/5ml oral solution in tariff, but not as cost effective as 100mg/5ml oral suspension.</p>

Ticagrelor	<p>LICENSED orodispersible 90mg tablets available</p> <p>The SPC for Brilique tablets (60 mg and 90 mg) states that they can be crushed to a fine powder and mixed in half a glass of water and drunk immediately. The glass should be rinsed with a further half glass of water and the contents drunk. The mixture can also be administered via a nasogastric tube (CH8 or greater). It is important to flush the nasogastric tube through with water after administration of the mixture.</p> <p>Administration - enteral tubes 1st choice - The orodispersible tablets can be dispersed in water for administration.</p> <p>2nd choice - The tablets can be crushed and mixed with water for administration through enteral feeding tubes of size 8 or greater. Flush the tube well after administration.¹</p>
Tizanidine	<p>The tablets can be crushed and mixed with water for administration.¹</p> <p>UNLICENSED 2mg/5ml oral solution included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p> <p>Note that 2mg/5ml oral suspension also in tariff, but not as cost effective as oral solution.</p>
Tolterodine	<p>If continued therapy with tolterodine is indicated, the tablets can be dispersed in water for administration. They disperse within one minute. Use immediately.¹</p> <p>The modified-release capsules contain time-release beads which can be removed from the capsule and administered orally whole, to patients with the ability to follow the instruction not to chew.¹</p> <p>No information has been located to indicate whether tolterodine is likely to block enteral feeding tubes. The modified-release capsules are not suitable for use via enteral feeding tubes.¹</p> <p>UNLICENSED 2mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p>
Topiramate	<p>LICENSED sprinkle capsules available (sprinkle contents on soft food and swallow immediately without chewing)</p> <p>For enteral tubes the tablets can be crushed and dispersed in water for administration.¹</p> <p>LICENSED topiramate 50mg/5ml and 100mg/5ml oral suspension S/F is available but expensive.</p>
Tranexamic Acid	<p>The tablets can be crushed and mixed with water for administration. Without crushing they disperse in two to five minutes.¹</p> <p>UNLICENSED 500mg/5ml oral solution and oral suspension included in Part VIII B of Drug Tariff (Feb19). Minimum quantity 100ml</p> <p>Note that 250mg/5ml oral suspension is much more expensive (£141 for 60ml DT Feb19).</p>
Tranexamic acid mouthwash	<p>5% mouthwash (alcohol free) included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 100ml</p>
Trazodone	<p>Opening the capsules is not recommended.¹</p> <p>Licensed sugar-free oral solution available (50mg/5ml most cost effective (DT Dec18) and 100mg/5ml), but is expensive. Consider other licensed antidepressants before using liquid.</p>

Trihexyphenidyl (formerly known as benzhexol)	The tablets will disperse in water for administration. ¹ LICENSED oral solution available (5mg/5ml)
Ursodeoxycholic acid	The tablets have been crushed and mixed with water for administration. ¹ For enteral administration, the powder resulting from crushing the tablets has limited solubility and may stick to the inside of enteral feeding tubes; flush well after administration. ¹ LICENSED sugar-free oral suspension available (250mg/5ml, Ursofalk®)
Valproic Acid	Consider switching to LICENSED Epilim liquid 200mg/5ml. NB: there are pharmacokinetic differences; take care when switching. It is recommended that when switching from valproic acid to sodium valproate, a slightly higher (approximately 10%) dose of sodium valproate is used and to monitor for clinical effect. ¹
Vancomycin	The injection can be diluted with 30mL water for injection and given enterally. ¹ Vancomycin capsules should not be administered via enteral tubes.
Venlafaxine	Consider switching to mirtazapine (available as orodispersible tablets) if appropriate. For non MR tablets: crush and mix with water. Crushed tablets can be administered in jam for those with swallowing difficulties. ¹ The modified-release capsules contain modified-release beads which can be emptied out and given in smooth food, e.g. yogurt, for patients with swallowing difficulties. The beads must be swallowed whole. ¹ The modified-release capsules are not suitable for enteral tube administration and no information on administering the oral solution via enteral feeding tubes has been located. ¹ UNLICENSED 37.5mg/5ml and 75mg/5ml oral <u>solution</u> included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 150ml. Suspension also listed in tariff, but solution is more cost effective (DT Dec18)
Verapamil	The standard tablets have been crushed and mixed with water for administration. Administered orally they have a bitter taste and a local anaesthetic effect in the mouth. ¹ Do NOT crush MR tablets or open the capsules. ¹ LICENSED sugar-free oral solution available (40mg/5ml, expires 3 months after opening). If changing from a modified-release preparation to the liquid, divide the daily dose into three equal doses.

Warfarin	<p>Adult patients – consider switch to NOAC – apixaban or rivaroxaban where appropriate. See separate entries.</p> <p>The tablets can be crushed and mixed with water for administration. Without crushing they disperse in two to five minutes.¹ Monitor INR</p> <p>LICENSED warfarin 1mg/mL oral suspension sugar free is available but expensive</p> <p>Warfarin appears to be absorbed high in the GI tract, and so there is a risk of reduced absorption if the drug is given through enteral feeding tubes terminating beyond the stomach. When such administration is necessary, monitor the patient closely for effect, and take particular care if the site of delivery is altered (i.e. if the jejunal tube is changed for a gastric one).</p> <p>Note: some enteral feeds containing high levels of Vitamin K which can antagonise the effects of warfarin and warfarin resistance may occur. Monitor the INR closely</p> <p>Withhold enteral feeds for one to two hours before and one to two hours after each dose</p>
Zolpidem	<p>The tablets can be crushed and mixed with water for administration¹</p>
Zonisamide	<p>If used as epilepsy treatment, a product change poses a risk of fits: https://www.gov.uk/drug-safety-update/antiepileptic-drugs-new-advice-on-switching-between-different-manufacturers-products-for-a-particular-drug Seek specialist advice regarding alternative therapy.</p> <p>Due to the indication of this treatment, the medical team should consider the risks and benefits carefully before agreeing to administer the medication in an unlicensed manner.¹</p> <p>If continued therapy is essential, open the capsules and mix with water or sprinkle on apple sauce, chocolate pudding, or mixed with water or apple juice (do not crush or chew contents of capsule). Monitor closely for alteration in clinical effect.¹</p> <p>The capsules can be opened and their contents dispersed in water or apple juice for administration via enteral feeding tubes.¹</p> <p>UNLICENSED 50mg/5ml oral suspension included in Part VIII B of Drug Tariff (Dec18). Minimum quantity 200ml</p>
Zopiclone	<p>Do not crush, bioavailability may be altered and has bitter taste.¹ Not suitable for enteral tubes.¹</p> <p>The tablets are not suitable for crushing or dissolving, and should not be used, as the powder will thicken quickly and may block enteral feeding tubes.¹</p> <p>Consider zolpidem tablets (see separate entry)</p> <p>UNLICENSED 3.75mg/5ml oral solution (minimum quantity 150ml) and 7.5mg/5ml oral suspension (minimum quantity 100ml) included in Part VIII B of Drug Tariff (Dec18)</p> <p>Note that other formulations of the same strengths also in tariff, but most cost effective options listed above.</p> <p>No information about giving the oral solution via enteral feeding tubes has been located.¹</p>

Eye Preparations

Preservative intolerance should usually be diagnosed by an ophthalmologist however if patients require drops more than four times per day consider switching to preservative free drops. If PF formulation is warranted, proprietary preservative-free formulations (often available as unit dose preparations) should be prescribed if at all possible. Manufactured “specials” are unlicensed and almost invariably cost significantly more. PF formulations are appropriate for example when a patient wears soft contact lenses or daily disposable contact lenses and wearing glasses instead is not a viable option such as for long courses OR where patient shows signs of preservative toxicity sometimes seen with multiple daily administrations

Drug	Alternatives available
Atropine Sulphate Eye Drops 1%	Atropine 1% eye drops 0.5ml unit dose preservative free Minims are a cost effective choice (DT Dec 17)
Carmellose PF eye drops 1%	Celluvisc 1% most cost effective choice (Dec 17)
Carmellose PF eye drops 0.5%	Xailin Fresh 0.5% most cost effective choice (Dec 17)
Ciclosporin eye drops	Licensed Ciclosporin 0.1% eye drops 0.3ml unit dose (Irkervis) available. UNLICENSED 0.05% eye drops 0.4ml unit dose PF included in Part VIII B of Drug Tariff. Minimum quantity 0.4ml
Ciclosporin eye ointment	UNLICENSED 0.2% eye ointment PF included in Part VIII B of Drug Tariff Minimum quantity 3.5g
Dexamethasone preservative free eye drops 0.1%	LICENSED 0.4ml unit dose preservative free as Dropodex more cost effective choice.
Ganciclovir eye gel	Green after consultant/specialist initiation Urgently refer all patients with suspected herpes simplex eye infection to the hospital eye department. Licensed Ganciclovir 0.15% eye gel is available.
Hypromellose eye drops	Use 0.5% as most cost effective of LICENSED preparations available. If preservative free required can use either Evolve Hypromellose 0.3% or Lumecare singles Hypromellose 0.3%.
Pilocarpine HCl Eye Drops preservative free (P/F)	UNLICENSED 2% and 4% eye drops P/F (10ml) included in Part VIII B of Drug Tariff Minimum quantity 10ml Available from Moorfields
Polyvinyl alcohol eye drops	Now classified as medical device. Listed in part IX A of drug tariff. Prescribe as Sno Tears as most cost effective choice.

Prednisolone Sodium Phosphate Eye Drops	<p>LICENSED 0.5% (as sodium phosphate) and 1% (as acetate) available (preserved).</p> <p>LICENSED 0.5% single use minims available (preservative free)</p> <p>Confirm strength required if different requested by specialist</p> <p>UNLICENSED - the following strengths (all PF) are included in Part VIII B of Drug Tariff: 0.03%, 0.05%, 0.1%, 0.3%, 1%</p>
Sodium chloride 5% Preservative Free Drops	<p>PF Drops Sodium Chloride 5%, (10ml preservative free bottle medical device and so not licensed).</p> <p>NaCl 5% (Essential Pharmaceuticals Ltd) preservative free single dose unit. 10ml bottle may be more cost effective depending on quantity prescribed.</p> <p>PF Drops Sodium Chloride 5% (10ml) and Minims included in Part IXA of Drug Tariff - APPLIANCES Please choose most cost effective option</p>
Sodium Chloride Eye Drops 0.9% Preservative Free	Single use Minims available
Sodium Chloride 5% Eye drops / ointment	<p>Hypersal 5%, Sodium Chloride 5% (Alissa Healthcare) (10ml preservative free bottles)</p> <p>UNLICENSED 5% eye ointment (5g) included in Part VIII B of Drug Tariff</p>
Sodium cromoglicate 2% preservative free eye drops	LICENSED product available from Moorfields (Catacrom® unit dose vials)

Skin Preparations

Drug	Alternatives available
Coal Tar Paste	Consider switching to LICENSED, commercially available coal tar preparation if appropriate e.g Cocois scalp ointment (Coal Tar 12%, Salicylic acid 2%, precipitated sulphur 4%), Psoriderm cream (coal tar 6%, Lecithin 0.4%)
Coal tar ointment	UNLICENSED 5% and 10% ointment (all bases) included in Part VIIIIB of Drug Tariff. Minimum quantity 100g
Coal tar soln 5% in Betameth Val. 0.025% Oint	UNLICENSED Coal tar solution 5% in Betamethasone valerate 0.025% ointment included in Part VIIIIB of Drug Tariff. Minimum quantity 100g
Coal tar and Salicylic acid ointment BP	UNLICENSED - Included in Part VIIIIB of Drug Tariff Minimum quantity 100g***
Coal tar solution 6% / Salicylic acid 2% in ointment	UNLICENSED - Included in Part VIIIIB of Drug Tariff Minimum quantity 100g***
Coconut oil 25% ointment	UNLICENSED - Included in Part VIIIIB of Drug Tariff Minimum quantity 100g***
Diltiazem	For anal fissures consider switching to licensed Glyceryl trinitrate ointment 0.4% (Rectogesic) UNLICENSED 2% ointment included in Part VIIIIB of Drug Tariff. Minimum quantity 30g Note UNLICENSED 2% cream also in tariff, but ointment is more cost effective.
Glyceryl Trinitrate Ointment	For anal fissures consider LICENSED glyceryl trinitrate ointment 0.4% (Rectogesic)
Glycopyrronium bromide 0.05% topical solution	UNLICENSED - Included in Part VIIIIB of Drug Tariff. Minimum quantity 500ml
Lidocaine gel	LICENSED 5% ointment available or consider switch to Emla cream (lidocaine 2.5% / prilocaine 2.5%)
Salicylic acid	LICENSED 2% and 50% ointment available UNLICENSED 2%, 5% & 10% cream, 5%, 10% & 20% ointment included in Part VIIIIB of Drug Tariff. Minimum quantity 100g
Salicylic acid & sulfur	UNLICENSED Salicylic acid 2% / sulfur 2% in Aq cream included in Part VIIIIB of Drug Tariff. Minimum quantity 100g
Urea_Oint 25%	Consider Flexitol / Dermatronics heel balm (Urea 25% balm)
Zinc and salicylic acid paste BP	UNLICENSED - Included in Part VIIIIB of Drug Tariff. Minimum quantity 100g
Zinc oxide 15% and ichthammol 1% in yellow soft paraffin	UNLICENSED - Included in Part VIIIIB of Drug Tariff. Minimum quantity 200g

¹The NEWT Guidelines for administration of medication to patients with enteral feeding tubes or swallowing difficulties (accessed May 19)