

# **Specials and Expensive Liquids Guideline**

## **(Produced June 2019. Updated September 2024)**

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### Introduction

**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 considered. 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, Handbook of Drug Administration via Enteral Feeding Tubes) confirming that formulation manipulation of this nature can take place without compromising the effectiveness of the medicine.**

**If in doubt, please contact a member of the medicines management team who will be able to give further advice. More detailed information is available in the NEWT guidelines and in the Handbook of Drug Administration via Enteral Feeding Tubes.**

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 considers alternative medicines, formulations, cost, and licensing. This list is not exhaustive and will be reviewed and updated accordingly.

It is advised that while every effort will be made to keep recommendations up to date, the prices of these medicines may fluctuate frequently and it is advised that the drug tariff is checked to find out the most cost-effective preparation, especially when considering prescribing an unlicensed liquid medicine. The drug tariff is available here: [Drug Tariff | NHSBSA](#)

### Equality Statement

Derby and Derbyshire Integrated Care Board'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 ICB 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 considers 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.

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### Due Regard

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

### Oral Preparations

#### 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.

Dispersing 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 considered 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.

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NB: Manipulating medicines in this way will, often, 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 VIII B of the drug tariff:**

All unlicensed medicines in part VIII B of Drug Tariff 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.**

**Please check drug tariff ([Drug Tariff | NHSBSA](#)) for most recent prices of unlicensed medicines as these can change on a frequent basis.**

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Acetazolamide	<p>Disperse the tablets. There will be a fine sediment (tablets disperse within one to five minutes). Rinse equipment well to ensure the whole dose is given</p> <p><b>UNLICENSED</b> 250mg/5ml oral suspension included in Part VIIIB of Drug Tariff minimum quantity 100ml</p>
Acetylcysteine	<p>600mg effervescent tablets. For enteral tubes, stop the feed prior to administration and restart afterwards</p> <p>600mg capsules are not recommended due to cost</p> <p>200mg oral powder sachets not recommended due to cost - No information available for use of oral powder sachets via enteral tubes</p>
Aciclovir	<p><b>Dispersible tablets.</b> Available in 3 strengths but consider using multiples of 200mg. Disperse in at least 50ml water prior to administration via enteral tubes</p> <p>Suspension 200mg/5ml or 400mg/5ml is not recommended due to cost</p> <p>Aciclovir is absorbed in the upper gastrointestinal tract, therefore there may be a risk of reduced absorption when the drug is given through an enteral feeding tube terminating in the jejunum. It is recommended to use doses at the higher end of the dosage range, and monitor the patient for clinical effect</p>
Alendronic acid	<p>Review continued need</p> <p>First line zoledronic acid IV annually (requires referral to secondary care specialist for prescribing and administration)</p> <p>Effervescent tablets sugar free are suitable for oral administration but there is no information regarding administration via enteral tubes</p> <p>70mg/100ml unit dose oral solution are more expensive than effervescent tablets so not recommended</p> <p>Do not crush the plain tablets due to potential oesophageal damage</p>

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<p>Allopurinol</p>	<p>Crush the tablets and mix with water for administration. 100mg tablets are recommended as they will disperse easily. The 300mg tablets take longer to disperse and so should be crushed well before dispersing in water. Suitable for enteral tube administration.</p> <p><b>UNLICENSED</b> 100mg/5mL (minimum quantity 150ml) or 300mg/5mL (minimum quantity 100ml) oral suspension included in Part VIII B of Drug Tariff</p>
<p>Amantadine</p>	<p>Open the capsules (100mg) and disperse in water. The drug is very soluble</p> <p>50mg/5ml oral solution is available but expensive</p>
<p>Amiloride</p>	<p>Crush the tablets and disperse in water. Different brands of amiloride tablets may disperse in water at notably different rates</p> <p>Oral solution 5mg/5ml is available but expensive</p>
<p>Amiodarone</p>	<p>Crush the tablets and mix with water for administration or disperse in water (tablets disperse within 5 minutes without crushing). They must be administered immediately. They taste bitter and can be mixed with fruit juice to increase palatability</p> <p><b>UNLICENSED</b> 50mg/5ml and 100mg/5ml oral suspension included in Part VIII B of Drug Tariff. Minimum quantity 100ml</p>
<p>Amitriptyline</p>	<p>Crush the tablets and disperse in water. They taste bitter Enteral tubes: Film coating may block the enteral tube if not broken up properly so crush well</p> <p>If administered directly into the jejunum (i.e., through an NJ, PEJ, or PEGJ tube), monitor for increased systemic effects. Amitriptyline has a high level of first pass metabolism, and when administered into the jejunum, can have increased absorption leading to greater clinical effects and adverse effects</p> <p>Oral solution. Preferred strength is 25mg/5ml or 50mg/5ml. AVOID 10mg/5ml as very expensive compared to other strengths (for 10mg dose consider giving 1ml of 50mg/5ml)</p>

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Amlodipine	<p>Disperse the tablets in water (tablets disperse within 5 minutes) and use immediately as light sensitive There is a licensed oral solution but very expensive There are two strengths available 5mg/5ml and 10mg/5ml <b>The preferred option is 10mg/5ml due to cost</b> <b>The solution is licensed for enteral feeding tubes terminating in the stomach. Flush the feeding tube with 20ml of water after the dose has been given if using liquid. It is not recommended for use with NJ/PEJ/PEGJ tubes – for these use the tablets.</b></p> <p><b>This is the only calcium channel blocker that has a licensed liquid or a tablet that disperses in water for enteral administration</b></p>
Apixaban	<p>Crush the tablets and disperse in 60ml water or in glucose 5% for administration. Licensed for administration through nasogastric tubes only, use through other tubes would be off label.</p> <p>The crushed tablets can also be dispersed in apple juice or apple puree for oral administration</p>
Aripiprazole	<p>Orodispersible tablets are available and the most cost-effective option</p> <p>1mg/ml oral solution is available and should be used for titrating dose up to 10mg day and then switch to orodispersible tablets</p>
Atenolol	<p>Crush the tablets well and disperse in water to prevent tube blockage, give immediately and protect from light</p> <p>There is an oral liquid 25mg/5ml available which is relatively cheap 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</p>

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Atorvastatin	<p>The tablets can be crushed and dispersed in water. Atorvastatin tablets are not very soluble, and a residue may be left, so take care to ensure the complete dose is administered. If giving via enteral tubes take care to flush well after dosing as this may block the tubes.</p> <p>Give immediately as light sensitive</p> <p>Consider a combination of 10, 20, and 40mg tablets</p> <p>For swallowing difficulties consider 10mg or 20mg chewable tablet, but this is less cost effective than crushing tablets.</p> <p>There is a licensed 20mg/5ml oral suspension SF, but this is not recommended as not cost effective and unsuitable for enteral tube administration.</p> <p><b>UNLICENSED</b></p> <p>Oral solution 10mg/5ml is available included in Part VIII B of Drug Tariff minimum quantity 150ml. There is no information regarding administration via enteral tubes, so it is not recommended. It is less cost effective compared to crushing tablets or prescribing the chewable tablets.</p> <p>Oral suspension 10mg/5ml is also available but it more expensive than the oral solution so not recommended.</p>
Azathioprine	<p>Do not crush the tablets as they have a film coating protecting the <b>cytotoxic</b> medication</p> <p><b>UNLICENSED</b></p> <p>Various liquid presentations and strengths are listed under Part VIIB of the drug tariff. Currently (June 22) the most cost effective is 100mg/5ml oral suspension (not solution) but consider checking up to date drug tariff costs before initiating as this may be subject to change on a frequent basis.</p> <p>Carers handling the suspension or solution should wear gloves in case of contact with the medication</p>
Baclofen	<p>Some tablet brands will disperse in water. There is a licensed liquid available. The 5mg/5ml is more cost effective than 10/5ml</p> <p>The oral solution is very viscous and may block enteral tubes. It can be diluted in water. At higher doses the sorbitol content of the liquid may cause diarrhoea in which case the dispersed tablets are preferable.</p>
Bendroflumethiazide	<p>Disperse the tablets in water and administer orally or via enteral tube.</p> <p><b>UNLICENSED</b></p> <p>Oral solution 2.5mg/5ml minimum quantity 150ml included in Part VIII B of Drug Tariff is available but more expensive</p>



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Betahistine hydrochloride	The tablets can be crushed and mixed with water for administration. The drug is very soluble <b>UNLICENSED</b> 8mg/5ml oral suspension minimum quantity 200ml included in Part VIII B of Drug Tariff is available but there is no data available for suitability via enteral tubes
Bisoprolol	. The tablets readily disperse in water in 1-5 minutes depending on their strength. The lower strengths disperse readily within 5 minutes, but the higher strengths may need to be crushed prior to administration in water. Consider switching to licensed atenolol liquid <b>UNLICENSED</b> Various liquid presentations and strengths are listed under Part VIIB of the drug tariff. Currently (June 22) the most cost effective is 2.5mg/5ml or 5mg/5ml oral solution (not suspension) but consider checking up to date drug tariff costs before initiating as this may be subject to change on a frequent basis.
Bumetanide	Crush the tablets and mix with water prior to administration Licensed oral solution 1mg/5ml SF. Is available but very expensive so not recommended. If a liquid is required, consider switching to licensed furosemide 50mg/5ml liquid if appropriate. In general bumetanide 1mg = 40mg furosemide.
Candesartan cilexetil	Crush the tablets and mix with water prior to administration. They disperse in water without crushing within 5 minutes. No liquid preparation is available.
Captopril	The tablets will disperse in water in one to five minutes.  NB. For enteral tubes: A fine powder sediment may be left, so flush well after each dose. LICENSED liquid available, but expensive

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Carbamazepine	<p>Use the liquid for enteral feeding tubes and swallowing difficulties but please note the below information and equivalent doses before changing formulation of carbamazepine:</p> <p>The MHRA has issued guidance recommending that (where possible) patients on carbamazepine (when used for seizures) are maintained on a specific manufacturer's product, due to variability in product characteristics which may lead to a loss of seizure control when switching between brands / manufacturers. When managing patients with enteral tubes or swallowing difficulties it may not be possible to maintain the patient on their previous preparation due to the need to change to an appropriate formulation. However, all product switches should be carried out with care and close monitoring, and where possible patients should be maintained from then onwards on a single manufacturer's product as per: –</p> <p><a href="https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products">https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products</a></p> <p><b>Equivalent doses</b></p> <p>400mg MR tablets BD = 200mg QDS liquid</p> <p>Suppositories are available but very expensive. 100mg of liquid/tablets = 125mg suppository and they have a maximum license of treatment of 7 days – there may be a risk of rectal irritation if the suppositories are used for longer than this. The suppositories have a maximum licensed dose of 1g/day as the dose absorption from rectal doses higher than 300mg is not consistent. It should usually be possible to obtain therapeutic levels within the licensed dosage range. Dilute the liquid – 100mg/5ml with an equal volume of water before administration to prevent adsorption to the feeding tube.</p>
Carbimazole	<p>Crush the tablets and disperse in water for administration</p> <p>Consider using 5mg tablets for doses of 5mg, 10mg and 15mg</p> <p><b>UNLICENSED</b></p> <p>Oral suspension 10mg/5ml available (minimum quantity 150ml) included in Part VIII B of Drug Tariff. There is no information regarding administration via enteral tubes so it is advised to use the tablets for this.</p>
Carbocisteine	<p>Consider acetylcysteine 600mg effervescent tablets as an alternative (see separate entry)</p> <p>Licensed carbocisteine 250mg/5ml oral solution is the most cost effective option currently. The sugar free version is more expensive.. The 750mg/10ml sugar free sachets are another alternative.</p> <p>Consider lowering dose from 2.25g daily in divided doses to 1.5g daily in divided doses if clinically appropriate.</p>

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Carvedilol	<p>Disperse the tablets (tablets disperse within 5 minutes) and use immediately            Enteral tubes: If administered directly into the jejunum (i.e. through an NJ, PEJ, or PEGJ tube), monitor for increased systemic effects. Carvedilol has a high level of first pass metabolism and can have increased absorption leading to greater clinical effects and adverse effects            Giving carvedilol with feeds may help to decrease the risk of orthostatic hypotension by reducing the rate at which the medication is absorbed  <b>UNLICENSED</b>            Oral suspension 5mg/5ml is available included in Part VIIIB of Drug Tariff minimum quantity 100ml There is no information regarding the use of this via enteral tubes</p>
Chlorothiazide	<p>The tablets are no longer available  <b>UNLICENSED</b>            Oral suspension is still available included in Part VIIIB of Drug Tariff. Consider using the 250mg/5ml oral suspension (minimum quantity 50ml) or 200mg/5ml (minimum quantity 150ml) if possible due to cost</p>
Chlorpromazine	<p>Use the 25mg/5ml oral solution. The tablets should not be crushed as may cause contact sensitisation if crushed            Chlorpromazine has been reported as being incompatible with some enteral feeds, so ensure enteral feeding tubes are flushed well before and after each dose</p>
Cimetidine	<p>Use the syrup 200mg/5ml and dilute with an equal volume of water if administered via enteral tube. There may be reduced absorption when administered directly into the jejunum.            There is no specific data for the sugar free oral solution.            Consider alternative H2 receptor antagonist or a PPI e.g., opening omeprazole capsules</p>
Citalopram	<p>Use the oral drops 40mg/ml. The bottle should be inverted, and the drops will flow automatically - do not shake the bottle            8 drops (16mg) is equivalent to 20mg tablets            16 drops (32mg) is equivalent to 40mg tablets            The tablets can be crushed if the liquid is unavailable. They taste unpleasant. Flush well following administration via enteral tube</p>

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Clindamycin	<p>First line – change to alternative antibiotic available as a liquid or dispersible tablet if clinically appropriate The capsules can be opened and the contents dispersed in water and given immediately Avoid using 300mg capsules and use <b>2 x 150mg</b> due to cost The capsule contents taste extremely unpleasant and may be unpalatable for oral administration in patients with swallowing difficulties but can be mixed with grape juice or maple syrup <b>UNLICENSED</b> 75mg/5ml oral suspension minimum quantity 100ml is available included in Part VIII B of Drug Tariff</p>
Clobazam	<p>Disperse the tablets in water (tablets disperse within 5 minutes). Flush well via enteral tubes. Accord and Frisium tablet brands are licensed to be crushed and mixed in apple sauce and given to patients with swallowing difficulties. There is no information regarding the licensed oral suspension administered via enteral tubes. The tablets have an unpleasant taste if dispersed and taken orally. A licensed suspension is available at both 10mg/5ml and 5mg/5ml, but the 10mg/5ml strength is the most cost-effective choice. Extra monitoring may be required during the formulation switch re MHRA warning – <a href="https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products">https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products</a></p>
Clomipramine	<p>Open the capsules and disperse in water prior to administration Enteral tubes: If administered directly into the jejunum (i.e., through an NJ, PEJ, or PEGJ tube), monitor for increased systemic effects. Clomipramine has a high level of first pass metabolism, resulting in an increased absorption leading to greater clinical effects and adverse effects <b>UNLICENSED</b> Oral suspension 50mg/5ml is available included in Part VIII B of Drug Tariff minimum quantity 100ml.</p>
Clonazepam	<p>The oral solution is licensed to administer 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. Do not mix with water prior to administration orally or via an enteral tube as this may cause the drug to precipitate out. If used as epilepsy treatment, a product change poses a risk of fits <a href="https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products">https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products</a> <b>UNLICENSED</b> Oral drops 2.5mg/ml minimum quantity 10ml in Part VIII B of Drug Tariff.</p>

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Clonidine	LICENSED 50micrograms/5ml sugar free oral solution available - expires 30 days after opening. The tablets have been crushed by some centres, but there is little information on this
Clopidogrel	Disperse the tablets in water prior to administration (tablets disperse within 5 minutes). There is no information regarding administration of the <b>unlicensed</b> oral solution or suspension via enteral tubes  <b>UNLICENSED</b> 1mg/1ml oral suspension & 75mg/5ml oral suspension minimum quantity 100ml and 75mg/5ml oral solution minimum quantity 150ml are available included in Part VIII B of Drug Tariff . Consider using 75mg/5ml oral <b>solution</b> as cost-effective option
Co-beneldopa (benserazide/levodopa)	Dispersible tablets. They have a faster action and a shorter duration than MR capsules – a direct substitution between the two cannot occur. If changing from IR capsules a direct changeover can occur but patient must be monitored due to altered bioavailability. Consider adding a small prn dose to cover any unexpected “on-off” effects Do not open the capsules (MR or plain) Enteral tubes: Give at the same time each day in relation to enteral feeds and increase monitoring if feed changes. Drug effect may be unpredictable in patients with enteral tubes terminating in the jejunum.
Co-careldopa	The standard Sinemet® tablets will disperse in water for administration or convert to co- <u>beneldopa</u> dispersible tablets for administration via enteral tubes. Use immediately as the drug will oxidise. Do not crush the MR (CR) tablets Consider switching to co- <u>beneldopa</u> dispersible tablets for patients with swallowing difficulties. Conversions suggested in NEWT are: Sinemet 62.5mg to Madopar 62.5mg dispersible Sinemet 110mg to Madopar 125mg dispersible Sinemet plus 125mg to Madopar 125mg dispersible Sinemet 275mg to 2 x Madopar 125mg dispersible  <b>UNLICENSED</b> 12.5mg/50mg/5ml oral suspension & 25mg/100mg/5ml oral suspension minimum quantity 100ml are available included in Part VIII B of Drug Tariff.

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Codeine phosphate	Dilute the linctus 15mg/5ml SF or the oral solution 25mg/5ml before administration orally or via enteral tube. Consider ongoing need for codeine or consider swapping to co-codamol effervescent tablets
Cyclizine	Switch to alternative anti-emetic available as a liquid e.g. <ul style="list-style-type: none"> <li>- promethazine,</li> <li>- metoclopramide (short term only) or</li> <li>- domperidone (MHRA warning)</li> <li>- prochlorperazine syrup</li> </ul> Cyclizine Tablets can be crushed and dispersed in water. Protect from light. They have a bitter taste. <b>Unlicensed</b> Oral suspension 50mg/5ml included in part VIII B of the drug tariff but expensive so avoid if possible
Dabigatran	Do not open the capsule as the shell is specially formulated to release slowly at the correct point in the gastrointestinal tract. The pellets inside the shell are designed to create an acidic micro-environment to improve drug dissolution and absorption. Increased bioavailability of the drug, with a risk of increased side effects (i.e., bleeding) can occur. Switch to alternative NOAC – edoxaban, apixaban or rivaroxaban
Dantrolene	The capsules can be opened, and the contents dispersed in water for administration or acidic fruit juice (e.g., orange) for both enteral tubes and swallowing difficulties.  <b>Unlicensed</b> Oral suspension 10mg/5ml, 100mg/5ml and 25mg/5ml (all minimum quantity 100ml) included in part VIII B of the drug tariff but expensive so avoid if possible (especially 10mg/5ml preparation)
Desmopressin	New licensed oral solution is available. It is more cost effective than crushing the tablets. Solution should be preferred for swallowing difficulties.  Desmopressin tablets can be crushed and mixed with water for administration.

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Dexamethasone	<p>LICENSED liquid available, various strengths and manufacturers. Expiry once opened 1 to 3 months depending on manufacturer. Use the most cost-effective option.</p> <p>LICENSED soluble tablets also available. It may be preferable to use soluble tablets rather than the liquid for intra-jejunal administration. No preparations are currently licensed to go down enteral tubes.</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 carer</p>
Diazepam	<p>For enteral administration: Dilute the oral solution with water before administration to reduce viscosity and tube binding. Absorbed onto long PVC tubes resulting in significant drug loss and can cause tube blockage.</p> <p>For swallowing difficulties: Use the syrup or the oral solution.</p> <p>No information is available for oral suspension</p>
Diclofenac	<p>This should only be prescribed after careful consideration for patients with significant risk factors for cardiovascular events (MHRA)</p> <p>If NSAID is required, consider switching to ibuprofen or naproxen (see individual entries). Diclofenac suppositories are available for use in acute situations.</p> <p><b>Unlicensed</b> 50mg/5ml oral suspension minimum quantity 150ml is available included in Part VIII B of Drug Tariff but is not a cost-effective option</p>

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Digoxin	<p>Use the oral solution but do not dilute and note conversion information: 62.5mcg tablets = 50mcg(1ml) elixir</p> <p>Alternatively, crush and disperse the tablets in water. Suitable for patients with enteral tubes delivering to the jejunum if osmotic diarrhoea is a problem.</p> <p>Digoxin absorption is believed to occur primarily in the duodenum and the proximal jejunum. Absorption may therefore be reduced if it is administered via naso-jejunal tube or jejunostomy. The clinical significance of this is unclear. There have been some reports of failure to achieve therapeutic serum levels in patients with small intestine malabsorption or short bowel syndrome. Monitor effect and consider checking drug levels if necessary. The elixir has a high osmolality</p> <p>Can interact with feeds. Flush well before and after each dose</p>
Dihydrocodeine	<p>Do not crush the MR tablets</p> <p>Consider switch to alternative analgesic</p>



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<p>Diltiazem</p>	<p>Where clinically appropriate, consider changing to an alternative once daily calcium-channel blocker such as amlodipine (but note that this doesn't offer the rate-control effects of diltiazem). All tablets and capsules are labelled as modified-release; however, the 60mg generic preparation is not slow-release and can be crushed. Note: Patients on once or twice-daily modified-release preparations may need to be converted onto three-times-daily doses of the generic preparation. Viazem<sup>®</sup> XL and Adizem<sup>®</sup> MR capsules can be opened for administration via wide-bore enteral feeding tubes. The manufacturers of Adizem<sup>®</sup> capsules warn that narrow bore feeding tubes are extremely likely to be blocked by capsule contents, which should not be crushed. Dilzem<sup>®</sup> SR and XL capsules can be opened for administration via enteral feeding tubes. The capsule contents should not be crushed. Slozem<sup>®</sup> capsules can be opened for administration via enteral feeding tubes. They may block narrow-bore tubes (minimum recommended 12Fr). The capsule contents should not be crushed. Tildiem<sup>®</sup> LA capsules can be opened and the pellets removed, but the manufacturers do not recommend this so do not use For oral administration the MR capsules have been opened and the contents mixed with soft food for administration. Do not crush the capsule contents <b>Unlicensed</b> Diltiazem 60mg/5ml oral suspension is available included in part VIII B of the drug tariff minimum quantity 100ml. There is no information on administering through enteral feeding tubes.</p>
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Dipyridamole	<p>Enteral tubes - For patients with wide-bore tubes the capsules can be opened and contents dispersed in water. Do not crush the granules. Flush well as there is a potential for the granules to block enteral feeding tubes.</p> <p>Enteral dipyridamole should be given on an empty stomach, so enteral feeds must be withheld for half an hour before and half an hour after each dose. Seek advice from dietician</p> <p>For swallowing difficulties. 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 instructions</p> <p>A dosage adjustment is required when switching from modified-release capsules to suspension.</p> <p>200mg MR capsules twice a day = 100mg suspension four times a day</p> <p>There is a difference in indication between the MR preparation and the standard release tablets and liquid. Secondary prevention of occlusive vascular events recommends the use of MR dipyridamole. If enteral tube blockage is a problem the standard release tablets can be used. Avoid using the liquid if possible as very expensive</p> <p>Consider changing to clopidogrel from dual therapy with aspirin and dipyridamole where appropriate</p>
Docusate sodium	Docusate 12.5mg/5ml or 50mg/5ml oral solution sugar free (consider higher strength and less volume)
Domperidone	<p>Use the suspension 1mg/ml for enteral tubes and swallowing difficulties.</p> <p>For enteral tubes dilute with an equal amount of water before administration</p>
Donepezil	<p>Film-coated tablets can be crushed and mixed with water for administration. These have a bitter taste for oral administration. The orodispersible tablets are a cheaper option than the oral solution.</p> <p>Consider continuing need if end of life</p>
Doxazosin	<p>The standard tablets disperse readily in de-ionised water for administration (e.g., water for injection, water for irrigation). Do not use tap water, as the chloride ions in the water will cause the drug to precipitate out. Use de-ionised water for flushing enteral feeding tubes following each dose. Using plastic ampules rather than glass is preferred to reduce the risk of glass shards in the solution.</p> <p>The modified-release tablets are not suitable for enteral tube administration and should not be crushed.</p> <p><b>Unlicensed</b></p> <p>UNLICENSED 4mg/5ml oral <b>solution</b> included in Part VIII B of Drug Tariff</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 or the suspension via enteral feeding tubes has been located.</p>

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Doxycycline	<p>Use the dispersible tablets. Do not open the capsules as the contents are irritant. Doxycycline binds to calcium ions and may have reduced absorption when given via enteral feeding tubes. The higher end of the standard dosage range should be prescribed Absorption and serum levels of doxycycline have been shown to decrease if it is taken with milk, therefore enteral feeds should be stopped for two hours before and one hour after each dose <b>Unlicensed</b> suspension (special) there is no information on administering the suspension via enteral feeding tube available.</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.  No information on giving duloxetine via enteral feeding tubes has been located.</p>
Edoxaban	<p>The tablets can be crushed and mixed with water for administration via enteral tubes The tablets can be crushed and mixed with water or apple sauce for oral administration</p>
Enalapril	<p>The tablets can be crushed and dispersed in water for oral or enteral tube administration. Some brands will disperse without crushing within 5 minutes. If swallowed it may have a bitter taste Consider changing to another ACE inhibitor if appropriate <b>UNLICENSED</b> 1.25mg/5ml oral suspension minimum quantity 150ml; 10mg/5ml oral suspension minimum quantity 100ml; 5mg/5ml oral solution minimum quantity 150ml; and 5mg/5ml oral suspension minimum quantity 75ml are available included in Part VIII B of Drug Tariff. 10mg/5ml strength is most cost-effective option.</p>
Ergocalciferol	<p>There is no information on giving this medicine via enteral feeding tubes.  <b>UNLICENSED</b> 1,000 units/5ml oral solution minimum quantity 100ml; 10,000 units/5ml oral solution minimum quantity 100ml; 100,000 units/5ml oral solution minimum quantity 20ml; 3,000 units/ml oral solution minimum quantity 60ml and 6,000 units/5ml oral solution minimum quantity 100ml are available included in Part VIII B of Drug Tariff.</p>

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Escitalopram	<p>Tablets can be dispersed in water for administration. They disperse immediately. If given via enteral tube flush well as the tablets are poorly soluble</p> <p>Oral drops 20mg/ml are available which can be mixed with water, orange juice or apple juice to aid administration (less cost effective option)</p>
Esomeprazole	<ol style="list-style-type: none"> <li>1. For swallowing difficulties consider swapping to standard omeprazole capsules. The regular omeprazole capsules can be sucked (but not chewed) or opened and mixed with water or fruit juice (consider 2 x 20mg instead of 1 x 40mg) as most cost effective.</li> <li>2. Esomeprazole tablets and some brands of capsules can be dispersed in non-carbonated water for administration. They should not be dispersed in any other liquid.</li> <li>3. The pellets remaining after the tablet disperses / after the capsule is opened should not be crushed. The 20mg tablet should be administered by a size 8 French tube or larger. For Patients with fine-bore tubes consider switching to lansoprazole fast tabs.</li> <li>4. Granules for oral suspension are available and are licensed for administration via gastric tubes but expensive</li> </ol>
Ethosuximide	<p>Use the syrup</p> <p>Enteral administration: dilute with water immediately before administration if necessary to reduce the viscosity.</p>
Felodipine	<p>Felodipine tablets should not be crushed and are therefore not suitable for enteral feeding tube administration or for those with swallowing difficulties. Consider switching to amlodipine</p>
Ferrous fumarate/ sulfate	<p>Convert all salts to Ferrous fumarate liquid 140mg/5ml.</p> <p>Via enteral tubes dilute with water immediately prior to administration to reduce the viscosity of the liquid.</p> <p>Iron absorption is greatest in the duodenum and the proximal jejunum but does occur along the entire gastrointestinal tract. Higher doses may be needed when given through enteral tubes terminating in the jejunum.</p> <p>Some iron preparations may be incompatible with enteral feeds, so ensure enteral feeding tubes are flushed well before and after each dose</p>

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Fexofenadine	<p>Consider switching to an alternative antihistamine available as a liquid, e.g., loratadine 5mg/5ml Tablets can be crushed and mixed with water for administration, and they will disperse in around five minutes without crushing. Enteral tubes: Fexofenadine should be given on an empty stomach, so withhold enteral feeds for half an hour before and half an hour after administration</p>
Finasteride	<p><b>Women who are or who may become pregnant should not handle crushed, broken, or dissolved tablets.</b> 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) For enteral feeding tube, flush well after each dose as the drug is insoluble.</p>
Flecainide	<p>Crush and disperse the tablets in de-ionised water (e.g. water for injection, water for irrigation). Do not use tap water. May have an anaesthetic effect on the tongue so care should be taken with hot meals after administration If giving via enteral feeding tube, always flush with de-ionised water, and do not mix with alkali solutions, sulphate, phosphate, or chloride ions. Do NOT mix this drug with other medications prior to administration. <b>UNLICENSED</b> 10mg/5ml oral suspension minimum quantity 100ml; 25mg/5ml oral suspension minimum quantity 300ml and 25mg/5ml oral suspension minimum quantity 200ml are available included in Part VIII B of Drug Tariff 25mg/5ml oral <b>suspension</b> is most cost effective.</p>
Fluconazole	<p>Open the capsules and mix the contents with water for administration Enteral tubes: If the feeding regimen allows, give enteral fluconazole during a feeding break. However if feeding is continuous it is not necessary to compromise feeding unless the patient is on Jevity®, in which case the risk of subtherapeutic treatment should be weighed against the benefits of feeding. If the feed is withheld, it should be stopped for one hour before and one hour after each dose of fluconazole. Licensed oral suspension 200mg/5ml and 50mg/5ml are expensive.</p>
Fludrocortisone acetate	<p>100mcg tablets will disperse in water within one minute Flush the feeding tube well after administration <b>UNLICENSED</b> 100mcg/5ml oral suspension minimum quantity 100ml and 50mcg/5ml oral suspension minimum quantity 100ml are available included in Part VIII B of Drug Tariff The 100mcg/5ml is the most cost effective.</p>

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Fluoxetine	Use the dispersible 20mg tablets in preference to the 20mg/5ml oral solution (not sugar free). If using the liquid, dilute with the same volume of water for administration via enteral tube. Avoid the SF version as more expensive
Folic acid	Consider whether still required as levels usually in range within 3-4 months The tablets have been crushed and mixed with water for administration Enteral tubes: The oral solution 2.5mg/5ml can be diluted with water to reduce the osmolality if desired when giving into the jejunum, however this is outside the marketing authorisation Do not use 5mg/5ml as expensive
Furosemide	Use the licensed oral solution for administration via NG and PEG tubes (Frusol®) The solution does not need to be diluted before administration. Consider 50mg/5ml strength as most cost-effective option.
Gabapentin	Oral solution 50mg/ml SF is licensed for administration via NG/PEG enteral feeding tubes which terminate in the stomach. There is no information for administration of the solution via NJ/PEJ/PEGJ tubes The capsule can be opened and contents dissolved in water but must be given immediately (gabapentin has limited stability in water). They can be opened and sprinkled on food or given in fruit juice to mask their unpleasant taste. They must be given immediately as the drug is rapidly hydrolysed. <b>UNLICENSED</b> Various strengths of unlicensed liquid preparations are available, but these are less cost effective than the licensed liquid or opening capsules.
Galantamine	Use the licensed oral solution Enteral tubes: The 20mg/5ml solution should be diluted in water before administration (licensed for administration via enteral tubes). Do not use the MR tablets
Glibenclamide	Consider switching to insulin The tablets will disperse in water within 1-5 minutes Enteral tubes: BMs should be monitored if giving via enteral tube into the jejunum

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<p>Gliclazide</p>	<p>Consider switching to insulin The tablets can be crushed but are practically insoluble. Mix with water or orange juice for administration – preferred option via enteral tubes Do not crush the MR formulation 30mg MR tablet = 80mg standard tablet Monitor BM when altering formulation/crushing tablets <b>UNLICENSED</b> 40mg/5ml oral suspension minimum quantity 100ml and 80mg/5ml oral suspension minimum quantity 150ml is available included in Part VIII B of Drug Tariff - 80mg/5ml is the cost-effective option. Should only be considered for patients with swallowing difficulties.</p>
<p>Glycopyrronium bromide</p>	<p>Consider switching to hyoscine hydrobromide patches if appropriate. LICENSED glycopyrronium oral solutions available and is the preferred option over tablets. (1mg/5ml, Colonis (expires 1 month after opening) &amp; 2mg/5ml Sianalar (expires 2 months after opening). Sianalar 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. Several unlicensed liquids available in part VIII B of the drug tariff and are considerably cheaper than the licensed products – consult current drug tariff for most cost-effective choice.</p>
<p>Griseofulvin</p>	<p>Review indication and switch to alternative antifungal (e.g., terbinafine) as tablets are very insoluble and not suitable for swallowing difficulties or enteral tubes <b>UNLICENSED</b> 125mg/5ml oral suspension minimum quantity 100ml and 175mg/5ml oral suspension minimum quantity 100ml is available included in Part VIII B of Drug Tariff . 175mg/5ml is the most cost-effective option. Oral suspension – There is no data available as to suitability via enteral tube</p>
<p>Haloperidol</p>	<p>Use the licensed liquid either 5mg/5ml or 10mg/5ml SF oral solution</p>

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Hydrocortisone	<p>The standard-release tablets are insoluble but will disperse in water for administration within one minute When switching from modified-release tablets to immediate-release preparations, use the same total daily dose, divided and given more frequently. Monitor clinical response 'Capsules for opening' are not licensed for administration via an enteral tube and may block the enteral tube. They are less cost effective compared to dispersing the standard release tablets and are not licensed in adults. Hydrocortisone 2.5 mg Muco-Adhesive Buccal Tablets should not be used for treatment of adrenal insufficiency and particularly should never be used for treatment of adrenal crisis because of the risk of insufficient cortisol release. They are only licensed for mouth ulcers</p> <p><b>UNLICENSED</b> 10mg/5ml oral suspension minimum quantity 100ml and 5mg/5ml oral suspension minimum quantity 100ml are available included in Part VIII B of Drug Tariff and may be considered for both swallowing difficulties and enteral tubes</p>
Hydroxychloroquine	<p>200mg tablets can be crushed and dispersed in water for administration</p> <p><b>UNLICENSED</b> 200mg/5ml oral suspension minimum quantity 100ml is available included in Part VIII B of Drug Tariff.</p>
Hydroxyzine	<p>Do not use the tablets Review continued need as it should be used at the lowest effective dose and for the shortest possible duration. Consider alternative antihistamine if needed.</p> <p><b>UNLICENSED</b> 10mg/5ml oral suspension minimum quantity 100ml is available included in Part VIII B of Drug Tariff but very expensive..</p>
Hyoscine butylbromide	<p>Enteral tubes: Hyoscine butylbromide has a different effect given enterally to that when given parenterally. It is not greatly absorbed following enteral administration. It may therefore not be as clinically effective if given directly into the jejunum. Consider parenteral injection or administering the injection enterally Do not crush the tablets</p> <p><b>UNLICENSED</b> 10mg/5ml oral solution minimum quantity 100ml and 10mg/5ml oral suspension minimum quantity 100ml is available included in Part VIII B of Drug Tariff . Consider using 10mg/5ml oral <b>suspension</b> as cheaper. Unlicensed oral suspension may be used for oral administration but there is no information on administering the oral suspension via enteral feeding tubes.</p>



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Hyoscine hydrobromide	<p>Consider using the patch or giving by parenteral injection. Licensed chewable tablets available The standard 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. The tablets can be dissolved in water for administration via enteral tube, but again, absorption may vary so not recommended.</p> <p><b>UNLICENSED</b> 300mcg/5ml oral solution, 300mcg/5ml oral suspension, 500mcg/5ml oral solution and 500mcg/5ml oral suspension (all minimum quantity 100ml) are available included in Part VIII B of Drug Tariff. Consider using oral suspension as cheaper</p>
Imipramine	<p>Crush the tablets and mix with water for administration. For enteral tubes flush well after dosing as the coating has the potential to block enteral feeding tubes The oral solution (25mg/5ml) is very expensive so not recommended. The drug may adsorb to the tube, so flush well after dosing. If administered directly into the jejunum (i.e. through an NJ, PEJ, or PEGJ tube), monitor for increased systemic effects. Imipramine has a high level of first pass metabolism and when administered into the jejunum can have increased absorption leading to greater clinical effects and adverse effects</p>
Indapamide	<p>Immediate release 2.5mg tablets will disperse in water within 1-5 minutes DO NOT CRUSH the SR formulations 1.5mg SR tablets = 2.5mg immediate release tablets For patients with tubes terminating in the stomach, the standard tablets can be used Administration via tubes terminating in the jejunum is not appropriate as absorption will be greatly reduced</p> <p><b>UNLICENSED</b> 2.5mg/5ml oral suspension minimum quantity 150ml is available included in Part VIII B of Drug Tariff but not cost effective.</p>
Indometacin	<p>Consider switching to an alternative NSAID. If not possible, consider the suppositories daily at night. Do not open the capsules or crush the tablets.</p> <p><b>UNLICENSED</b> 125mg/5ml oral suspension minimum quantity 100ml is available included in Part VIII B of Drug Tariff</p>

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Irbesartan	<p>Consider switching to alternative ACEi or ARB The tablets will disperse in water in around five minutes. There is no information available to indicate whether irbesartan is likely to block enteral feeding tubes. Flush well after each dose as the drug is practically insoluble.</p>
Isosorbide mononitrate	<p>Crush the standard-release tablets and disperse in water. They may have an increased rate of absorption and therefore increased side effects. Consider reducing dose and increase frequency Modified-release tablets and capsules should not be crushed or opened. Consider GTN transdermal patches <b>UNLICENSED</b> 20mg/5ml oral suspension minimum quantity 100ml is available included in Part VIII B of Drug Tariff (Nov 20). Avoid as expensive</p>
Itraconazole	<p>Consider oral solution 50mg/5ml To be given on an empty stomach. The enteral feed must be withheld for two hours before and one hour after each dose. Contact dietician if there is no break in the feeding regime Do not use the capsule if via enteral tubes due to tube blockage.</p>
Lacosamide	<p>This is only to be used following advice from consultant/secondary care specialist. There are no reports of being given via enteral tubes For swallowing difficulties use the syrup</p>
Lansoprazole	<ol style="list-style-type: none"> <li>1. For swallowing difficulties consider swapping to standard omeprazole capsules. The regular omeprazole capsules can be sucked (but not chewed) or opened and mixed with water or fruit juice (consider 2 x 20mg instead of 1 x 40mg) as most cost effective.</li> <li>2. For enteral feeding tubes, use lansoprazole orodispersible tablets. Zoton (lansoprazole) Fastabs and lansoprazole orodispersible tablets are licensed for administration via nasogastric feeding tubes.</li> <li>3. <b>UNLICENSED</b> 15mg/5ml oral suspension; 30mg/5ml oral suspension; 5mg/5ml oral suspension (all minimum quantity 100ml) are available included in Part VIII B of Drug Tariff (Nov 20). These are not cost effective and not recommended.</li> </ol>

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Levetiracetam	<p>The oral solution 100mg/ml is preferred formulation for swallowing difficulties and can be used for administration via enteral tube</p> <p>The granules are licensed for administration via enteral feeding tube but significantly more expensive. The granules must 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 each time.</p>
Levomepromazine	<p>Consider switching to alternative antipsychotic if appropriate (e.g.: haloperidol, chlorpromazine, sulpiride available as LICENSED liquids)</p> <p>Disperse the 25mg tablets in water (tablets disperse immediately).</p> <p><b>UNLICENSED</b></p> <p>Oral suspension 2.5mg/5ml minimum quantity 100ml is available included in Part VIII B of Drug Tariff.</p> <p>Oral suspension 6mg/5ml minimum quantity 100ml is also included in Part VIII B of Drug Tariff but is very expensive; avoid if possible.</p>
Levothyroxine	<p>Crush and disperse the tablets in water (tablets should disperse within 5 minutes without crushing) for patients with swallowing difficulties or via enteral tubes</p> <p>Oral solution. Licensed for NG tubes only. Not licensed for enteral feeds via PEG and absorption is reduced when administered through enteral tubes terminating in the jejunum. Monitor thyroid function, consider increasing dose if necessary, and take care when switching between jejunal and gastric-terminating tubes.</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</p> <p>If oral solution is required consider switching to most cost-effective strength for desired dose. Shelf life – 28 days.</p> <p>Higher strength solutions are more cost-effective than lower strength if appropriate.</p>
Linagliptin	<p>No information available for administration via enteral tube.</p> <p>Consider continued need as DPP4i should only be continued if there is a reduction of <math>\geq 5.5</math>mmol/mol (0.5% points) in HbA1c in 6 months. Consider other antihyperglycaemic drugs.</p>
Lisinopril	<p>Disperse the tablet in water - very soluble</p> <p><b>Unlicensed</b></p> <p>Lisinopril oral solution 20mg/5ml minimum quantity 100ml and Lisinopril oral suspension 20mg/5ml minimum quantity 100ml are available included in Part VIII B of Drug Tariff (Nov 20) consider using oral <b>solution</b> as cheaper; liquid 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 necessary</p>

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Lofepamine	<p>Consider alternative tricyclic antidepressant (e.g., amitriptyline) as the tablets are not suitable for crushing and the liquid is very expensive.</p> <p>licensed suspension 70mg/5ml is available. Do not dilute the suspension with water as it may destabilise the suspension.</p> <p>Enteral tubes: Flush well after administration. 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 and when administered into the jejunum, can have increased absorption leading to greater clinical effects and adverse effects.</p>
Loperamide Hydrochloride	<p>Opening capsules is not recommended as it can change the bioavailability and will block feeding tubes.</p> <p>For short term use consider licensed orodispersible loperamide tablets. The orodispersible tablet should be placed on the tongue. The tablet will dissolve and is to be swallowed with saliva. No liquid intake is needed for the orodispersible tablet. There is no information on the use of these via feeding tubes therefore this is not recommended. For long term use consider an unlicensed liquid as this is more cost effective.</p> <p><b>UNLICENSED</b></p> <p>Loperamide 25mg/5ml oral solution (minimum quantity 100ml) and Loperamide 25mg/5ml oral suspension (minimum quantity 100ml) available included in Part VIII B of Drug Tariff (Nov 20). If the unlicensed liquid is required, consider using Loperamide 25mg/5ml oral suspension as cheaper</p>

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<p>Lorazepam</p>	<p>Disperse the tablets in water prior to administration for both enteral tube administration and patients with swallowing difficulties.</p> <p>The tablets may also be effective given sublingually, but the patient must have a sufficiently moist mouth for sublingual absorption to occur.</p> <p>Licensed Lorazepam 1mg/ml oral solution is available but there is no information for administration via enteral tubes and this is less cost effective.</p> <p><b>UNLICENSED</b></p> <p>Lorazepam 1mg/5ml oral solution (minimum quantity 150ml)  Lorazepam 1mg/5ml oral suspension (minimum quantity 100ml)  Lorazepam 500microgram/5ml oral solution (minimum quantity 150ml)  Lorazepam 500microgram/5ml oral suspension (minimum quantity 100ml)</p> <p>are available included in Part VIII B of Drug Tariff (Nov 20).  Consider using Lorazepam 500microgram/5ml oral solution as most cost-effective options</p>
<p>Losartan</p>	<p>Consider switch to alternative ACEi or ARB (see separate entries) or use the unlicensed liquid. For enteral tube administration the tablets can be crushed</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.</p> <p><b>UNLICENSED</b></p> <p>Losartan 50mg/5ml oral suspension is available included in Part VIII B of Drug Tariff.</p>

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Lymecycline	No information available. Consider switching to doxycycline.
Magnesium	<p>1st line: Co-magaldrox liquid 10-20ml QDS, preferred brand is Mucogel (10ml Mucogel = 6.6mmol Mg). See UHDB shared care pathology guidelines at <a href="#">Shared Care Pathology guidelines   UHDB Trust   University Hospitals of Derby and Burton NHS</a></p> <p>2nd line (only if intolerant of co-magaldrox): Licensed chewable tablets (Neomag 1 tablet=4mmol Mg).</p> <p><b>UNLICENSED</b></p> <p>Magnesium glycerophosphate (magnesium 97.2mg/5ml (4mmol/5ml)) oral solution (minimum quantity 200ml)</p> <p>Magnesium glycerophosphate (magnesium 97.2mg/5ml (4mmol/5ml)) oral suspension (minimum quantity 100ml)</p> <p>Are available included in Part VIII B of Drug Tariff</p>
Mebeverine	<p>LICENSED sugar-free oral suspension available (50mg/5ml), but very expensive. Consider alternative product e.g., hyoscine butylbromide</p> <p>Mebeverine 135mg tablet is equivalent to mebeverine 150mg liquid</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>

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<p>Melatonin</p>	<p>Crush and disperse the 3mg immediate release tablets and give orally or via enteral tubes</p> <p>Adaflex tablets are licensed for crushing and mixing with water.</p> <p>Circadin tablets can be crushed at which point Modified Release characteristics will be lost. Circadin® is not licensed to be given through enteral feeding tubes. However, the manufacturers state that if necessary it can be crushed (note - this would change it from a modified-release tablet to an immediate-release tablet) and mixed in 15-30mL of water for administration through enteral feeding tubes. The tube should be flushed well after administration</p> <p>There is no information on administering the oral solution via enteral feeding tubes</p> <p>For more information please see <a href="#">Melatonin_information_sheet.pdf (derbyshiremedicinesmanagement.nhs.uk)</a></p> <p>Licensed melatonin 1mg/ml SF oral solution (Colonis) may be considered if it is not possible to use crushed tablets. Maximum licensed dose is 5mg. <b>Not suitable for off-label use in children under 6 years of age due to safety concerns regarding propylene glycol content.</b></p> <p><b>UNLICENSED</b></p> <p>There are many different strengths of unlicensed liquids available in part VIII B of the drug tariff. For details of these please check the most recent up to date version of the drug tariff available here: <a href="#">Drug Tariff   NHSBSA</a> :</p> <p>If an unlicensed liquid is required, the 10mg/5ml strength is likely the most cost-effective choice and may be more cost-effective than licensed alternatives.</p>
<p>Memantine</p>	<p>Crush the tablets and disperse in water for administration. Crush well as they are film-coated. Alternatively use the 10mg/ml oral solution SF. The oral solution can be diluted in water to aid administration if necessary</p> <p>Orodispersible tablets are less cost effective so not recommended.</p>

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<p>Mercaptopurine</p>	<p><b>Cytotoxic – DO NOT CRUSH TABLETS</b></p> <p>This is a share care drug. Contact specialist team for advice.</p> <p>20mg/ml. oral suspension is available but expensive. Expiry date 56 days after opening and the bottle should be shaken vigorously for at least 30 seconds to ensure the oral suspension is well mixed.</p> <p>The manufacturers recommend that mercaptopurine is handled in accordance with local guidelines for handling cytotoxic drugs</p>
<p>Mesalazine</p>	<p><b>DO NOT CRUSH THE ENTERIC COATED TABLETS.</b></p> <p>The Pentasa<sup>®</sup> tablets will disperse in 50ml water and must be used immediately. The small beads must be swallowed whole (so therefore may not be appropriate for swallowing difficulties in patients with limited understanding or impaired ability to follow instructions). This route is only suitable for large bore-tubes or swallowing difficulties.</p> <p>Mesalazine MR granules sachets SF can be used for patients with swallowing difficulties but not for enteral feeding (Pentasa<sup>®</sup> or Salofalk). The fine beads must not be chewed therefore this method may not be appropriate for patients with limited understanding or impaired ability to follow instructions.</p> <p>Discuss with specialist team if needed who may advise changing to rectal route or to sulfasalazine liquid.</p>
<p>Metformin</p>	<p>Licensed oral solution SF 500mg/5ml</p> <p>1g/5ml or 850mg/5ml are also licensed but not recommended due to increased cost</p> <p>Note expiry – 60 days once opened</p> <p>Metformin Colonis<sup>®</sup> oral solution can be administered via a gastric, duodenal, and nasal feeding tube, that should be rinsed twice with 10 ml of water immediately after administration.</p> <p>It is not recommended to crush the tablets</p>



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Methotrexate	<p><b>Cytotoxic. – DO NOT CRUSH TABLETS</b> Licensed oral solution 2mg/ml – 35ml and 65ml size. Consider 65ml if possible - shelf life of 3 months once opened</p> <p>Consider referring to specialist team for consideration of subcutaneous route.</p>
Metoclopramide	<p>Crush the tablets and disperse in water prior to administration Licensed 5mg/5ml oral solution is also available Rosemont® metoclopramide liquid 5mg/5ml S/F is licensed for NG/PEG tube but not NJ/PEJ/PEGJ tubes. Metoclopramide has been reported as being incompatible with some enteral feeds, so flush well before and after each dose. Review continued need re MHRA warning – risk of neurological adverse effects.</p>
Metoprolol	<p>Consider switching to an alternative beta-blocker e.g., atenolol as licensed liquid available Tablets can be crushed and mixed with water for administration. They disperse very slowly. <b>Unlicensed</b> 12.5mg/5ml oral solution (minimum quantity 150ml), 12.5mg/5ml oral suspension (minimum quantity 100ml) (mix with equal volume of water to reduce viscosity via enteral tube), 50mg/5ml oral solution (minimum quantity 150ml), are available included in Part VIII B of Drug Tariff Calculate the most cost-effective option if oral solution is required.</p>
Metronidazole	<p>Enteral tubes - Crush the tablets and mix with water prior to administration. Crush well as they can break into large clumps which may block tube For swallowing difficulties use suspension. Crushing tablets is not recommended. Not to be diluted with water as this may destabilise the suspension</p>
Midazolam for status epilepticus	<p>Buccolam green on formulary after specialist initiation Existing patients on Epistatus (DNP on formulary) should be reviewed by the specialist and switched to the recommended Buccolam preparation at their next review and the patients care plan should be updated accordingly. Do not stop the Epistatus abruptly, without the patient receiving training for the Buccolam preparation.</p>
Midodrine	<p>Crush the tablets and disperse in water prior to administration orally or via enteral tubes</p>

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Mirtazapine	<p>Use the Orodispersible tablets (disperse immediately in water) for both enteral tubes and swallowing difficulties.            Avoid using the oral solution as an expensive option            Note            Mirtazapine is mostly absorbed in the duodenum resulting in an increased risk via an enteral tube terminating in the jejunum that the drug will not be fully absorbed and the patient will not receive the prescribed dosage. Review patient and consider alternative treatment.            Avoid standard tablet as when crushed it has a bitter taste and an anaesthetic effect on the mouth</p>
Modafinil	Crush the tablets and mixed with water. Use immediately due to lack of stability data
Montelukast	<p>Use chewable 4mg or 5mg tablets for swallowing difficulties, or dispersed in water for administration for enteral tubes, but withhold enteral feeds for two hours before and one hour after administration of montelukast            No information available for granules via enteral tubes but suitable for swallowing difficulties administered either directly into the mouth or mixed with a spoonful of soft food. Do not dissolve in water</p>

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Morphine	<p><b>Enteral tubes:</b> Use parenteral morphine whenever possible. Consider subcutaneous syringe drivers or switching to transdermal opiate preparations for patients with chronic pain. <u>Immediate-release preparations</u> – Morphine sulphate oral solution <u>Modified-release preparations</u> The use of controlled-release preparations of morphine via enteral feeding tubes is not recommended due to the potential for accidental morphine overdose if any of the dose is left in the tube and subsequently administered to the patient with the next use of the tube. If administration of modified-release preparations is essential, consider- MST Continus<sup>®</sup> sachets can be given, diluted with at least 30mL of water, and flushed with 15-30mL of water. Give immediately as the resulting suspension thickens Zomorph<sup>®</sup> capsules can be opened and the contents flushed down enteral feeding tubes with a diameter of 16Fr or larger with 30-50mL of water. Do not administer MXL<sup>®</sup> capsules through enteral feeding tubes, as the granules in the capsules are highly lipophilic and will clump together when in contact with water or saline.</p> <p><b>Swallowing difficulties:</b> Use the immediate-release oral solution or MST Continus<sup>®</sup> sachets. Zomorph<sup>®</sup> capsules can be opened and the contents sprinkled on food, e.g., yogurt or jam. MXL<sup>®</sup> capsules can also be opened and the contents sprinkled onto cold soft food for patients with swallowing difficulties. Note MXL are a once daily preparation Consider converting to transdermal opiates (e.g. buprenorphine, fentanyl). See BNF for conversion tables.</p>
Naproxen	<p>Consider switching to an alternative NSAID (e.g., ibuprofen) Crush standard tablets prior to administration via enteral feeding tubes but consider an alternative NSAID for patients with swallowing difficulties. Do not crush the EC tablets Avoid the effervescent tablets and the 250mg/5ml licensed liquid as very expensive If no alternative to naproxen suitable (e.g., ibuprofen liquid) use unlicensed oral suspension as more cost effective than licensed preparations: <b>UNLICENSED</b> Naproxen 200mg/5ml oral suspension (minimum quantity 100ml) is available included in Part VIII B of Drug Tariff (Nov 20).</p>
Nicorandil	<p>Tablets will disperse in water within 5 minutes and can be given orally or via enteral tube (Ikorel<sup>®</sup>). Flush well as some excipients are insoluble.</p>

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<p>Nifedipine</p>	<p>Use of immediate-release nifedipine capsules for blood pressure control is no longer recommended due to the risk of rebound hypertension and tachycardia. Consider alternative methods of blood pressure control, e.g., switching to amlodipine. Modified-release capsules (e.g., Coracten®) can be opened and the contents flushed down enteral feeding tubes for administration. Flush well after dose administration. The capsule contents should not be crushed as this will destroy their modified-release properties. There is no information on the use of Coracten in patients with swallowing difficulties. Consider alternative treatment.</p> <p>Do not open the immediate release capsules. Risk of profound drop in blood pressure if nifedipine is given incorrectly.</p> <p><b>Unlicensed</b> Oral suspension 10mg/5ml (minimum quantity 100ml) (most cost-effective option),</p> <p>Oral suspension 5mg/5ml (minimum quantity 100ml), are available included in Part VIII B of Drug Tariff Oral drops also available but these are less cost effective</p>
<p>Nitrazepam</p>	<p>Oral suspension 2.5mg/5ml available but consider reducing to stop in line with NICE guidelines. Not cost effective, consider changing to alternative treatment There is no guidance regarding crushing the tablets</p> <p><b>Unlicensed</b> 5mg/5ml oral suspension (minimum quantity 100ml) available included in Part VIII B of Drug Tariff but very expensive</p>
<p>Nitrofurantoin</p>	<p>Enteral tubes – Disperse the tablets in water (disperse within 5 minutes) prior to administration Oral solution – 25mg/5ml. Slightly viscous liquid – mix with equal volume of water. Very expensive. Consider alternative antibiotic Immediate release capsules can be opened and mixed with water. May block some enteral tubes Do not open modified release (MR) capsules</p>
<p>Nortriptyline</p>	<p>Disperse the tablets in water (disperse within 2 minutes) prior to administration. . Consider an alternative TCA Avoid 50mg tablets and use multiples of 25mg of 10mg Avoid oral solution as very expensive and no information via enteral tube (available as 10mg/5ml). If needing liquid consider alternative TCA</p>

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Olanzapine	<p>Orodispersible tablets can be placed on the tongue or dispersed in water, (or orange juice, apple juice) and given via enteral tubes or orally. It is irritant to the skin and eyes so wearing gloves is advised to avoid contact</p> <p>Sugar Free (SF) version is the cost-effective option for all strengths</p> <p>Suitable for enteral tubes but no specific data available</p> <p>Velotabs® / oral lyophilisates are JAPC DNP and very expensive so avoid</p> <p><b>UNLICENSED</b></p> <p>Olanzapine 2.5mg/5ml oral suspension (minimum quantity 70ml) available included in Part VIII B of Drug Tariff (Nov 20)</p>
Omeprazole	<ol style="list-style-type: none"> <li>1. For swallowing difficulties preferred option: The regular capsules can be sucked (but not chewed) or opened and mixed with water or fruit juice (consider 2 x 20mg instead of 1 x 40mg) as most cost effective</li> <li>2. Consider changing to lansoprazole orodispersible tablets as considerably cheaper than omeprazole orodispersible. Zoton (lansoprazole) Fastabs and lansoprazole orodispersible tablets are licensed for administration via nasogastric feeding tubes.</li> <li>3. Mezzopram dispersible tablets are licensed for use through enteral tubes. Losec MUPS are not licensed for use through enteral feeding tubes, but there is extensive experience of using them.</li> <li>4. Licensed oral suspension (10mg/5ml &amp; 20mg/5ml) is available but is expensive and has been classified by JAPC as GREY - to be used only when dispersible tablets and MUPs have been tried and not tolerated or in cases where doses cannot be safely rounded to the nearest quarter tablet. The powder for oral suspension is only licensed for administration via NG and PEG tubes (not tubes terminating in the jejunum). Review ongoing need regularly. Unlicensed liquids are a lot more cost effective so consider using these.</li> </ol> <p><b>UNLICENSED</b></p> <p>Omeprazole 40mg/5ml oral suspension (minimum quantity 100ml), Omeprazole 5mg/5ml oral suspension (minimum quantity 70ml), are available included in Part VIII B of Drug Tariff (Nov 20)</p>
Orphenadrine	<p>Oral solution 50mg/5ml. Review ongoing need giving consideration to anticholinergic burden</p>

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Oxcarbazepine	<p>Use the suspension SF 60mg/ml at the same dose as the tablets. It can be diluted with water to aid administration. Note The MHRA has issued guidance recommending that (where possible) patients on oxcarbazepine (when used for seizures) are maintained on a specific manufacturer's product, due to variability in product characteristics which may lead to a loss of seizure control when switching between brands / manufacturers. When managing patients with enteral tubes or swallowing difficulties it may not be possible to maintain the patient on their previous preparation due to the need to change to an appropriate formulation. However all product switches should be carried out with care and close monitoring, and where possible patients should be maintained from then onwards on a single manufacturer's product as per:</p> <p><a href="https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products">https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products</a></p>
Oxybutynin HCl	<p>Consider trial stopping and review continued need if appropriate</p> <p>Crush the standard tablets and mixed with water. Do not halve, crush, or chew the prolonged release tablet</p> <p>Patch – preferable option for swallowing difficulties if cannot swallow crushed tablets in water. Note dose not comparable. See BNF for dosing. Not suitable for children</p> <p>Oral solution – very expensive. Avoid but if required consider 5mg/5ml strength as most cost-effective option</p>
Pantoprazole	<p>Consider switching to lansoprazole or omeprazole as no information available as to suitability via enteral tubes or for people with swallowing difficulties</p>
Paroxetine	<p>Crush the tablets and mix with water prior to administration. They are bitter and have a slight local anaesthetic effect. Avoid 40mg strength and use 2 x 20mg</p> <p>Flush well for enteral feed as the tablets are film coated</p> <p>Licensed liquid 10mg/5ml available but less cost effective</p>
Perindopril arginine	<p>Classified DNP on formulary.</p> <p>No licensed liquid available – consider switching to alternative ACEi or perindopril erbumine (note 2.5mg perindopril arginine is equivalent to 2mg perindopril erbumine)</p>

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<p>Perindopril erbumine</p>	<p>Crush the tablets and mix with water prior to administration 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 management</p> <p><b>Unlicensed</b> 4mg/5ml oral solution (minimum quantity 150ml) and 4mg/5ml oral suspension (minimum quantity 100ml) (most cost-effective option), are available and included in Part VIII B of Drug Tariff</p>
<p>Phenobarbital</p>	<p><u>Changing formulations / product manufacturer</u> The MHRA has issued guidance recommending that patients on phenobarbital (when used for seizures) are maintained on a specific manufacturer's product, due to variability in product characteristics which may lead to a loss of seizure control when switching between brands / manufacturers. When managing patients with enteral tubes or swallowing difficulties it may not be possible to maintain the patient on their previous preparation due to the need to change to an appropriate formulation. However all product switches should be carried out with care and close monitoring, and where possible patients should be maintained from then onwards on a single manufacturer's product. as per: <a href="https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products">https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products</a></p> <p>Crush the tablets and mix with water prior to administration Consider multiples of 30mg tablets as more cost effective Licensed 15mg/5ml elixir available (note- contains 38% ethanol) Consider alcohol free unlicensed liquid for children. Alcohol free unlicensed specials available (but not in drug tariff). 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>

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Phenytoin	<p>It is recommended that phenytoin should <b>NEVER</b> be administered via enteral feeding tube. Alternative treatments should be considered, as enteral absorption is extremely unpredictable. Parenteral therapy carries a patient safety alert <a href="https://www.england.nhs.uk/publication/patient-safety-alert-risk-of-death-and-severe-harm-from-error-with-injectable-phenytoin/">https://www.england.nhs.uk/publication/patient-safety-alert-risk-of-death-and-severe-harm-from-error-with-injectable-phenytoin/</a>.</p> <p>The MHRA has issued guidance recommending that patients on phenytoin (when used for seizures) are maintained on a specific manufacturer's product, due to variability in product characteristics which may lead to a loss of seizure control when switching between brands / manufacturers. When managing patients with enteral tubes or swallowing difficulties it may not be possible to maintain the patient on their previous preparation due to the need to change to an appropriate formulation. However all product switches should be carried out with care and close monitoring, and where possible patients should be maintained from then onwards on a single manufacturer's product. as per: <a href="https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products">https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products</a></p> <p>For swallowing difficulties use licensed suspension 30mg/5ml. Phenytoin suspension 90mg equivalent to phenytoin capsules/tablets 100mg Chewable 50mg tablets. These can be sucked or chewed</p> <p><b>UNLICENSED</b></p> <p>Phenytoin 90mg/5ml oral suspension minimum quantity 500ml is available included in Part VIII B of Drug Tariff (Nov 20)</p>
Pioglitazone	Crush the tablets and mix with water prior to administration and give immediately.
Pizotifen	<p>Crush the tablets and mix with water prior to administration. If liquid required, consider alternative treatment</p> <p><b>UNLICENSED</b></p> <p>Pizotifen 250micrograms/5ml oral solution (minimum quantity 100ml) – very expensive</p> <p>Pizotifen 250micrograms/5ml oral suspension (minimum quantity 100ml) – most cost-effective option, are available included in Part VIII B of Drug Tariff</p>
Potassium chloride	<p>Use Sando K<sup>®</sup> effervescent tablets.</p> <p>Do not crush Slow K<sup>®</sup>, which are modified-release tablets.</p>
Pravastatin sodium	<p>Firstly consider switching to alternative statin. Atorvastatin is 1<sup>st</sup> line option, Rosuvastatin 2<sup>nd</sup> line if appropriate.</p> <p>Crush the tablets and mix with water prior to administration. The drug is very soluble.</p>
Prednisolone	<p>Many brands of tablets will disperse easily in water within one to five minutes.</p> <p>Do not crush the enteric-coated tablets.</p> <p>Licensed prednisolone 5mg soluble tablets are GREY on the formulary for fine bore tubes only due to cost.</p>



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Pregabalin	<p>Open the capsules and dissolve the contents in water for administration. The capsule contents may have an unpleasant taste Licensed oral solution S/F 20mg/ml available but expensive - No information on administering the oral solution via enteral feeding tubes has been located.</p> <p>If used as epilepsy treatment, a product change could theoretically pose a risk of seizures, although with pregabalin being category C, the potential for clinically relevant differences to exist between different manufacturers' products is considered to be extremely low.</p> <p><a href="https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products">https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products</a></p>
Primidone	<p>Crush the tablets and disperse in water for administration. Without crushing they will disperse in two to five minutes. The drug is poorly soluble</p> <p><u><a href="#">Changing formulations / product manufacturer</a></u></p> <p>The MHRA has issued guidance recommending that patients on primidone (when used for seizures) are maintained on a specific manufacturer's product, due to variability in product characteristics which may lead to a loss of seizure control when switching between brands / manufacturers. When managing patients with enteral tubes or swallowing difficulties it may not be possible to maintain the patient on their previous preparation due to the need to change to an appropriate formulation. However all product switches should be carried out with care and close monitoring, and where possible patients should be maintained from then onwards on a single manufacturer's product.<a href="https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products">https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products</a></p> <p><b>UNLICENSED</b></p> <p>Avoid using the oral suspension as expensive – three strengths are available included in Part VIII B of Drug Tariff ) – 50mg/5ml (minimum quantity 150ml), 62.5mg/5ml (minimum quantity 100ml) and 250mg/5ml (minimum quantity 150ml)</p>
Probenecid	Crush the tablets and mix with water prior to administration. Without crushing they will disperse in two to five minutes
Prochlorperazine	<p>Use the licensed oral solution or the buccal tablets.</p> <p>The buccal tablets are expensive.</p> <p>The standard tablets will disperse easily in water but there is little information about their use.</p>
Procyclidine	<p>Use the licensed oral solution 2.5mg/5ml or 5mg/5ml</p> <p>Consider using a lower volume of the higher strength if possible as more cost effective</p>
Promazine	<p>Use the licensed oral solution 25mg/5ml and 50mg/5ml</p> <p>Consider using a lower volume of the higher strength if possible as more cost effective</p>

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<p>Propranolol hydrochloride</p>	<p>Use the licensed oral solution - 5mg/5ml, 40mg/5ml, 50mg/5ml strength available. Higher strength is more cost effective. Do not crush / open modified-release preparations.</p> <p>For enteral tubes: Propranolol is better absorbed from the large than the small intestine, so administration through enteral feeding tubes terminating in the jejunum is not anticipated to cause any absorption problems. Patients receiving propranolol through enteral feeding tubes terminating in the jejunum should be monitored for increased systemic effects due to possible increased absorption.</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.</p>
<p>Pyridostigmine</p>	<p>Crush the tablets and mix with water prior to administration. Licensed 12mg/ml liquid available but not recommended as not cost effective and no information on this going down enteral tubes. If needing liquid consider unlicensed 20mg/5ml as more cost effective.</p> <p><b>Unlicensed</b> Pyridostigmine bromide 20mg/5ml oral suspension (minimum quantity 100ml) – most cost effective Pyridostigmine bromide 30mg/5ml oral suspension (minimum quantity 50ml) Pyridostigmine bromide 50mg/5ml oral suspension (minimum quantity 100ml) Pyridostigmine bromide 60mg/5ml oral suspension (minimum quantity 200ml), are available included in Part VIII B of Drug Tariff</p>
<p>Pyridoxine</p>	<p>Crush the tablets and mix with water prior to administration. The 50mg tablets will disperse in water within 5 minutes without crushing.</p> <p>Unlicensed Pyridoxine 100mg/5ml oral solution (minimum quantity 100ml) Pyridoxine 100mg/5ml oral suspension (minimum quantity 50ml), are available included in Part VIII B of Drug Tariff - 100mg/5ml oral <b>solution</b> is more cost effective than the oral suspension.</p>
<p>Quetiapine</p>	<p>Quetiapine tablets are not soluble. Crush the tablets and mix with water prior to administration</p> <p>Enteral tubes: Flush the enteral tube well after administration. There is no information on administering the oral suspension via enteral feeding tubes so avoid</p> <p>For patients with swallowing difficulties, crush the tablets and add to soft food (e.g., yogurt) as they taste bitter.</p> <p>There is a licensed oral suspension 20mg/ml, but it is very expensive.</p> <p>Other strengths of <b>unlicensed</b> oral suspension are available included in Part VIII B of Drug Tariff (Nov 20) 12.5mg/5ml (minimum quantity 100ml), 25mg/5ml (minimum quantity 150ml), 50mg/5ml (minimum quantity 100ml)</p>

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Quinine sulfate	<p>Review continued need in line with NICE guidelines</p> <p>For enteral tubes: Crush the tablets well and disperse in a large volume (e.g., 200mL) of water and flush well to minimise blockage and irritancy, as the coating is likely to block narrow-bore enteral feeding tubes. No information on giving the suspension via enteral feeding tubes has been located so avoid</p> <p>For swallowing difficulties: Crush the tablets well and disperse in a large volume (e.g., 200mL) of water. They 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 and review in line with NICE guidelines</p> <p>There is an <b>Unlicensed</b> suspension included in Part VIII B of Drug Tariff but avoid as expensive:          Quinine sulfate 200mg/5ml oral suspension (minimum quantity 100ml)          Quinine sulfate 300mg/5ml oral suspension (minimum quantity 150ml)</p>
Ramipril	<p>Open the capsules and disperse the contents in water or place on bread or mix with apple juice/sauce. It can be placed directly in the mouth, but the taste is unpleasant. For enteral tubes, Open the capsules and disperse the contents in water but they are not very soluble</p> <p>There is a licensed oral solution 2.5mg/5ml but expensive. Consider unlicensed preparation if needing liquid as more cost effective (but still expensive)</p> <p><b>Unlicensed</b>          Ramipril 10mg/5ml oral suspension (minimum quantity 100ml)</p>
Riluzole	<p><b>Administration - swallowing difficulties:</b>          Use the orodispersible tablets.</p> <p><b>Administration – enteral tubes:</b>          Use the 25mg/5ml oral suspension sugar free. This is licensed to be administered via enteral feeding tubes.</p>
Risperidone	<p>Use the liquid 1mg/ml where possible and consider reducing if used to manage behavioural symptoms of dementia in line with guidance if appropriate</p> <p>Orodispersible tablet is available. but this is less cost effective</p>

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Rivaroxaban	<p>Crush the tablets and mix with water prior to administration via enteral tube  Mix with water or apple puree immediately prior to administration for patients with swallowing difficulties.  Note - bioavailability is affected by food only at higher doses. 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.  For patients receiving rivaroxaban via enteral feeding tube, the tube should be flushed after the dose and the feed immediately re-started after doses of 15mg or 20mg. Not suitable for enteral tubes terminating beyond the stomach.  For swallowing difficulties consider using the Rivaroxaban 1mg/ml oral suspension SF, which is a cost-effective alternative to tablets, especially lower strength tablets. This is unlicensed for over 18s.  Consider changing to edoxaban (first line NOAC) which is not dependent on food for absorption.</p>
Rivastigmine	<p>Open the capsules and disperse in water for administration.  Licensed oral solution and patches are expensive. The patch may be suitable for patients with long term swallowing difficulties (Alzest is the preferred cost-effective brand)</p>
Ropinirole hydrochloride	<p>Crush the tablets and mix with water for administration via enteral feeding tubes or in soft food for patients with swallowing difficulties  Do not crush the MR tablets</p>
Rosuvastatin calcium	<p>Firstly consider switching to alternative statin. Atorvastatin is 1<sup>st</sup> line option, Rosuvastatin 2<sup>nd</sup> line if appropriate.</p> <p>Crush the tablets and mix with water prior to administration  The capsules can be opened and the contents administered on a teaspoonful of soft food such as applesauce or chocolate/vanilla flavour pudding. The granules should not be chewed, therefore this method of administration may not be appropriate for patients with limited understanding or impaired ability to follow instructions.</p>

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Rufinamide	<p>Use the licensed oral suspension 40mg/ml for enteral tubes and patients with swallowing difficulties There is no information regarding the use of tablets <u>Changing formulations / product manufacturer</u> The MHRA has issued guidance recommending that (where possible) patients on rufinamide (when used for seizures) are maintained on a specific manufacturer's product, due to variability in product characteristics which may lead to a loss of seizure control when switching between brands / manufacturers. When managing patients with enteral tubes or swallowing difficulties it may not be possible to maintain the patient on their previous preparation due to the need to change to an appropriate formulation. However, all product switches should be carried out with care and close monitoring, and where possible patients should be maintained from then onwards on a single manufacturer's product. <a href="https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products">https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products</a></p>
Sertraline	<p>Enteral tubes: Disperse the tablets in water. They will disperse in one to five minutes. Swallowing difficulties: Crush and mix with food for patients with swallowing difficulties but they have a bitter taste and an anaesthetic effect on the tongue. Use with caution and take care with hot foods after administration. Consider changing to an alternative drug with a licensed liquid formulation e.g., fluoxetine, citalopram.</p>
Sildenafil	<p>Crush the tablets and disperse in water and administer via an enteral tube. Avoid 20mg tablets as very expensive. There is no information regarding administration of the oral suspension via enteral tubes For swallowing difficulties disperse the tablets in water Licensed oral suspension 10mg/ml SF is expensive <b>Unlicensed</b> oral suspension available included in Part VIII B of Drug Tariff (Nov 20). 10mg/5ml (minimum quantity 100ml), 25mg/5ml (minimum quantity 100ml), both are expensive options.</p>
Simvastatin	<p>Simvastatin has been changed to GREY on formulary. Firstly consider switching to alternative statin. Atorvastatin is 1<sup>st</sup> line option, Rosuvastatin 2<sup>nd</sup> line if appropriate.  Crush the tablets and mix with water prior to administration. Crush well as the drug is practically insoluble. It must be used immediately as light sensitive Licensed suspension available as 20mg/5ml, 40mg/5ml – shelf life 28 days; for NG/PEG tubes only but expensive</p>

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Sodium bicarbonate	<p>Open the capsules and mix the contents with water for administration for administration orally or via enteral tube. Consider 500mg strength as more cost efficient</p> <p>Licensed oral solution 420mg/5ml is available but more expensive than opening the capsules</p>
Sodium valproate	<p>If used as epilepsy treatment, a medication change poses a risk of fits</p> <p><a href="https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products">https://www.gov.uk/drug-safety-update/antiepileptic-drugs-updated-advice-on-switching-between-different-manufacturers-products</a></p> <p>Licensed preparations are available. Liquid, MR granules and crushable tablets</p> <p>For enteral tubes use the liquid diluted immediately prior to administration. Note: It should not be diluted in advance as this would dilute the preservative</p> <p>For swallowing difficulties</p> <p>1st choice - Use the liquid (contains sorbitol).</p> <p>2nd choice - For patients who are stabilised on modified-release formulations, use the modified-release granules. The granules should not be chewed or crushed, and therefore this method may not be appropriate for patients with limited understanding or impaired ability to follow instructions.</p> <p>3rd choice - The crushable tablets can be crushed and mixed with a small amount of soft food, e.g., yogurt or jam. They have an extremely bitter taste.</p>
Sotalol hydrochloride	<p>Consider switching to an alternative beta-blocker available as a liquid</p> <p>Crush the tablets and mix with water. The drug is very soluble and can be used for patients with swallowing difficulties or via an enteral tube</p> <p><b>Unlicensed</b> oral suspension 25mg/5ml (minimum quantity 200ml) available included in Part VIII B of Drug Tariff but limited information as to the suitability via an enteral tube</p>

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<p>Spironolactone</p>	<p>Crush the tablets and mix with water prior to administration via enteral tube or for patients with swallowing difficulties</p> <p><b>Unlicensed</b> oral <b>suspension</b> available included in Part VIII B of Drug Tariff. Not to be diluted as may destabilise the suspension</p> <p>5mg/5ml (minimum quantity 125ml)</p> <p>10mg/5ml (minimum quantity 125ml)</p> <p>25mg/5ml (minimum quantity 125ml)</p> <p>50mg/5ml (minimum quantity 125ml)</p> <p>100mg/5ml (minimum quantity 125ml) – most cost-effective option</p> <p>Consider the most cost-effective option when selecting the strength</p> <p><b>Unlicensed</b> oral solution available included in Part VIII B of Drug Tariff). Do not use as very expensive</p> <p>25mg/5ml (minimum quantity 100ml) and 50mg/5ml (minimum quantity 20ml)</p>
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<p>Sucralfate</p>	<p>Licensed suspension 1mg/5ml is available and more cost effective than tablets (only available as special order). .</p> <p>Enteral tubes: <b>NG / PEG tubes</b></p> <p>Review the choice of drug as large breaks in feeding are required for the administration of sucralfate. If treatment is essential, use the suspension and dilute well.</p> <p>Sucralfate has been reported as the most frequent cause of obstruction of enteral feeding tube therefore it must be administered with particular care. The aluminium in sucralfate interacts with proteins in enteral feeds to form an insoluble precipitate (bezoar formation) The Committee on the Safety of Medicines (CSM) has advised caution using sucralfate in seriously ill patients, particularly those receiving concomitant enteral feeds, or with predisposing conditions such as delayed gastric emptying.<sup>226</sup></p> <p>There have been cases of sucralfate and enteral feed complexes solidifying around enteral tubes and causing oesophageal blockages.</p> <p>An enteral feeding break of at least one hour before and one hour after administration of sucralfate is recommended. However, it is strongly recommended that sucralfate is not administered via enteral feeding tubes if the patient is receiving enteral nutrition.</p> <p>Withholding enteral feeds can compromise nutrition and interfere with blood glucose management. If the patient does not have a break in their feeding regimen during which sucralfate can be given, the Nutrition Team should be contacted to advise on management. It is seldom practical to administer sucralfate to patients receiving enteral feeds due to the frequency of dosing (four times daily) and the number of feed breaks this would require.</p> <p><b>Administration - NJ / PEJ / PEGJ tubes</b></p> <p>Do not give. Sucralfate is ineffective by this route.</p>
<p>Sulfasalazine</p>	<p>Sulfasalazine is and amber drug (shared care) – therefore is alternative routes of administration are required, contact specialist team before changing treatment.</p> <p>Consider using the suppositories (500mg) or enema for lower bowel disease</p> <p>Or use the suspension 250mg/5ml</p>
<p>Sulpiride</p>	<p>Disperse the tablets in water prior to administration</p> <p>Available as 200mg and 400mg – consider multiples of 200mg tablets due to cost difference</p> <p>Licensed oral solution 200mg/5ml - this can be diluted to reduce the osmolality when giving into the jejunum (outside product licence) (expensive)</p>



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Tamoxifen	<p>Disperse the tablets in water. They will disperse within 2-5 minutes or disperse in water and mix with jam or yoghurt for patients with swallowing difficulties. Available as: 10mg, 20mg or 40mg. The 20mg are most cost effective. The crushed tablets must be handled with care. Avoid the dust being inhaled, coming into contact with the skin, etc. The carer should wear gloves, mask, and eye protection when crushing tablets.</p> <p>Licensed 10mg/5ml oral solution is available but less cost effective than crushing tablets.</p>
Tamsulosin	<p>Do not crush the MR tablets and the capsules are not suitable for opening for tube administration due to tube blockage. The capsules contain granules which should not be crushed. If no alternative is suitable, they may be mixed with cold water and swallowed whole (only suitable for patients able to follow the instruction not to chew).</p> <p>Consider switching to an alternative therapy.</p> <p><b>Unlicensed</b> oral suspension 400mcg/5ml (minimum quantity 100ml) and 400mcg/5ml oral solution are available included in Part VIII B of Drug Tariff. These are very expensive and there is no information as to the suitability via tube administration.</p>
Temazepam	<p>Consider reducing to stop in line with NICE guidelines and product licence – avoid long term use</p> <p>If not possible to stop, consider alternative treatment (e.g. zolpidem). If not possible use the elixir, 10mg/5ml but very expensive. Do not dilute</p> <p>Enteral tubes: Do not use the tablets as they are insoluble and may block the enteral tube</p> <p>Note – temazepam is less effective when administered through enteral tubes terminating in the jejunum</p>
Terbinafine	<p>Crush the tablets and mix with water prior to administration</p> <p><b>Unlicensed</b> oral suspension 250mg/5ml (minimum quantity 50ml) available included in Part VIII B of Drug Tariff - avoid due to cost</p>
Thiamine hydrochloride	<p>Crush the tablets and mix with water prior to administration</p> <p><b>Unlicensed</b> oral suspension available included in Part VIII B of Drug Tariff</p> <p>50mg/5ml (minimum quantity 100ml)</p> <p><b>100mg/5ml</b> (minimum quantity 100ml) – most cost-efficient option</p> <p><b>Unlicensed</b> oral solution available included in Part VIII B of Drug Tariff - 100mg/5ml (minimum quantity 100ml) avoid due to cost</p>
Ticagrelor	<p>90mg Dose: Use the orodispersible tablets for patients with swallowing difficulties or enteral tubes.</p> <p>60mg dose: Crush and disperse the tablets in water and administer down feeding tubes or take orally.</p>
Tizanidine	<p>Crush the tablets and mix with water prior to administration. Use multiples of 2mg as these are considerably cheaper than 4mg.</p> <p><b>UNLICENSED</b> oral liquids available included in Drug Tariff</p> <p><b>Oral solution 2mg/5ml</b> (minimum quantity 100ml) most cost-effective option if a liquid is required</p> <p>Oral suspension 2mg/5ml (minimum quantity 100ml)</p>

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Tolterodine	<p>Disperse the immediate release tablets in water. They usually disperse within one minute. Use immediately for either enteral tubes or for patients with swallowing difficulties.</p> <p>There is no information as to whether tolterodine is likely to block enteral feeding tubes.</p> <p>The modified-release capsules are not suitable for use via enteral feeding tubes.</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. The preferred form of tolterodine for administration is the standard tablets.</p> <p><b>Unlicensed</b> oral suspension 2mg/5ml (minimum quantity 100ml) is available included in Part VIII B of Drug Tariff</p>
Topiramate	<p>Enteral tubes: Crush the tablets and mix with water prior to administration via enteral tube.</p> <p>No information about administering the oral solution via enteral feeding tubes available so avoid</p> <p>Topiramate is probably absorbed in the upper gastrointestinal tract, therefore absorption and clinical effectiveness may be altered if administered through an enteral tube which terminates in the jejunum. When topiramate is being used for epilepsy, it should only be administered into the jejunum if there is no other option, and the patient should be monitored closely.</p> <p>For swallowing difficulties sprinkle the contents of the capsules on food or mix with water for administration, or crush the tablets and disperse in water, but they may have a bitter taste</p> <p>Licensed oral solution 50mg/5ml and 100mg/5ml are available but very expensive</p> <p><b>Unlicensed</b> oral solution 25mg/5ml (minimum quantity 100ml) available included in Part VIII B of Drug Tariff (Nov 20)</p> <p><u><a href="#">Changing formulations / product manufacturer</a></u></p> <p>The MHRA has issued guidance recommending that (where possible) patients on certain antiepileptic medicines (when used for seizures) are maintained on a specific manufacturer's product, due to variability in product characteristics which may lead to a loss of seizure control when switching between brands / manufacturers. When managing patients with enteral tubes or swallowing difficulties it may not be possible to maintain the patient on their previous preparation due to the need to change to an appropriate formulation. However all product switches should be carried out with care and close monitoring, and where possible patients should be maintained from then onwards on a single manufacturer's product:</p> <p><a href="#">Antiepileptic drugs: updated advice on switching between different manufacturers' products - GOV.UK (www.gov.uk)</a></p>

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Tranexamic acid	Disperse the tablets in water (disperse within 2-5 minutes) or crush and mix with water <b>Unlicensed</b> oral solution 500mg/5ml and oral suspension 500mg/5ml (minimum quantity 100ml) and <b>Unlicensed</b> oral suspension 250mg/5ml (minimum quantity 60ml) (avoid and use 500mg/5ml if necessary), are available included in Part VIII B of Drug Tariff
Tranexamic acid mouthwash	<b>Unlicensed</b> 5% mouthwash (minimum quantity 100ml) available included in Part VIII B of Drug Tariff
Trazodone	Use the liquid (50mg/5ml strength is the most cost effective). Opening the capsules is not recommended. The content of the capsules tastes unpleasant. There is no information available about crushing the tablets, so this is not recommended.
Trihexyphenidyl (benzhexol)	Disperse the tablets in water prior to administration Licensed 5mg/5ml oral solution available but less cost effective
Trimethoprim	Trimethoprim tablets should not be crushed due to the risk of contact sensitisation, i.e. the person crushing the tablets may develop contact dermatitis. Use Trimethoprim 50mg/5ml oral suspension sugar free. <b>SOURCE: UKMI query response.</b>
Ursodeoxycholic acid	Crush the tablets and mix with water for oral 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, so to be used in enteral tubes with caution There is no information about opening the capsules, and therefore this is not recommended for either enteral tubes or swallowing difficulties. Check price of tablets as 2 x 150mg tablets are cheaper than 1 x 300mg, and 2 x 250mg tablets are cheaper than 1 x 500mg tablets Licensed oral suspension 250mg/5ml is available and may be preferable for enteral tube administration
Valproic acid	Discuss with initiating clinician, if appropriate. Valproic acid and sodium valproate are not directly interchangeable. No information on administration of valproic acid to patients with enteral feeding tubes or swallowing difficulties has been located. The manufacturers of Depakote <sup>®</sup> do not recommend crushing the tablets due to the increased risk of gastrointestinal disturbance. There are pharmacokinetic differences between Depakote <sup>®</sup> and sodium valproate (Epilim <sup>®</sup> ) - Depakote <sup>®</sup> produces higher peak levels than similar doses of Epilim <sup>®</sup> but has a shorter half-life. There is no commercially available liquid formulation of Depakote <sup>®</sup> , and the manufacturers believe that most clinicians manage their patients with Epilim <sup>®</sup> liquid when necessary. It is recommended that when switching from valproic acid to sodium valproate, a slightly higher (approximately 10%) dose of sodium valproate is used. Monitor for clinical effect.

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Vancomycin	See local <a href="#">C.Diff guideline</a> - In the instance of swallowing difficulties, vancomycin liquid is available as special order in community pharmacies. More information on vancomycin use in swallowing difficulties can be found on the <a href="#">SPS website</a>
Venlafaxine	<p>Crush the tablets and mix with water prior to administration orally or via enteral tubes Do not use the MR capsules for enteral administration and there is no information regarding using the oral solution via feeding tubes.</p> <p>For patients with swallowing difficulties some brands of MR capsules contain MR beads which can be emptied out and given in smooth food – e.g., yoghurt. The beads must be swallowed whole and may not be appropriate for patients with limited understanding / impaired ability to follow instructions. Other brands contain mini-tablets, and these capsules should not be opened.</p> <p>Licensed 37.5mg/5ml and 75mg/5ml oral solution SF are available but expensive. They are licensed to be given via NG or PEG tubes. No information on PEGJ/NJ tubes.</p>
Verapamil	<p>Crush the tablets and mix with water prior to administration The crushed tablets have a local anaesthetic effect in the mouth so care must be taken with hot food after administration Do not crush the MR tablets or open the capsules. Dose and frequency changes are required if changing from MR capsules to the immediate release preparations Licensed oral solution 40mg/5ml is available but expensive</p>

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<p>Warfarin</p>	<p>Consider switching to edoxaban or other DOAC – see separate entries. This may not be possible for all patients. Crush the tablets and mix with water before administration. Or disperse in water (disperse within 2 to 5 minutes) without crushing. Monitor INR closely as crushing the tablets and mixing with water may increase or decrease potency. Enteral tubes: Consider switching to a DOAC due to interactions with enteral feeds 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). Care is necessary when patients are also receiving enteral feeds with high vitamin K content and antagonise the effects of warfarin, i.e., decrease prothrombin time. It is important to keep vitamin K intake consistent from day to day. Therefore if dietary or feed intake changes significantly, INR should be monitored closely over the next few days. There may be an interaction between warfarin and feed proteins which contributes to the reduced anticoagulant effect when warfarin is given to patients receiving enteral feeds. Avoid feeds containing soya protein. Warfarin resistance may occur in patients receiving enteral feeds, resulting in a need for higher doses. Care should be taken to review and adjust doses down again when the enteral feed is stopped. Licensed oral suspension 1mg/ml is available but expensive. It is advisable to monitor INR closely when switching between formulations.</p>
<p>Zolpidem</p>	<p>Crush and mix with water prior to administration orally or via enteral tubes and consider reducing to stop in line with guidance</p>

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<p>Zonisamide</p>	<p>Open the capsules and disperse in water or apple juice for administration via enteral tubes            Open the capsules and sprinkle the contents onto apple sauce or chocolate pudding or disperse in water or apple juice for oral administration            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 <b>Unlicensed</b> manner            100mg/5ml oral suspension is a licensed formulation which may be used but it less cost effective than opening the capsules. It is licensed to be used in enteral tubes.  <u><a href="#">Changing formulations / product manufacturer</a></u>            The MHRA has issued guidance recommending that (where possible) patients on antiepileptics (when used for seizures) are maintained on a specific manufacturer's product, due to variability in product characteristics which may lead to a loss of seizure control when switching between brands / manufacturers. When managing patients with enteral tubes or swallowing difficulties it may not be possible to maintain the patient on their previous preparation due to the need to change to an appropriate formulation. However all product switches should be carried out with care and close monitoring, and where possible patients should be maintained from then onwards on a single manufacturer's product:  <a href="#">Antiepileptic drugs: updated advice on switching between different manufacturers' products - GOV.UK (www.gov.uk)</a></p>
<p>Zopiclone</p>	<p>Do not crush tablets as liable to block enteral tubes. They have a bitter taste and not suitable to be crushed.            Consider stopping or changing to zolpidem and reduce dose to stop</p> <p><b>Unlicensed oral solution</b> available included in Part VIII B of Drug Tariff            3.75mg/5ml (minimum quantity 150ml)            7.5mg/5ml (minimum quantity 100ml)</p> <p><b>Unlicensed oral suspension</b> available included in Part VIII B of Drug Tariff            3.75mg/5ml (minimum quantity 100ml)            7.5mg/5ml (minimum quantity 100ml)            No information regarding administration via enteral tubes so not recommended</p>

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### Eye Preparations

Preservative intolerance should usually be diagnosed by an ophthalmologist, however if patients require drops more than four times a day consider switching to preservative free drops. If PF formulations are warranted, proprietary PF formulations (available in unit dose preparations) should be prescribed if possible.

Manufactured specials are unlicensed and 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 is not a viable option, such as for long courses or where the patient shows signs of preservative toxicity which can be seen with multiple daily administrations.

Drug	Alternatives available
Atropine sulfate eye drops 1%	Avoid licensed atropine 1% eye drops x 10ml and use licensed 0.5ml unit dose PF Minims as considerably cheaper
Carmellose PF eye drops 0.5% and 1%	Check current drug tariff for cheapest option available Current recommended option is VIZcellose P/F 10ml
Ciclosporin eye drops	Grey (consultant/specialist initiation)  Licensed Ikervis® 0.1% 0.3ml unit dose is the cost-effective option  Unlicensed Part VIII B - 0.05% eye drops 0.4ml until dose PF available. Minimum quantity 0.4ml
Ciclosporin eye ointment	Unlicensed Part VIII B - 0.2% eye ointment PF available. Minimum quantity 3.5g
Dexamethasone PF drops 0.1%	LICENSED 0.4ml unit dose preservative free as Dropodex is cost effective choice.

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Ganciclovir eye gel	<p>Urgently refer all patients with suspected herpes simplex to the hospital eye department. Only prescribe an antiviral eye preparation after specialist advice when same day secondary care appointment is not available.</p> <p>Licensed Ganciclovir 0.15% eye gel (Virgan®) – Green (consultant/specialist recommendation)</p> <p>Consider aciclovir eye ointment (Grey after consultant/specialist recommendation on formulary) only when ganciclovir is not suitable</p>
Hypromellose eye drops	<p>Prescribe generically as 0.3% hypromellose</p> <p>If preservative free required can use Evolve Hypromellose 0.3% bottle</p>
Pilocarpine HCl PF eye drops	Licensed 2% PF x 0.5ml unit dose Minims available
Polyvinyl alcohol eye drops	<p>Prescribe as Sno Tears as most cost-effective choice.</p> <p>Refresh® ophthalmic 1.4% eye drops x 0.4ml unit dose cheapest P/F option</p>
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). 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 0.9% PF eye drops	Licensed Minims PF 0.9% x 0.5ml available



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<p>Sodium chloride 5% eye drops/ ointment</p>	<p>Several different brands available, most cost-effective options are:</p> <p>Ointment: Sodium Chloride 5% ointment (Alissa Healthcare) (5g preservative free tube)</p> <p>Drops: NaCl PF 5% 20 x 0.45ml unit dose (Essential pharmaceuticals Ltd) or SodiEye 5% (10ml preservative free bottle)</p> <p>Unlicensed sodium chloride 5% eye ointment available included in Part VIII B of Drug Tariff (Nov 20). Minimum quantity 5g. Expensive – prescribe Alissa brand as above</p>
<p>Sodium cromoglicate 2% PF eye drops</p>	<p>Licensed Librachrom 2% PF eye drops in 10ml bottle brand most cost effective</p>

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### Skin Preparations

Drug	Alternatives available
Coal tar paste	Consider switching to LICENSED, commercially available coal tar preparation if appropriate e.g., Cociois 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 VIIIB of Drug Tariff. Minimum quantity 100g. Very expensive. Consider licensed cream, lotion or cutaneous emulsion products instead.
Coal tar solution 5% in betamethasone val 0.025%	UNLICENSED Coal tar solution 5% in Betamethasone valerate 0.025% ointment included in Part VIIIB of Drug Tariff. Minimum quantity 100g
Coal tar solution 6%/ salicylic acid 2% ointment	UNLICENSED - Included in Part VIIIB of Drug Tariff Minimum quantity 100g
Coconut oil 25% ointment	UNLICENSED - Included in Part VIIIB of Drug Tariff Minimum quantity 100g
Diltiazem 2% ointment/cream	For anal fissures consider switching to licensed Glyceryl trinitrate ointment 0.4% (Rectogesic)  UNLICENSED 2% ointment and cream are included in Part VIIIB of Drug Tariff. Minimum quantity 30g Do not prescribe the 0.2% cream. This is not licensed for anal fissure.
Glyceryl trinitrate ointment	For anal fissures consider LICENSED glyceryl trinitrate ointment 0.4% (Rectogesic)  Unlicensed glyceryl trinitrate 0.2% ointment available included in part VIIIB of the drug tariff. Minimum quantity 30g
Glycopyrronium bromide 0.05% topical solution	UNLICENSED - Included in Part VIIIB of Drug Tariff. Minimum quantity 500ml

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Glycopyrronium bromide 2% in cetomacrogol cream (formula A)	UNLICENSED - Included in Part VIIIIB of Drug Tariff. Minimum quantity 30g
Lidocaine	Licensed 2% cream (Vagisil®) Licensed 4% cream (LMX4®) Licensed 5% ointment (AAH Pharmaceuticals Ltd) Lidocaine 2.5%/prilocaine 2.5% cream (Emla®)  Unlicensed lidocaine 2% gel available included in part VIIIIB of the drug tariff. Minimum quantity 15ml (expensive)
Salicylic acid ointment/creams	Licensed 2% ointment (T and R Ltd) and 50% ointment available  Unlicensed creams and ointments are available included in part VIIIIB of the drug tariff - 2% in aqueous cream, 5% ointment, 5% cream, 10% ointment, 20% ointment, 10% in aqueous cream. Minimum quantity 100g
Salicylic acid and sulfur	UNLICENSED Salicylic acid 2% / sulfur 2% in Aqueous cream included in Part VIIIIB of Drug Tariff. Minimum quantity 100g
Urea ointment 25%	Consider licensed Flexitol 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

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Tamsulosin .....	49	Warfarin .....	53	Sodium cromoglicate 2% PF eye drops .....	57	Urea ointment 25% .....	59
Temazepam.....	49	Zolpidem .....	53	<b>Skin Preparations</b> .....	58	Zinc and salicylic acid paste BP	59
Terbinafine.....	49	Zonisamide .....	54	Coal tar paste.....	58	Zinc oxide 15% and ichthammol 1% in yellow soft paraffin .....	59
Thiamine hydrochloride.....	49	Zopiclone.....	54	Coal tar ointment.....	58		
Ticagrelor .....	49	<b>Eye Preparations</b> .....	55				
Tizanidine.....	49	Atropine sulfate eye drops 1%	55				
Tolterodine .....	50	Carmellose PF eye drops 0.5% and 1%.....	55				
Topiramate.....	50						