



*Barking and Dagenham, Havering and Redbridge
Clinical Commissioning Groups*

Specials information pack

- What are the risks of specials?
- What are the alternatives?
- How can you improve patient safety?

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NOTE: This is a live document with regular updates, please be sure you are using the correct version.

This is guidance only; to support a clinician's decision but should not determine it.

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Caution: The information contained within this guidance is to help prescribers and key decision makers; it is not intended to be directive. First line consideration should be to patient's needs and safety; a one suggestion fits all approach should not be used. Patients should be monitored after any change to their medication or formulation. Consideration has been given to complicated situations e.g. enteral tube use. Unless stated otherwise, a medicine which will disperse for tube administration will also disperse for oral use. Immediately using a medicine after dispersal should pose the least risk of degradation. The focus is on dispersing medication where evidence allows, the crushing of tablets is not encouraged unless the patient is fully in support; there is less evidence for crushing tablets as the effectiveness can be reduced. Care homes should not routinely be asked to crush tablets due to procedural health and safety concerns. Dispersed medication is not appropriate for part dosing, the solution is not in suspension and the dose given will not be accurate unless the whole amount is given. Unless stated otherwise, all recommendations in this guide are for off-licence use of licensed medicines. Prescribing an unlicensed liquid (special) carries the same legal responsibilities as prescribing a tablet to be dispersed off-licence. The reasoning and evidence for each unlicensed prescription must be well documented. Please read all safety information before progressing to the monographs.

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What is a special?

Very rarely a patient will need a medicine which isn't already available on the market; it then has to be specially made from scratch. This might be because a liquid is needed and only tablets are available, perhaps for a child who needs an unusual dose, or to overcome swallowing difficulties in a stroke patient. Sometimes a patient is allergic or intolerant to an ingredient, for example, alcohol might be an ingredient which isn't suitable for infants.

These specially made medicines are unlicensed, meaning the prescriber accepts the responsibility for the safety and effectiveness of the product. Specials and extemporaneous products are made according to many different formulations by many different companies; the exact ingredients can differ every time and they often have no safety, stability or efficacy testing.

Where do they come from?

A pharmacist can make an extemporaneous product in their pharmacy. Specialist manufacturers can make either extemporaneous products or specials. Specials should only be manufactured by a company which has a specials manufacturing licence from the medicines healthcare regulatory agency (MHRA)¹³. This means the facilities of the manufacturer have reached a minimum standard. They may, or may not, produce specials in a similar way to licensed products. **It does not mean the product is licensed in any way.**

What assurance does each method of manufacture offer?

Tested and quality assured?	Licensed medicine	Special	Extemporaneously dispensed medicine
Raw materials, process, packing, final product, storage and distribution	√√√	√√√	X
Formulation	√√√	√	X
Stability and shelf life	√√√	√	X
Safety and efficacy	√√√	X	X
Labelling	√√√	√	X
Consistency/Continuity	√√√	√√	X

"Specials" the quality and safety issues. Tim root, Specialist pharmacist, Clinical governance and technical services. NHS East & South East England Specialist Pharmacy Services¹⁴

It is usually impossible to determine if the medicine is going to be manufactured as a special or as an extemporaneous product at the time of ordering. The quality between the two can vary vastly (as described in the table above) and only the certificate of analysis or certificate of conformity which is sent with the product will determine which it is. These certificates give some reassurance about the quality of a product, but a certificate of conformity is useless unless you specified the exact formula for the manufacturer to conform to.

How do I know if it's unlicensed?

A medicine **not** listed in the British National Formulary (BNF) is likely to be unlicensed (the BNF does list some unlicensed products but they are clearly identified as needing to be obtained from a specials manufacturer). The monographs below can also help. From November 2011, a limited number of specials preparations are listed in part VIII B of the [Drug Tariff](#) (basic price of unlicensed medicines). Although these still remain unlicensed, the purpose of this list is to ensure a standard price is reimbursed but only if the medicine is prescribed generically - [click here](#) for more information. This list will be updated by the Department of Health as and when appropriate. If the special is listed in the Drug Tariff, the subsequent monographs below are marked 'DT'. If a special is prescribed by brand or a manufacturer name is stated then the cost will be variable and is not subject to standard pricing under part VIII B of the Drug Tariff. A number of branded specials have been included in the guide whereby a certificate of analysis has been submitted by the manufacturer which provides evidence that the product has been manufactured in a batch and in accordance with Good Manufacturing Practice. Some of these have a Drug Tariff price and have been included in the monographs.

What are Minimum Volumes in Part VIII B Drug Tariff?

For unlicensed medicines listed in Part VIII B of the Drug Tariff, the minimum cost is the list price for the pack size (also known as 'minimum volume') stated. If the quantity prescribed is more than the pack size stated, the cost will be charged as: list price for the pack, plus for every additional ml/gram prescribed, the list price per ml/gram (above the minimum volume).

For example, in March 2013 Drug Tariff Part VIII B, bisacodyl 2.74mg/ml rectal solution is listed as having a minimum volume of 200ml, the price of a minimum volume as £42.50 and the price for each extra ml above the minimum volume as £0.21.

If 400ml of bisacodyl 2.74mg/ml rectal solution is prescribed and charged in March 2013 the cost will be:

Minimum volume = £42.50

Plus 100ml at £0.21 per ml = £21

Total = £63.50

In this case, as for most drugs listed in part VIII B, the average cost per ml/gram comes down once the quantity prescribed goes above the minimum volume (cost of 200ml bisacodyl is £63.50 which is cheaper than 2 separate prescriptions of 100ml, total cost £85). In many cases, the cost above minimum volume becomes significantly lower.

However, due to price fluctuations, there will be instances whereby the cost of prescribing over the minimum volume is significantly higher. Previously, bisacodyl 2.74mg/ml rectal solution was listed in May 2012 Drug Tariff Part VIII B as having the price of a minimum volume of 200ml as £46.70 and the price for each extra ml above the minimum volume as £1.55. Therefore, the cost of prescribing 400ml was **£201.70**. If this was issued as 2

separate prescriptions of 100ml each, the cost of prescribing 200ml would have been £93.40.

Monographs will be highlighted where the cost of prescribing above the minimum volume is significantly high, however, management of issuing prescriptions is under the prescriber's discretion as prices can fluctuate as highlighted in the working example above.

The pharmacist dispensing the special should inform the prescriber and the patient (professional discretion applies) that the medicine is unlicensed. Prescribers should expect to be contacted by their pharmacist to confirm they really want to prescribe a special and to advise them if there is a licensed or safer alternative. Pharmacists may want more information about the patient e.g. why do they need a liquid? Are they tube fed?

What does it mean for prescribers?

When prescribing a licensed product to be used in a licensed way, untoward effects are the responsibility of the manufacturer. If a patient experiences an unexpected adverse reaction then the patient may have grounds to prosecute that manufacturer.

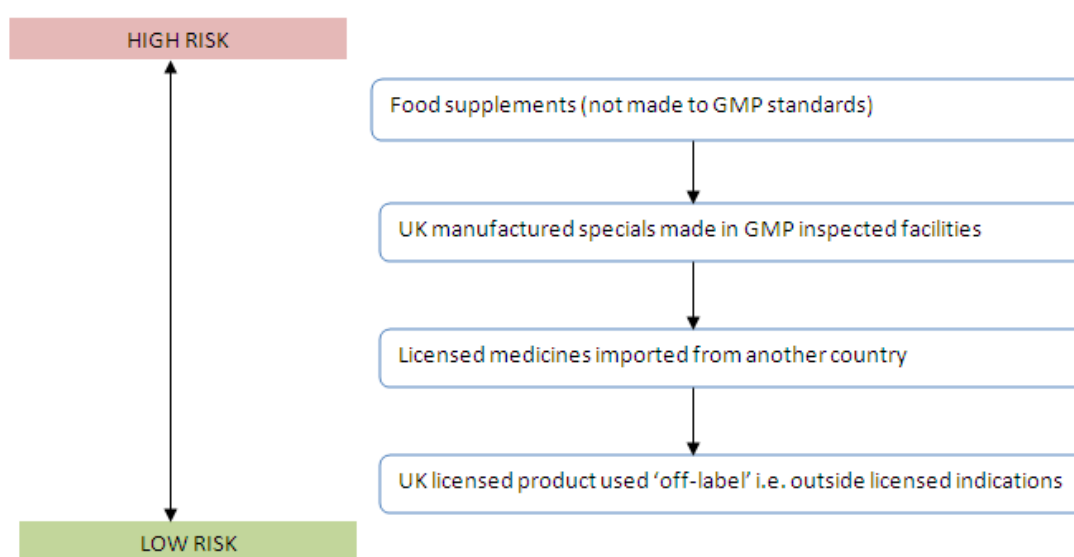
This is not the case for an unlicensed medicine (a special, even one that is listed in the Drug Tariff, an extemporaneous product or one used off-licence). As there are either no summary of product characteristics (SPC) or the medicine is prescribed outside of that licence, the prescriber takes responsibility for any adverse effect caused by the medicine they prescribed, unless it can be demonstrated that the medicine was faulty. Given the lack of safety testing, this risk should not be underestimated. Prescribers must be able to justify and feel competent in using unlicensed medicines. The General Medical Council (<http://www.gmc-uk.org/guidance/>) have guidance on prescribing unlicensed medicines within [good practice in prescribing and managing medicines and devices document](#) (last updated 2013). Nurse and midwife independent prescribers can also prescribe unlicensed medicines from 2009 and [NMC circular 4/2010](#) issues guidance on prescribing. The person signing the prescription is still liable even if the prescription was requested by secondary care.

The MHRA have produced a risk hierarchy for using unlicensed medicines but ultimately the choice of treatment will need to be tailored to the individual requirements of the patient. For example, a patient with swallowing difficulties who cannot take the licensed tablet formulation may have to take an unlicensed liquid special.

Risk Hierarchy for the use of unlicensed medicines

- An unlicensed product should not be used where a product available and licensed within the UK could be used to meet the patient's special need.
- Although the MHRA does not recommend "off label" (outside of the licensed indications) use of products, if the UK licensed product can meet the clinical need, even "off-label", it should be used in preference to an unlicensed product. Licensed products available in the UK have been assessed for quality safety and efficacy. If used "off-label" some of this assessment may not apply, but much will still be valid. This is a better risk position than in the use of an unassessed, unlicensed product. The fact that the intended use is outside of the licensed indications is therefore not a reason to use an unlicensed product. It should be understood that the prescriber's responsibility and potential liability are increased when prescribing off-label.
- If the UK product cannot meet the special need, then another (imported) medicinal product should be considered, which is licensed in the country of origin.
- If none of these options will suffice, then a completely unlicensed product may have to be used, for example, UK manufactured "specials", which are made in Good Manufacturing Practice (GMP) inspected facilities, but which are otherwise unassessed (GMP inspection of specials manufacturers is not product specific). There may also be other products available which are unlicensed in the country of origin.
- The least acceptable products are those that are unlicensed in the country of origin, and which are not classed as medicines in the country of origin (but are in the UK). Hence, for example, the use of melatonin products from the USA, where melatonin products are classed as supplements, not pharmaceuticals and may not be made to expected standards of pharmaceutical GMP should be avoided whenever possible.

Risk hierarchy for unlicensed medicines



The prescription (suggested standard operating procedure SOP)

1. Review the patient. Do they still need the medicine?
2. Have all licensed alternatives been considered? E.g. licensed soluble tablets or changing to an alternative medicine in the same class which has a suitable licensed formulation.
3. If switching medicines make sure any dose changes are taken into consideration; a titration period may be needed and/or bioavailability can differ between formulations.
4. It may be safer to use a licensed product in an un-licensed way, compared to using a completely unlicensed product. Contact the medicines management team to ask for advice on using licensed products in an off-licence way. The guidance below may give you an idea but remember that part doses should not be given from dispersed medication, the solution is not uniform enough for a consistent dose. Changes to a formulation may also affect its absorption. Some formulations shouldn't be altered or it may be dangerous to do so. Some medications interact with tubes/feeds.
5. If you decide to prescribe a licensed product to be used in an unlicensed way e.g. dispersing a tablet, **make sure the directions are very clearly written on the prescription**. Nursing staff or carers will not be able to comply unless you have written it clearly on the prescription and it appears on the label. Crushing tablets is not recommended in care homes due to health and safety risks of re-using tablet crushers.
6. If you chose an unlicensed medicine, is your patient aware of and accepting of any risk? Keep a written record of consent. Use your professional discretion when discussing this with the patient; some may not be able to judge the risk vs benefit for themselves.
7. Is the medicine still a cost effective option? A special will cost on average £160 per item.
8. An unlicensed product usually has a very short expiry date. Only prescribe enough medicine to last until the expiry to avoid waste, this could be as short as 1 week.
9. Advise your patient to use the same pharmacy each time so that the same manufacturer is hopefully used. Each manufacturer may use a different formula and the efficacy may vary. This is particularly important for drugs with a narrow therapeutic index.

Monographs

Aa...

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Acetazolamide	(DT)* 250mg/ 5ml	Acetazolamide tablets disintegrate quickly in 10mL water.	250mg tablet will disintegrate quickly. Stop the enteral feed and flush. Place tablet in the barrel of an oral syringe with 10mL water and shake gently to disperse. Flush down the tube (8Fr NG is ok) and flush again with water. Ensure all particles are removed from the syringe - may require repeated flushes. Always use immediately - do not store the dispersed mixture ¹	£25.44 (112)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Acetylcysteine Eye Drops preservative free		No CE marked preservative free option.	Refer to Ophthalmic special order products table below by The Royal College of Ophthalmologists.	£14.93
Acetylcysteine	£72	<p>YourNAC 600mg tablet and capsule</p> <p>OroNAC 600mg tablet, effervescent tablet and capsule</p> <p>EU licensed product-effervescent tablets</p> <p>US licensed product-capsules</p> <p>Acetylcysteine injection</p>	<p>Use effervescent tablets for enteral tubes- dissolve tablet in a cup of 50ml water. Wait for reaction to finish. Draw into 50ml oral syringe and administer. Rinse cup and administer the remainder and flush with 10ml water³.</p> <p>Acetylcysteine 600mg capsules is now in the Drug Tariff.</p> <p>YourNAC 600mg tablet and capsule is a registered food supplement manufactured to GMP standards⁹</p> <p>OroNAC 600mg tablet, effervescent tablet and capsule is an unlicensed brand, however, this is listed in the Drug Tariff and hence if prescribed by brand will be a fixed price. A Certificate of Analysis is kept on file.</p> <p>The following preparations below are licensed outside UK and therefore the price cannot be guaranteed:</p> <ul style="list-style-type: none"> - EU licensed: ACC-600 acetylcysteine 600mg effervescent tablets and Flumucil 600mg effervescent tablets - US licensed: N-acetylcysteine 600mg capsules <p>Acetylcysteine injection has been used as a mouthwash¹. It has a bitter taste and can be diluted in orange juice, orange or blackcurrant syrup for enteral administration or swallowing difficulties³.</p>	<p>£15 YourNAC 30 caps or 30 tabs</p> <p>£24.95 OroNAC 30 caps or 30 tabs</p> <p>£24.95 OroNAC effervescent 20 tabs</p> <p>£39.95 30 caps (generic)</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Aciclovir	-	Dispersible tablets or sugar-free suspension	<p>200mg and 400mg dispersible tablets, suspension sugar-free 200mg/5ml, 125ml and 400mg/5ml, 100ml.</p> <p>Use dispersible tablets for feeding tubes (ideally Ranbaxy). Stop the feed and flush. Disperse the tablet in the drum of an oral syringe with 10mL water and flush through. Rinse the syringe and flush. Flush the line with water^{1,3}</p> <p>Zovirax suspension is an extremely viscous liquid difficult to flush via fine-bore tubes and does not flow well under gravity¹.</p>	<p>£11.98 400mg dispersible Tablets x 56</p> <p>£39.47 Suspension</p>
Albendazole	£126	All preparations are unlicensed. Consider alternative.	All preparations are unlicensed and available on a named patient basis only. Use Mebendazole suspension if possible ² . No information on use via the feeding tube ³	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Alendronic Acid	£403	<p>Review need.</p> <p>Licensed effervescent tablet</p> <p>Licensed sugar free oral solution.</p> <p>Fosamax once weekly will disperse in 10mL water.</p>	<p>Alendronate should be taken at least 30 minutes before breakfast, medicine or other drinks with plain water only and not lie down for at least 30 minutes afterwards. Check the patient has had calcium and vitamin d supplementation.</p> <p>Alendronate is contraindicated in patients with oesophageal disease. Owing to the risks of oesophageal damage, alendronate should be used with caution via enteral feeding tube especially in patients with delayed gastric emptying at risk of oesophageal reflux and those patients unable to sit or stand upright¹.</p> <p>70mg effervescent tablet. No information on use in feeding tubes⁴³. Dissolve the tablet in half a glass of water (no less than 120ml), the resulting solution should be drunk only when the fizzing has subsided and tablet has fully dissolved, followed by drinking another 30ml of water.</p> <p>Solution 70mg/100ml, sugar-free. However, note volume required is 100ml per dose. No information on use in feeding tubes^{1,3}.</p> <p>If using standard tablets, all usual warnings apply. Stop feeding for as long as possible (4hrs) and flush the tube prior to and after administration (30mins). Ensure patient is upright. Disperse (Fosamax once weekly) tablet in the barrel of an oral syringe. Disperse with 10mL water, shake gently, and flush. Rinse syringe and flush. Flush tube with 50mL water minimum. Keep patient upright for minimum 30mins to avoid reflux¹</p>	<p>£22.80 4 x efferv tablets</p> <p>£22.80 4x100ml suspension</p> <p>£22.80 Fosamax once weekly Tablets</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Alfacalcidol	-	One-Alpha oral drops. One drop ~ 100 nanograms	Stop the feed and flush. Mix the required number of drops with water in a medicine pot. Draw into a syringe and flush into the feeding tube. Flush the tube. The injection can also be given orally or via a feeding tube ¹ . The drops may adsorb to the feeding tube. Exercise caution and use injection if possible ³ .	£21.30
Alfuzosin	-	Crush and disperse non MR tablets	Alfuzosin tablets 2.5mg could be crushed and dispersed in water if absolutely necessary ³	£2.06 (60)
Allopurinol	(DT)* 100mg/5ml 300mg/5ml	Tablets will disperse in 10mL water	100mg and 300mg tablets. Stop the feed and flush. Disperse the tablet in the barrel of an oral syringe with 10mL water, shake if necessary and flush. Rinse and flush. Flush the line ¹ The 100mg tablets can be crushed and mixed in water, otherwise disperse in one minute without crushing. The 300mg tablet will take longer to disperse and should be crushed well before dispersing in water as it is not very soluble ³ .	£0.75 (100mg tablets x 28)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Amiloride	£37	Licensed oral solution	<p>Oral solution, sugar-free, amiloride hydrochloride 5 mg/5mL, 150mL. Can be flushed down a feeding tube^{1,3}.</p> <p>Tablets can be crushed or dispersed in water for administration and a partly insoluble. Different brands may disperse in water at notably different rates^{1,3}.</p> <p>Crush tablet and add powder to 15-30ml water and mix well. Draw up in a syringe and administer. Rinse and administer and flush³.</p>	£37.35
Aminophylline	£260		<p>Refer to entry on theophylline.</p> <p>Aminophylline 360mg suppositories are unlicensed. Do not crush M/R tablets¹</p>	
Amiodarone	<p><u>(DT)</u>*</p> <p>50mg/5ml</p> <p>100mg/5ml</p>	Tablets could be crushed and dispersed in 15mL water if absolutely necessary.	<p>100mg and 200mg tablets. Stop the enteral feed and flush. Crush the tablet and mix with 15mL water. Draw into a syringe and flush. Rinse to ensure all medication is flushed. Flush the tube.</p> <p>If oral, add the crushed tablet to a spoonful of jam to avoid bitter taste¹</p>	£1.93 (200mg tablets x 28)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Amisulpride		Licensed oral solution	<p>100 mg/ml Oral solution, 60ml (caramel flavour)² Can be flushed down a feeding tube¹</p> <p>Caution: UK Medicines Information have published a product safety assessment report³⁸ for amisulpiride liquid after National Reporting and Learning System (NRLS) identified a number of incidents regarding confusion with amisulpiride and sulpiride and other similar sounding medicines. Amisulpiride is also available as a specials liquid product in a different strength to the licensed liquid. Please take extra care in prescribing the correct medicine and strength.</p>	£36
Amitriptyline		Licensed oral solution	<p>Oral solution sugar-free, amitriptyline hydrochloride 10mg/5ml, 25mg/5mL and 50mg/5mL, 150mL². Can be flushed down a feeding tube¹.</p> <p>Tablets can be crushed (crush well as film-coating may block feeding tube) add powder to 15-30ml water and mix well. Draw up in a syringe and administer. Rinse and administer and flush³.</p>	<p>£110.48 (10mg/5ml)</p> <p>£18 (25mg/5ml)</p> <p>£19.20 (50mg/5ml)</p>
Amlodipine		<p>Licensed oral solution</p> <p>Tablets will disperse in 10mL water</p>	<p>10mg/5ml, 5mg/5ml oral solution sugar-free, 150ml which has to be stored in the fridge and expires 30 days after opening (Rosemont brand.)</p> <p>The manufacturer have no information on administration of the oral solution via feeding tube³⁷.</p> <p>Stop the enteral feed and flush. Place tablet in barrel of syringe and disperse with 10mL water and flush. Most tablets will disperse in water within 1-5 minutes. Flush the line with water^{1,3}. Light sensitive³</p>	<p>£115.12 10mg/5ml 150ml</p> <p>£75.75 5mg/5ml 150ml</p> <p>£0.78 (10mg tablets x 28)</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Anastrozole	-	Tablets disperse in 10mL water (5mins)	<p>Stop the feed and flush. Place tablet in barrel of syringe and disperse with 10mL water (shake gently) and flush. Rinse the syringe and flush. Flush the line with water¹.</p> <p>Pregnant women should not handle crushed or broken tablets³</p>	£1.09
Antacid and Oxetacaine	(DT) *	Antacids		

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Arginine (L-arginine)	(DT)* 500mg/5ml 2g/5ml	L-arginine 500mg tablets L-arginine powder 100g	NHS England commissioned ³⁹ , refer back to specialist. Licensed for use in urea cycle disorders such as hyperammonaemia types 1 and 2, citrullinaemia, arginosuccinic aciduria and deficiency of N-acetyl glutamate synthetase ⁷ .	
Aspirin	-	Dispersible tablets	Stop the enteral feed and flush. Place tablet in barrel of syringe and disperse with 10mL water (shake gently) and flush. Rinse the syringe and flush. Flush the line with water ¹	£0.68
Atenolol	-	Licensed syrup	Syrup, sugar-free, atenolol 25 mg/5mL, 300mL ² . Can be administered via a feeding tube but should be diluted with equal volume of water for jejunal administration to reduce osmolality ¹	£5.59

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Atorvastatin	<u>(DT)</u> * 20mg/ 5ml	Chewable tablets. Standard tablets will disperse in 10mL water (5mins) Simvastatin liquid	Licensed atorvastatin chewable tablets 5mg, 10mg, 20mg and 40mg are available if needed. No information crushing chewable tablets or use in feeding tubes. It is licensed to be either swallowed whole or chewed with a drink of water with or without food ²¹ . Atorvastatin is only slightly soluble in water and is light-sensitive ²¹ . If atorvastatin is necessary- use the standard tablets. Stop the feed and flush. Add the tablet to the barrel of an oral syringe and disperse with 10mL water, shake gently and flush. Rinse the syringe and flush. Flush tube. Light sensitive ¹ Licensed simvastatin liquid refer to monograph.	£13.80 10mg Chewable tablets £26.40 20mg Chewable Tablets
Azathioprine	<u>(DT)</u> * 20mg/ 5ml 25mg/ 5ml 50mg/ 5ml 100mg/ 5ml	Cytotoxic: Tablets will disperse in 10mL water if necessary.	25mg and 50mg tablets. Caution cytotoxic: Only recommend dispersing (never crushing) if deemed absolutely necessary . Wear gloves, protective apron and cytotoxic equipment throughout preparation and administration. Stop the enteral feed and flush. Place tablet into barrel of syringe and disperse with 10mL water, shake gently and flush. Rinse syringe and flush. Flush line with water. Dispose of all contaminated material (syringe and gloves, etc) as cytotoxic waste ^{1,3}	£1.61 (25mg tablets x 28)

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BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Baclofen	-	Licensed oral solution	Oral solution, baclofen 5 mg/5mL, 300 mL ² . Can be administered via a feeding tube. If a high volume is required disperse tablets (Teva) in 10mL water instead due to high osmolarity of the liquid ¹	£2.97
Bendroflumethiazide	(DT)* 2.5mg/ 5ml	Tablets will disperse in 10mL water	Stop the feed and flush. Place the tablet (Workhardt brand disperses in water) in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹	£0.63
Benzatropine			This was manufactured by MSD but was discontinued many years ago. If the patient cannot take an alternative antimuscuranic, benzatropine can be imported on a named patient basis. Stop the feed and flush. Crush the tablet and disperse with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar and flush. Flush the tube ³ .	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Betahistine	(DT)* 8mg/ 5ml	Tablets could be crushed and dispersed in water if necessary.	8mg and 16mg tablets. Consider alternatives if available. Stop the feed and flush. Crush the tablet (Kent brand) and mix with 15mL water (Serc brand is water soluble but can be crushed). Draw into a syringe and flush. Rinse to ensure all medication is flushed. Flush the tube ¹	£1.33 (8mg x 84 tablets)
Betaine (anhydrous)	£90	Licensed powder for oral solution. Tablets are unlicensed.	NHSE commissioned ³⁹ refer back to specialist. Specialist use only ² . Betaine is licensed for the adjunctive treatment of homocystinuria. It should be used in conjunction with dietary restrictions and may be given with vitamin B12 supplements, folate and pyridoxine under specialist advice. Powder can be mixed with water, juice, milk, formula or food until completely dissolved ^{1,3}	£347 180g (Cystadane)
Bezafibrate	-	Tablet disperses in 10mL water	Do not crush m/r tablets. The Bezalip tablet coating does not disperse in water and there is a high risk of tube blockage ^{1,3} Stop the feed and flush. Place the tablet (not Bezalip brand) in the barrel of the syringe with 10mL water and shake gently for 5 minutes, flush. Alternatively crush the tablets, if using Bezalip, ensure it is crushed well and the coating is broken up before dispersing in water. Rinse the syringe and flush. Flush the tube. May block fine-bore tubes ^{1,3} The Actavis brand tablet has a coating which does not disperse and there is a high risk of tube blockage ¹ .	£4.53 (200mg tablets x 100)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Bicalutamide	-	Tablet could be crushed and dispersed if absolutely necessary.	<p>Pregnant women should not handle crushed or dispersed tablets^{1,3}. Stop the feed and flush. Crush the tablet and mix with 15mL water. Draw into a syringe and flush. Rinse well to ensure all medication is flushed. Flush the tube¹</p> <p>Casodex tablets do not disperse even when agitated for more than 5 minutes in 10ml water, they do crush and mix well with water to form a milky suspension¹</p>	£1.81 50mg x 28 tablets)
Biotin	£300	OroB7 tablet	<p>5mg tablets and 5mg/ml injection are unlicensed. There is no evidence of its value as a supplement; however, it can be used in the management of certain metabolic disorders⁷.</p> <p>OroB7 5mg tablet is an unlicensed brand, however, this is listed in the Drug Tariff and hence if prescribed by brand will be a fixed price. A Certificate of Analysis is kept on file.</p> <p>By mouth, tablets may be crushed and mixed with food⁷ or drink^{3,7}. There is no information on administration via a feeding tube³.</p> <p>Biotin is NHSE commissioned for multiple sclerosis¹².</p>	£33.99 (OroB7 tablet x 30)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Bisacodyl Rectal Solution	(DT)* 2.74mg/ml £243 (Aralax)	Suppositories or alternative preparation	Alternative enema or bowel cleansing preparations are available if 5mg, 10mg suppositories are not suitable ² . Please note that Aralax is an unlicensed bisacodyl suppository due to the strength- 7.5mg.	£1.04 Suppositories
Bisoprolol	(DT)* 1.25mg/5ml 2.5mg/5ml 5mg/5ml	Consider licensed atenolol liquid. Tablets disperse in 10mL water or could be crushed.	Always consider switching to a licensed product first line; licensed atenolol liquid is available if appropriate. Stop the feed and flush. Place the tablet (Cardicor or Teva) in the barrel of the syringe with 10mL water and shake gently (for 5 minutes if using Teva), flush. Rinse the syringe and flush. Flush the tube ¹ .	£0.78 (2.5mg x 28 tablets)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Bromocriptine	-	Tablets will disperse in 10mL water	Tablets will disperse in water for administration in 1-5 minutes. Light sensitive so give immediately ³	£67.62 (1mg x 100 tablets)
Bumetanide	-	Licensed liquid	Oral solution sugar-free, bumetanide 1 mg/5mL, 150mL ² . Liquid can be administered via a feeding tube ¹ Teva brand 1mg tablet disperses in 10ml water when agitated for 5 minutes. Stop the feed and flush. Add the tablet to the barrel of an oral syringe and disperse with 10mL water, shake gently and flush. Rinse the syringe and flush. Flush tube ¹ .	£198
Buspirone	-	Tablets can be crushed	Consider alternatives first. Crush and disperse in water if necessary ³	£3.81 (10mg x 30 tablets)

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BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Cabergoline	-	Tablets can be crushed	Cabaser brand of tablets can be crushed and mixed in water or dispersed in water if shaken in 10ml water for 5 minutes which can be flushed down feeding tube ¹ . Crush tablets and disperse in water if necessary ³	£64.25 1mg x 20
Calcium (carbonate)	(DT)* 500mg/ 5ml 600mg/ 5ml	Effervescent tablets are licensed	Effervescent tablets (2 preparations): Cacit tablets (calcium carbonate 1.25g) contain the equivalent of 500mg calcium or Ca ²⁺ 12.5 mmol Sandocal 1000 tablets contain the equivalent of 1g calcium or Ca ²⁺ 25 mmol Calcium carbonate 250mg effervescent tablets (unlicensed) or unlicensed strength liquids are prescribed for children as a phosphate binder in renal failure and hyperphosphataemia ^{7, 24, 25} . It is a much lower dose than the licensed preparations as these may be prescribed for children aged from 1 month old. There was a case study whereby a GP had prescribed a licensed preparation of calcium tablet which the dose was too high for a child ²⁴ . Stop the feed and flush well with water. Dissolve the tablets in 30-50mL water. Draw into a syringe and flush. Rinse the syringe and pot and flush. Flush the tube. Can also contain colecalciferol ¹	£11.81 76 tablets (Cacit) £7.95 30 tablets (Sandocal)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Calcium Resonium	-	Enema or powder for oral intake	The powder will block a feeding tube. Consider using an enema ³	£68.47
Candesartan	-	Consider ACE first line (ramipril liquid.) If ARB necessary, consider losartan suspension. Tablet can be crushed.	If possible, switch to an ACE as first line treatment (licensed ramipril liquid is available). Consider licensed losartan suspension if an ACE is unsuitable. Tablet can be crushed and dispersed if necessary ¹ .	Refer to entries for ramipril and losartan. £0.99 (8mg x 28 tablets)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Captopril		<p>Licensed liquid available.</p> <p>Consider licensed ramipril liquid.</p> <p>Tablets disperse in 10mL water</p>	<p>Licensed oral solution (brand name Noyada) 5mg/5ml, 25mg/5ml 100ml bottle. Martindale, the manufacturers of Noyada do not have any information for administration via a feeding tube³⁵.</p> <p>Stop the feed and flush. Place the tablet (Squibb/Tilomed brand) in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹. Hold the feed for 30 minutes before and after dosing³.</p>	<p>£98.21 (5mg/5ml)</p> <p>£108.94 (25mg/5ml)</p>
Carbamazepine	£175	Licensed liquid available	<p>Liquid, sugar-free, carbamazepine 100 mg/5 mL 300-mL pack².</p> <p>The liquid may adsorb to the feeding tube. Dilute with equal parts water. If giving high doses, dilute more to avoid osmolarity associated diarrhoea¹. Suppositories are also available²</p> <p>If prescribing a licensed formulation, the MHRA have issued guidance to advise that patients should receive a consistent supply of the same brand if treated for epilepsy (generic or proprietary)³³.</p>	£6.12
Carbimazole	(DT)* 10mg/5ml	Tablets will disperse in 10mL water (shake vigorously)	<p>5mg and 20mg tablets.</p> <p>Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake vigorously, flush. Rinse the syringe and flush. Flush the tube¹.</p>	<p>£59.21 5mg (100)</p> <p>£165.42 20mg (100)</p>

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Carvedilol	(DT)* 5mg/ 5ml	Consider licensed atenolol liquid. Tablets will disperse in 10mL water	Always consider switching to a licensed product first line; licensed atenolol liquid is available if appropriate. Stop the feed and flush. Place the tablet (Teva) in the barrel of the syringe with 10mL water and shake vigorously for 5 minutes (there will be visible particles but do not block feeding tube), flush. Rinse the syringe and flush. Flush the tube ¹	£1.07 (25mg x 28 tablets)
Celecoxib	-	Switch to ibuprofen or stop if possible. Capsules can be opened	Review the patient for need. Switch to ibuprofen or naproxen if possible. Stop the feed and flush. Capsules can be opened and mixed with water to form a milky suspension. Flush down the line. Rinse the syringe and flush. Flush the tube ¹ Contents of capsule can be mixed with pudding or apple sauce to patients with swallowing difficulties ^{1,3} .	£1.91 (100mg x 60 capsules)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Cetirizine	-	Licensed liquid available	Oral solution, cetirizine hydrochloride 5mg/5mL, 200mL ² . Can be given via a feeding tube ¹	£1.58
Chloral Hydrate	(DT)* 500mg/5ml 1g/5ml	Review need.	Review if still needed.	£244.25 (143.3mg/5ml, 150ml)
Chlordiazepoxide	-	Switch to temazepam/diazepam licensed liquid	Switch to a licensed formulation if possible e.g. temazepam, diazepam. If not, capsules can be opened and mixed with water ³	£11.50 (5mg x 100 capsules)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Chlorothiazide	(DT)* 150mg/5ml 250mg/5ml	No information. Seek specialist advice	Both tablets and liquid are unlicensed. The liquid can be given via a feeding tube ³ Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ³	-
Chlorphenamine	-	Licensed liquid available.	Oral solution, chlorphenamine maleate 2mg/5mL, 150mL ² . Can be used via a feeding tube ¹	£2.62
Chlorpromazine	-	Licensed liquid available	Oral solution, chlorpromazine hydrochloride 25 mg/5mL or 100mg/5mL, 150mL ² . Can be used via a feeding tube ¹	£2.35 (25mg/5ml) £5.50 (100mg/5ml)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ciclosporin (eye)	(DT)* 0.05% 0.4ml unit dose (P/F) 0.2% eye oint	0.1% 0.3ml unit dose	Refer to Ophthalmic special order products table below by The Royal College of Ophthalmologists.	£72 (0.3ml x 30)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ciclosporin (oral)	-	Caution: Licensed Neoral liquid is available, but ask for advice.	Caution: Contact Medicines management for advice on brand / dose. Licensed liquid sugar-free 100mg/ml, 50ml but do not flush the tube with water immediately following administration. Use an equal volume of orange juice, squash, apple juice, water and leave one hour before giving the next medication. Due to the oily component of the ciclosporin solution adherence to feeding tube may occur ^{1,3} For swallowing difficulties, can mix with water, orange juice, squash or apple juice to improve taste but not grapefruit juice (interaction) ^{1,3}	£102.50
Cimetidine	-	Licensed liquid available	Oral solution, cimetidine 200mg/5mL, 300mL ² . Also available as sugar-free. Monitor sorbitol content. Hold the feed for 1 hour before and after dosing ³ .	£14.25 Sugar-free 300ml £28.49 Oral solution 600ml
Cinnarizine	-	Chewable tablets available or disperse in 10mL water	Stop the feed and flush. Place the tablet (Teva) in the barrel of the syringe with 10mL water and shake gently for 5 minutes, flush. Rinse the syringe and flush. Flush the tube ¹ . The Stugeron brand may be sucked or chewed ¹ .	£4.74

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ciprofloxacin drops	£70	Licensed eye drops	<p>Ciprofloxacin 0.3% eye drops, 5ml.</p> <p>The eye drops are licensed for ophthalmological use, but can also be prescribed, albeit an unlicensed indication, for ear infection.</p> <p>Ciprofloxacin eye drops are on the Barking Havering Redbridge NHS trust formulary⁴⁰ for otitis media and perforated ear drum (acknowledges unlicensed indication.)</p> <p>Caution: there is an EU licensed ciprofloxacin 0.3% ear drops, if this is prescribed instead of the eye drops, there is a possible delay to treatment due the availability and delivery of imported medicines.</p>	£4.70

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ciprofloxacin (oral)		Licensed liquid available.	<p>250mg/5ml, 100ml very thick suspension- do not use via enteral tube as there is a high risk of blockage^{1,2}.</p> <p>Stop the feed and flush. Place the tablet (some brands disperses within 2-5 minutes¹) in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube. Ciproxin brand tablets have been crushed and mixed with 50ml water¹</p> <p>The absorption of ciprofloxacin is reduced with enteral feeds. Stop feed 1 hour before dose and restart feed 2 hours after dose³</p>	£21.29

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Citalopram	-	Licensed oral drops	<p>Oral drops, citalopram (as hydrochloride) 40 mg/mL, 15mL. Four drops (8 mg) is equivalent in therapeutic effect to a 10mg tablet.</p> <p>Mix with water, orange juice, or apple juice before taking³. Can be given via a feeding tube¹ Drop the required number of drops into a container and dilute with water. Draw this fluid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube¹</p> <p>The tablets have been crushed and dispersed in water but they may taste unpleasant³.</p> <p>Stop the feed and flush. Place the tablet (Mylan brand) in the barrel of the syringe with 10mL water and shake gently for 5 minutes, flush. Rinse the syringe and flush. Flush the tube¹.</p>	£4.58

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Clarithromycin	-	Licensed oral suspension and granules	<p>Oral suspension: 125mg/5ml, 70ml, 100ml; 250mg/5ml, 70ml (other pack sizes maybe available.) Granules: 250mg per sachet, 14 sachets.</p> <p>The oral suspension is thick and can block an enteral tube. The dose should be diluted with an equal volume of water immediately prior to administration, however, there is still a risk of tube blockage with very fine-bore tubes^{1,2}.</p> <p>There is no information on giving granules or standard release tablets via enteral feeding tubes¹.</p> <p>Patients on 500mg modified-release tablets should be converted to standard release dosage i.e. 250mg twice daily².</p>	<p>125mg/5ml £4.26 (70ml)</p> <p>250mg/5ml £5.77 (70ml)</p> <p>£11.68 (14 sachets)</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Clindamycin	(DT)* 75mg/ 5ml	Empty capsule contents	<p>Only prescribe on microbiologist advice. Paediatric suspension has been discontinued in UK but is still available to import¹.</p> <p>Capsules 75mg, 150mg can be opened easily and the powder pours from the capsules when squeezed. Care must be taken to ensure the entire contents of the capsule are emptied out. Clindamycin is very soluble in water¹.</p> <p>The capsule contents taste very unpleasant and have been mixed with grape juice or maple syrup³.</p> <p>Stop the feed and flush. Open the capsule and pour the contents into a medicine pot. Add 15ml of water. Stir to disperse the powder. Draw into the syringe and administer via the feeding tube. Add another 15ml of water to the medicine pot and mix to ensure the remaining powder is mixed. Draw into the syringe and flush. Rinse the syringe and flush. Flush the tube¹.</p>	£4.17 150mg capsules x 24
Clobazam		<p>Licensed oral suspension.</p> <p>Tablets will disperse in 10mL water.</p>	<p>5mg/5ml, 150ml and 10mg/5ml, 150ml oral suspension sugar-free. Manufacturer (for Tapclob) has no information on administration via a feeding tube³¹</p> <p>Frisium tablets can be dispersed in water or can be crushed. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹.</p> <p>If prescribing a licensed formulation, the MHRA have issued guidance to advise the need for continued supply of a particular manufacturer's product should be based on clinical judgement and consultation with patient/carer taking into account factors such as seizure frequency and treatment history for epilepsy (generic or proprietary)³³.</p>	<p>£90 5mg/5ml</p> <p>£95 10mg/5ml</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Clomethiazole	£348	Licensed syrup.	<p>Licensed syrup: Clomethiazole edisilate 50mg/ml equivalent to 31.5mg/ml clomethiazole.</p> <p>The syrup will need to be stored in a refrigerator at 2° to 8°C.</p>	£30
Clonazepam	<p>(DT)</p> <p>2.5mg/ml</p>	<p>Licensed liquid</p> <p>Tablets will disperse in 10mL water</p>	<p>Oral solution (Rosemont), 0.5mg/5ml and 2mg/5ml, both in 150ml sizes. The solution is incompatible with polystyrene or PVC and for oral syringes, the solution may cause the plunger to stop moving smoothly or the markings may fade over time. Contains ethanol. Not indicated for paediatric use⁵.</p> <p>The Rosemont brand solution is licensed for non PVC NG or PEG tube. Stop the feed and flush, draw the medicine into a syringe and administer. Flush the feeding tube with 10ml water three times (due to the oily nature of the medicine)⁵.</p> <p>Stop the feed and flush. Place the tablet in the barrel of the syringe with 30mL³ water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹</p> <p>If prescribing a licensed formulation, the MHRA have issued guidance to advise the need for continued supply of a particular manufacturer's product should be based on clinical judgement and consultation with patient/carer taking into account factors such as seizure frequency and treatment history for epilepsy (generic or proprietary)³³.</p>	<p>£69.50 (0.5mg/5ml)</p> <p>£108.36 (2mg/5ml)</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Clonidine liquid	(DT) * 50mcg/ 5ml	Tablets can be crushed	Tablets (Catapres: 100mcg or 300mcg and Dixarit 25mcg) can be crushed ¹ . The 100 mcg tablets can be dispersed in water within 2 minutes ¹ . Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	£8.04 (100mcg tablets x 100)
Clonidine patch		Dependent on indication	Alternatives will depend on the indication treated (hypertension, smoking cessation and menopausal hot flushes)	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Clopidogrel	(DT) * 1mg/ml 75mg/ 5ml	Review need. Crush and disperse in water if necessary.	Review need/duration. Stop the feed and flush. Crush the tablet and disperse with 15mL water (most brands take 1-5 minutes, some longer ³). Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar and flush. Flush the tube ¹ . Plavix brand tablets do not disperse readily in water. The tablets can be crushed (although difficult due to the coating) and then mixed with 10ml of water, the resulting suspension can be flushed down a feeding tube ¹ .	£1.29
Coal Tar and Salicylic ointment BP	(DT) *		See BAD list	
Coal Tar solution 6% / Salicylic acid 2% in ointment	(DT) *		See BAD list	
Coal Tar Solution 5% in Betamethasone Valerate 0.025% ointment	(DT) *		See BAD list	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Co-amilofruse	£350	Use licensed liquids of amiloride and furosemide separately. Tablets will disperse	Use the licensed components first line. If necessary to use combined tablet, stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	
Co-amilozide	-	Tablets will disperse in 10mL water	Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	£1.17
Co-amoxiclav	-	Oral suspension	Oral suspension: '125/31' (125mg/31mg/5ml) 100ml '250/62' (250mg/62mg/5ml) 100ml '400/57' (400mg/57mg/5ml) 35ml, 70ml. No specific data on enteral tube administration is available for generic brands of co-amoxiclav suspension ¹ . Augmentin suspension is resistant to flushing. Mixes with an equal volume of water only if shaken ¹ . The manufacturer has no information on administration via enteral feeding tube ³² .	£2.43 '250/62' Suspension

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Co-beneldopa	£303	<p>Contact medicine management</p> <p>Complex. Madopar dispersible tablets are licensed.</p>	<p>Contact medicine management.</p> <p>Leave a break in feeding if high protein feeds are used and administer at the same time each day to avoid fluctuation³.</p> <p>Stop the feed for one hour and flush. Place the Madopar dispersible in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube^{1,3}</p>	£10.45 (100/25 disp tablets x 100)
Co-careldopa	<p><u>(DT)</u>*</p> <p>12.5mg/50mg/5ml</p> <p>25mg/100mg/5ml</p>	<p>Contact medicine management</p> <p>Complex.</p> <p>Sinemet non-MR will disperse.</p> <p>Consider Madopar dispersible.</p>	<p>Contact medicine management.</p> <p>No evidence for use of generic tablets in feeding tubes¹.</p> <p>Leave a break in feeding if high protein feeds are used and administer at the same time each day to avoid fluctuation³.</p> <p>Stop the feed for one hour and flush. Place the Sinemet non-MR in the barrel of the syringe with 10mL water and shake gently, use immediately, flush. Rinse the syringe and flush. Flush the tube¹</p> <p>The standard lower strength Sinemet tablets will disperse in 1 minute, the 25/250 strength will disperse in 1-5 minutes. Give immediately as the drug will oxidise³.</p>	

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Co-codamol	-	Dispersible tablets. Caution re: sodium content.	8/500 and 30/500 dispersible tablets. Stop the feed and flush. Dissolve the tablet in 50mL water. Draw into a syringe and flush. Rinse and flush. Flush the tube ¹ .	£7.13
Co-dydramol	(DT) * 10mg/ 500mg/ 5ml	Switch to co-codamol dispersible tablets		
Colchicine	-	Disperse in 10mL water	Tablets will disperse in water within 1-2 minutes to give a coarse dispersion that breaks up further when drawn into the syringe ^{1,3}	£12.51

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Colecalciferol (low dose for maintenance therapy)	£233	<p>Licensed capsules, tablets and liquid now available</p> <p>Please refer to updated Vitamin D Formulary Guidance</p> <p>Caution: Capsules not suitable for peanut or soya allergy</p>	<p>Fultium D3 capsules which can be prescribed generically, contain 800 IU colecalciferol (equivalent to 20 mcg of vitamin D3) to be swallowed whole. Contains arachis oil- not suitable for peanut or soya allergy. Not licensed for children under 12 years. Also contains gelatine.</p> <p>Desunin tablets which can be prescribed generically, contain 800 IU colecalciferol (equivalent to 20 mcg of vitamin D3) and can be crushed⁵.</p> <p>Colecalciferol 1,000 unit tablets, 28 is in the Drug tariff. Stexerol-D3 is suitable for vegetarians, however, as the vitamin D3 is obtained from lanolin sourced from sheep's wool, this may not be suitable for vegans. Although Stexerol-D3 does not contain ingredients sourced from nuts or soya derivatives, there is no guarantee that this is manufactured in a nut free environment. It also has Halal and Kosher certification. This is not on formulary but is a licensed preparation.</p> <p>Colecalciferol 1,000 unit capsules, 30 is in the Drug Tariff (contains gelatin).</p> <p>Licensed oral solution: 2,740 units/ml oral drops sugar free, 25ml.</p> <p>Aciferol D3 2,000 units/ml, 3,000 units/ml oral solution, 100ml are unlicensed specials listed in Drug Tariff.</p>	<p>£3.60 (30 x 800iu capsules)</p> <p>£3.60 (30 x 800iu tablets)</p> <p>£2.95 (28 x 1,000iu tablets)</p> <p>£3.16 (30 x 1,000iu capsules)</p> <p>£10.70 2,740 units/ml oral drops sugar free, 25ml</p> <p>£18 2,000 units/ml 100ml</p> <p>£24.99 3,000 units/ml (Aciferol)</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Colecalciferol (High dose for deficiency or insufficiency treatment > 2000units)	(DT)* 5,000 units/5ml 10,000 units/5ml 20,000 units/ml	Please refer to updated Vitamin D Formulary Guidance	<p>Hux D3 20,000 IU capsules is 1st line product choice. Please refer to updated Vitamin D Formulary Guidance. Consider risk vs benefit. No info on use in feeding tubes.</p> <p>Licensed capsules/tablets: 3,200 unit capsules, 30 4,000 unit tablets, 70 20,000 unit capsules, 15, 30. 25,000 unit tablets, 12 40,000 unit capsules, 10</p> <p>Licensed oral solution: 10,000 units/ml oral drops sugar free 10ml, 10,000 units/ml oral solution sugar free 2.5ml and 4 x 2.5ml 15,000 units/5ml oral solution, 100ml 25,000 units/ml oral solution sugar free unit dose ampoules, 3 50,000 units/ml oral solution sugar free unit dose ampoules, 3</p> <p>Refer to the BHRuT guidance below for management of vitamin D deficiency but please refer to the updated vitamin D formulary guidance for recommended products for adults as this has the latest recommendations.</p> <p>See BHRuT NHS Vitamin D guidance on diagnosis and management of vitamin D deficiency in adults</p> <p>See local BHRuT Vitamin D paediatric shared care guidelines</p>	£2.62 x 20 £3.93 x 30 (Hux D3) £13.32 3,200 unit caps x 30 £15.90 4,000 unit caps x 70 £29 20,000 unit caps x 30 £17 25,000 unit tabs x 12 £15 40,000 unit caps x 10 £5.85 10,000 units/ml drops s/f 10ml, £1.55, 2.5ml £144 15,000 units/5ml, 100ml £4.45 25,000 units/ml s/f amps x 3 £6.25 50,000 units/ml s/f amps x 3

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Colestyramine	-	Licensed sachets	Flush feeding tubes very well after use. Do not give other medication for one hour before the dose and 4-6 hours after the dose as it can affect absorption of other medication ³ . For swallowing difficulties, sachets can be mixed with water, fruit juice, skimmed milk, thin soups, fruit smoothies or fruit sauces e.g. apple sauce ^{1,3}	£10.76 (Questran) £28.45 (generic sugar-free)
Co-Tenidone	-	Consider alternatives. Crush and disperse if necessary.	Consider switching to licensed constituent products first line. Atenolol liquid is available and consider bendroflumethiazide if appropriate ² . Can be crushed and dispersed in water ³	£1.67
Cyclizine	(DT)* 50mg/ 5ml	Tablet will disperse in 10mL water	Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake vigorously, flush. Rinse the syringe and flush. Flush the tube ¹ . Tablets are light sensitive ³ .	£6.94
Cyproterone	-	Tablets will disperse in water	50mg and 100mg tablets. No information on use in feeding tubes. Tablets will disperse in water for oral use ³ .	£55.19 (100mg)

Dd...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Dantrolene	<p>(DT)*</p> <p>10mg/5ml</p> <p>25mg/5ml</p> <p>100mg/5ml</p>	Open capsules	<p>25mg and 100mg capsules.</p> <p>No information on use in feeding tubes. Open capsule and mix with orange juice (to maintain acidity) for oral use³.</p>	£43.07 (100mg capsules x 60)
Demeclocycline	£650	Capsules	<p>150mg capsules.</p> <p>Capsule contents are sparingly soluble in water and are not recommended to be put down enteral tube as this has led to blockage^{1,3}. If necessary, a suspension should be prescribed and withhold enteral feeds for two hours before and one hour after each dose³.</p> <p>The capsule contents may cause severe irritation to the mucosa, so they should not be opened for swallowing difficulties either³.</p> <p>If capsules are unavailable and treatment is essential e.g. for chronic hyponatraemia associated with the syndrome of inappropriate secretion of antidiuretic hormone (SIADH), there are 2 unlicensed forms of demeclocycline which can be imported from the following wholesalers:</p> <ul style="list-style-type: none"> - 150mg tablets by Amdipharm Mercury in packs of 100 - 150mg and 300mg tablets by IDIS 	£160.89

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Desmopressin	£55	Licensed formulations available	<p>Nasal spray: 10mcg/spray and 150mcg/spray.</p> <p>Nasal drops: 100mcg/mL (to be used for doses under 10mcg in children)</p> <p>Sublingual tablets: 60mcg, 120mcg and 240mcg oral lyophilisates.</p>	£23.72 10mcg Nasal spray
Dexamethasone eye drops preservative free (P/F)			Refer to Ophthalmic special order products table below by The Royal College of Ophthalmologists.	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Dexamethasone (oral)	-	Licensed soluble tablets Licensed liquid	2mg, 4mg, 8mg soluble tablets sugar free, 50 tablets. Oral solution, sugar-free, dexamethasone (as dexamethasone sodium phosphate) 2 mg/5 mL, 150-mL. 10mg/5ml, 150ml 20mg/5ml, 50ml Can be used via a feeding tube ^{1,3} . If there is a need to use the standard tablet. Stop the feed and flush. Place the tablet (Aspen brand) in the barrel of the syringe with 10mL water and allow to disperse, flush. Rinse the syringe and flush ¹ .	£30.72 50 x 2mg £61.41 50 x 4mg £122.54 50 x 8mg £42.30 150ml (2mg/5ml) £94.44 150ml (10mg/5ml) £49.50 50ml (20mg/5ml)
Dexamfetamine	-	Licensed liquid	5mg/5ml oral solution sugar free, 500ml. No information on administration via enteral feeding tubes has been located ³ .	£114.49
Dialyvit® (Renal multivitamins)	£90	Specialist advice	This unlicensed preparation is no longer recommended by Barts Health for renal dialysis patients and have switched all patients to Renavit- see monograph	

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Diazepam		Oral suspension 2mg/5ml Oral solution 2mg/5mL sugar-free	Licensed liquid available, Diazepam Syrup 2mg/5mL suspension and oral solution, sugar-free 100ml. Please note that the 5mg/5ml strength is not allowable on an NHS prescription (Black listed) ⁴ Disperse tablets if intrajejunal administration is required ¹	£31.75
Diazoxide	<u>(DT)</u> * 50mg/5ml 250mg/5ml	Seek specialist advice.	No information on enteral tube usage of diazoxide.	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Diclofenac	-	Review need. Switch to ibuprofen	Review need. Switch to ibuprofen or naproxen if necessary.	
Digoxin	-	Use licensed elixir	Elixir, digoxin 50 micrograms/mL 60 mL ² . Do not dilute, measure with pipette. May be affected by high fibre feeds, leave a break if possible and flush well. There is a dose reduction but in practice it is thought to have little impact, bioavailability 75%. High osmolarity but volume is small ¹ . 62.5mcg tablet equivalent to 50mcg (1ml) elixir. High fibre feeds only: stop feed 2 hrs before dose, restart feed 1 hours after dose ³ .	£5.35

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Dihydrocodeine	-	Use licensed solution	Oral solution, dihydrocodeine tartrate 10 mg/5mL, 150 mL ² . Can be administered via a feeding tube ¹	£7.83
Diltiazem	(DT)* 60mg/ 5ml	Consider alternatives. Non-MR tablets can be crushed/ capsules can be opened.	Do not crush modified release tablets. Open capsules for oral intake, do not crush the contents. Only immediate release tablets can be crushed. Crush and disperse tablets for enteral feeding. Monitor response ¹	£41.59 (m/r tablets x 84) £7.96 (Tildem m/r tablets x 90)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Diltiazem cream	(DT)* 2% 30g Cream and oint	GTN 0.4% ointment is first line. Anoheal® is second line.	Glyceryl trinitrate 0.4% ointment is a licensed product for treating anal fissures ² . Diltiazem 2% is unlicensed, however if necessary this should be prescribed as Anoheal®. This is a batch manufactured product with a PIL. The price is in Drug Tariff Part VIII B.	£39.30 GTN 0.4% ointment (Rectogesic)
Dipyridamole		Licensed oral suspension.	Oral suspension, dipyridamole 50 mg/5 mL, 200mg/5ml 150 mL ¹ . If converting from MR formulation, divide the total daily dose by 4. Can be given via a feeding tube ¹ . Hold the feed for 30 mins before and after dosing ³ . For swallowing difficulties, the capsule contents can be swallowed but not chewed ³ .	£41.06 (50mg/5ml) £133.53 (200mg/5ml)
Docusate sodium	-	Licensed oral solution	12.5mg/5ml, 300ml; 50mg/5ml, 300ml. Stop the feed and flush. Dilute solution with equal part water and flush. Rinse syringe and flush. Flush the tube ¹ .	£5.29 12.5mg/5ml £7.99 50mg/5ml

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Domperidone	-	Licensed suspension or suppositories	5mg/5ml, 200ml oral suspension. 30mg suppositories, 10 per pack. Stop the feed and flush. Dilute solution with equal part water and flush. Rinse syringe and flush. Flush the tube ¹ . Note: the MHRA has issued advice that domperidone should not be used by people who have serious underlying heart conditions (April 2014) and patients receiving domperidone require an assessment of cardiac risk factors and ECG monitoring to reduce the risk of serious arrhythmia (April 2016) https://www.gov.uk/drug-safety-update	£13.43
Donepezil	-	Orodispersible tablets Oral solution Standard tablets disperse in 10mL water	5mg and 10mg orodispersible tablets sugar-free, 28 tablets. 1mg/ml oral solution sugar-free, 150ml. Standard tablets (Aricept) can be crushed before administration or dispersed in water in 5 minutes. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ . Orodispersible tablets disperse on the tongue and are then swallowed ¹ .	£1.10 10mg x 28 £7.95 10mg x 28 orodispers £48 Oral solution sugar-free
Dosulepin	(DT)* 25mg/ 5ml 75mg/ 5ml		Dosulepin should not be used via a feeding tube. There is a risk of block tube with fragments of the coating if tablets are crushed and there is no data on the capsules. Consider switching to an alternative tricyclic antidepressant with a licensed liquid formulation e.g. Amitriptyline, cross-taper cautiously ¹⁸ . Stop the feed and flush. Place the capsule contents into a medicine pot, add 30ml water and stir. Draw into syringe and administer. Add 15ml to the pot, stir, draw, administer and flush ¹ . Capsule contents or crushed tablet powder has a local anaesthetic action if swallowed ³ .	£1.28

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Doxazosin	(DT)* 1mg/ 5ml 4mg/ 5ml	Change to standard release. Tablets disperse in 10mL water	Dexcel and Teva brands can be dispersed in water within 2 minutes ¹ . Stop the feed and flush. Crush the tablet (Cardura) and mix with 10mL deionised water (i.e. not tap water) and draw into syringe and administer, flush. Rinse the syringe and flush. Flush the tube ¹ . If changing from MR to standard release tablets, there is a bioavailability difference, halve the total daily dose of MR tablets and titrate the patient up ¹ .	£0.82 (4mg x 28 tablets)
Doxycycline	-	Dispersible tablets	100mg dispersible tablets, 8 tablets per pack. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ . Hold the feed for two hours before and 1 hour after ³ . Do not open capsules as the contents are irritant ^{1,3} .	£4.91

Ee...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Enalapril	(DT)* 1.25mg/ 5ml 5mg/ 5ml 10mg/ 5ml	Consider licensed ramipril liquid. Tablets disperse in 10mL water	Always consider switching to a licensed product first line; licensed ramipril liquid is available if appropriate. Stop the feed and flush. Place the tablet (Dexcel, Teva) in the barrel of the syringe with 10mL water and shake gently for 5 minutes, flush. Rinse the syringe and flush. Flush the tube ¹ .	Refer to ramipril entry
Entacapone	-	Tablets disperse in 10mL water	Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently for 5 minutes, flush. Rinse the syringe and flush. Flush the tube ¹ . Comtess brand of tablet is yellow/orange colour and is sparingly soluble in water. If crushed (unlicensed) there is a risk of yellow/orange staining of skin, tongue and teeth. When the tablets are crushed and mixed with water an orange supernatant with a white suspension is formed and the suspension later forms a precipitate. It is important that this is all consumed to ensure the dose is taken. One possible option is to crush the tablets and suspend in water or orange juice etc. in a small cup and then use a straw to take the dose. Entacapone has a bitter, unpleasant taste ¹¹ .	£4.65

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ephedrine nasal drops	£84	Use licensed formulation	Nasal drops, ephedrine hydrochloride 0.5% or 1% ² .	£1.93
Eprosartan	-	<p>Consider ACE first line (ramipril liquid.)</p> <p>If ARB necessary, consider losartan suspension.</p> <p>Tablet can be crushed.</p>	<p>If possible, switch to an ACE as first line treatment (licensed ramipril liquid is available).</p> <p>Consider licensed losartan suspension if an ACE is unsuitable.</p> <p>If not possible to switch, stop the feed and flush. Crush the tablet and disperse with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar and flush. Flush the tube^{1,3}</p>	<p>Refer to entries for ramipril and losartan.</p> <p>£11.53 (600mg x 28 tablets)</p>

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ergocalciferol (low dose for maintenance therapy 800units)	£545	<p>Consider colecalciferol first line-licensed capsules available.</p> <p>Please refer to updated Vitamin D Formulary Guidance</p>	<p>There is no licensed tablet of ergocalciferol alone. Multivitamins could be selected.</p> <p>More options are available for colecalciferol- licensed low dose capsules available. See colecalciferol monograph for more information.</p> <p>See local BHRuT Vitamin D paediatric shared care guidelines</p> <p>See BHRuT NHS Vitamin D guidance on diagnosis and management of vitamin D deficiency in adults</p>	
Ergocalciferol (High dose for deficiency or insufficiency treatment > 2000units)	<p>(DT)*</p> <p>1,000 units/ 5ml</p> <p>3,000 units/ml</p> <p>6,000 units/ 5ml</p> <p>10,000 units/ 5ml</p> <p>100,000 units/ 5ml</p>	<p>No UK licensed product in-stock at present.</p> <p>Please refer to updated Vitamin D Formulary Guidance</p>	<p>Colecalciferol is preferred to ergocalciferol due to better absorption.</p> <p>See colecalciferol monograph for more information.</p> <p>No info on use in feeding tubes.</p> <p>See local BHRuT Vitamin D paediatric shared care guidelines</p> <p>See BHRuT NHS Vitamin D guidance on diagnosis and management of vitamin D deficiency in adults</p>	-

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Escitalopram	-	Licensed drops.	20mg/ml, 15ml. Mix with water, orange juice, or apple juice before taking ³ .	£20.16 (Cipralext)
Esomeprazole (tablets)	-	Review need. Consider dispersible omeprazole or lansoprazole. Esomeprazole tablets (Nexium ⁵ and generic Teva and Actavis brand ²⁰) and granules ⁵ are licensed for use via a gastric tube.	Consider using dispersible omeprazole/lansoprazole first line for oral or NG use Administration through gastric tube: 1. Put the tablet into an appropriate syringe and fill the syringe with approx 25mL water and approx 5mL air. For some tubes, dispersion in 50mL water is needed to prevent the pellets from clogging 2. Immediately shake the syringe for approximately 2mins to disperse the tab 3. Check that the tip has not clogged. 4. Attach the syringe to the tube whilst maintaining the above position. 5. Shake the syringe and position it with the tip pointing down. Immediately inject 5-10mL into the tube. Invert the syringe and shake. 6. Repeat step 5 until empty. 7. Fill the syringe with 25mL of water and 5mL of air and repeat step 5 if necessary to wash down any sediment left in the syringe. For some tubes, 50mL water is needed.	£2.63 (20mg x 28 tablets)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Esomeprazole (sachets)		<p>Review need. Consider dispersible omeprazole or lansoprazole.</p> <p>Esomeprazole tablets (Nexium and generic Actavis, Ranbaxy and Teva brand) and granules⁵ are licensed for use via a gastric tube.</p>	<p>10mg Sachets are also available for oral and PEG intake.</p> <p>Administration through gastric tube:</p> <ol style="list-style-type: none"> 1. For a 10 mg dose, add the contents of a 10 mg sachet to 15 ml of water. 2. For a 20 mg dose add the contents of two 10 mg sachets into 30 ml water. 3. Stir. 4. Leave for a few minutes to thicken. 5. Stir again. 6. Draw the suspension into a syringe. 7. Inject through the enteric tube, French size 6 or larger, into the stomach within 30 minutes after reconstitution. 8. Refill the syringe with 15 ml water for a 10 mg dose and 30 ml water for a 20 mg dose. 9. Shake and flush any remaining contents from the enteric tube into the stomach. <p>Any unused suspension should be discarded.</p> <p>Refer to the SPCs for the esomeprazole tablet for administration in swallowing difficulties and via feeding tube.</p>	£25.19

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ethambutol	£940	Consider crushing and dispersing in water if necessary.	Medicines for the treatment of tuberculosis are hospital only. However, if necessary, stop the feed and flush. Crush the tablet and disperse with 15mL water. The coating takes a few minutes to dissolve. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar and flush. Flush the tube ¹ .	£42.74 (400mg x 28 tablets)
Ezetimibe	-	Review need. Tablets disperse in 10mL water	Review need. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently for 5 minutes, flush. Rinse the syringe and flush. Flush the tube ¹ .	£26.31

Ff...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Felodipine	-	Consider switch to suitable licensed alternative or amlodipine.	No evidence for dispersing felodipine. Consider dispersing amlodipine, still off-licence but may be preferable to an unlicensed liquid.	
Fenofibrate	-	Open capsules	Open capsules into a medicine pot and disperse in 15ml water, draw into a syringe and administer. Rinse the beaker and administer the rinsings, flush ³ . The capsule contents have been administered in orange juice to patients with swallowing difficulties ³ .	£4.58
Ferrous sulfate	(DT)* 60mg/ 5ml	Switch to licensed Ironorm ferrous sulfate 125mg (25 mg iron) /mL or ferrous fumarate 140mg (45 mg iron) /5 mL	Switch to a licensed formulation ² . Iron content of different iron salts ² : Ferrous fumarate 210 mg = 68 mg ferrous iron Ferrous gluconate 300 mg = 35 mg ferrous iron Ferrous sulphate 300 mg = 60 mg ferrous iron Ferrous sulphate, dried 200 mg = 65 mg ferrous iron	£30 125mg/ml oral drops 15ml (Ironorm) £3.73 140mg/5ml syrup 200ml (ferrous fumarate)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Fexofenadine	-	Switch to cetirizine or loratidine which have licensed liquid formulations.		
Finasteride	-	Caution. Tablets disperse in 10mL water	Women of child bearing age should not handle crushed, broken or dissolved tablets. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	£1.11

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Flecainide	(DT)* 10mg/ 5ml 25mg/ 5ml	Tablets can be crushed. Injection available.	Consider alternatives. Review need. 50mg and 100mg tablets. Also 10mg/ml injection but no information on enteral administration. The crushed tablets have a local anaesthetic effect so should be used with care in patients with swallowing difficulties ³ Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹	£10 (50mg x 60 tablets)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Fluconazole	-	Licensed suspension	<p>Oral suspension, orange-flavoured, fluconazole for reconstitution with water, 200mg/5mL or 50mg/5mL, 35mL. Hold feed for one hour before and after dosage³.</p> <p>If the suspension is not available, the capsules can be opened and washed down the tube with plenty of water. Powder from 150mg capsules does not mix well with water¹.</p>	<p>£20.51 (50mg/5ml)</p> <p>£66.42 (200mg/5ml)</p>
Fludrocortisone	<p><u>(DT)</u>*</p> <p>50mcg/ 5ml</p> <p>100mcg / 5ml</p>	Tablets disperse in 10mL water	Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	£24.81

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Fluoxetine	-	Use licensed liquid Dispersible tablet which can be halved	Liquid, fluoxetine (as hydrochloride) 20mg/5mL, 70mL sugar and sugar free. Can also be used via a feeding tube ¹ . 20mg dispersible tablet also available and is scored so can be divided into equal halves. Please note the 10mg tablet is unlicensed.	£2.99 70ml Liquid £12.95 70ml liquid sugar-free £3.44 20mg dispersible tablets x 28
Flupentixol	-	Tablets disperse in 10mL water	Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently for 5 minutes (due to sugar coating), flush. Rinse the syringe and flush. Flush the tube ¹ . Tablets can be crushed and mixed with fruit juice for patients with swallowing difficulties ³ .	£4.86 (1mg x 60 tablets)
Fluphenazine	-	Specialist advice: Consider alternative or use depot treatment.	Review formulation with specialist support. Tablets are unlicensed, they could be crushed and dispersed but it is difficult. The depot or another antipsychotic is preferred, but do not stop fluphenazine therapy suddenly ¹⁹ .	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Folic Acid		Use licensed strength of liquid	Syrup, 2.5 mg/5 mL, 5mg/5ml sugar-free 150 mL ² . Syrup (2.5mg/5ml) can be used via a feeding tube ¹	£9.16 (2.5mg/5ml) £13.74 (5mg/5ml)
Fosfomycin		Licensed granules for oral solution	<p>3g granules per sachet. Prescribe as Monuril 3g granules to ensure that an unlicensed preparation is not issued.</p> <p>It should be taken on an empty stomach (about 2-3 hours before or 2-3 hours after a meal), preferably before bedtime and after emptying the bladder. The dose should be dissolved into a glass of water and taken immediately.</p> <p>Refer to local antimicrobial primary care guidelines. Fosfomycin is recommended for 3rd line treatment of community acquired UTI caused by E coli with extended spectrum Beta-lactamases (ESBL) in patients with penicillin allergy.</p>	£4.86 per sachet
Furosemide		Use licensed strength	<p>Oral solution, sugar-free, furosemide, 20 mg/5 mL, 150 mL; 40 mg/5 mL, 150 mL; 50 mg/5 mL, 150 mL².</p> <p>Can be used via a feeding tube¹. Note: Some brands may contain alcohol.</p>	£14.81 20mg/5ml £18.69 40mg/5ml £20.21 50mg/5ml

Gg...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Gabapentin	-	Licensed oral solution Capsules can be opened.	Licensed oral solution 50mg/ml, 150ml. Stop feed and flush. Open the capsule and disperse the contents with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the container and syringe, and flush. Flush the tube ¹ . If prescribing a licensed formulation for epilepsy, the MHRA have issued guidance to advise it is usually unnecessary to ensure that patients are maintained on a specific manufacturer's product unless there are specific reasons such as patient anxiety and risk of confusion or dosing errors (generic or proprietary) ³³ .	£69 (150ml) £3.07 (300mg capsules)
Galantamine	-	Licensed oral solution ²	4mg/ml, 100ml oral solution. Stop the enteral feed and flush. Draw the required liquid into a syringe and dilute with water. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹ . If solution is not available, stop the feed and flush. Place the tablet (Reminyl) in the barrel of the syringe and disperse (in 5 minutes) in 10ml water, flush. Rinse the syringe and flush. Flush the tube ¹ .	£120 (Reminyl)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Glibenclamide	£71	Tablets disperse in 10mL water	To be given shortly after the feed has started (if applicable). Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	£2.32 (5mg x 28 tablets)
Gliclazide	(DT) * 40mg/5ml 80mg/5ml	Tablets disperse in 10mL water	Do not crush the m/r tablets ^{1,3} . The 30mg m/r tablet is approximately equivalent to 80mg tablet ^{1,3} . Stop the feed and flush. Place the tablet (Workhardt) in the barrel of the syringe with 10mL water and shake gently for 2-3 minutes, flush. Rinse the syringe and flush. Flush the tube ¹ . Crush tablets well and mix with water or orange juice for patients with swallowing difficulties ³ .	£3.36 (40mg x 28 tablets)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Glimepiride	-	Tablets disperse in 10mL water	To be given shortly before the first bolus feed of the day (if applicable). Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	£1.04 (4mg x 28 tablets)
Glipizide	-	Consider alternatives. Crush and disperse in water if absolutely necessary.	The feed should be held for 30 minutes before and after dosing. Crush the tablet and disperse with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar and flush. Flush the tube ^{1,3}	£1.92
Glyceryl trinitrate	(DT) * 0.2% 30g	Lots of licensed formulations are available. Check the BNF for indication and formulation.	Rectal ointment, glyceryl trinitrate 0.4%, 30 g; Aerosol spray, glyceryl trinitrate 400 micrograms/metered dose, 200-dose unit; Sublingual tablets, glyceryl trinitrate 300/500/600 micrograms; Patches, self-adhesive, glyceryl trinitrate, '5' or '10' patch ²	£39.30 GTN 0.4% ointment

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Glycopyrronium (oral)	(DT)* 200mcg /5ml 500mcg /5ml 2mg/ 5ml 2.5mg/ 5ml 5mg/ 5ml		Licensed 1mg and 2mg tablets and 1mg/5ml, 400mcg/ml oral solution sugar-free 1mg/5ml oral solution: The dosage cup supplied with the oral solution should be washed after each use with clean water (do not put it in a dishwasher). The presence of high fat food reduces oral bioavailability if glycopyrronium is taken shortly after a meal, therefore it should be taken at least one hour before or two hours after meals ⁵ . 400mcg/ml oral solution comes with an oral syringe and adaptor.	£215.99 1mg x 30 tablets £237.59 2mg x 30 tablets £91 1mg/5ml x 150ml £320 400mcg/ml x 250ml
Glycopyrronium (topical)	(DT)* 0.05%		Please note: glycopyrronium powder is on the hospital only list.	
Griseofulvin	(DT)* 125mg/ 5ml 175mg/ 5ml	Tablets can be crushed	Licensed 125mg, 500mg tablets Fulsovin 125mg/5mL 100mL has been discontinued. Although the use would be unlicensed, the manufacturer (Chemidex Pharma) has stated that crushed tablets could be administered on a spoon with a little jam or yoghurt and then flushed down with a glass of water. It is insoluble in water. The tablets are not scored. Females should not handle crushed tablets to avoid possible absorption through the skin. SPC states that doses should be taken after meals otherwise absorption is likely to be inadequate ²⁹ . There is no data yet on its use in feeding tubes. Also consider terbinafine.	£96.67 125mg x 100 tablets £100.17 500mg x 100 tablets

Hh...

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Haloperidol		Licensed oral solution	Oral liquid, sugar-free, haloperidol 1 mg/mL or 2mg/mL, 100-mL ² . Can be used via feeding tubes ¹ .	£6.47 1mg/ml
Hydrocortisone	(DT)* 5mg/ 5ml 10mg/ 5ml		Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube. No specific information on the generic brand (now Concordia) tablet in feeding tubes ¹ .	£61.99 (10mg x 30 tablets) £99.90 (20mg x 30 tablets)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Hydroxycarbamide	(DT)* 200mg/ 5ml 500mg/ 5ml	Caution Cytotoxic: Contact medicines management for advice. Capsules can be opened but skin must be protected. Tablets can be disintegrated immediately in a small quantity of water in a teaspoon.	Caution Cytotoxic: Contact MM for advice. Only open capsules if absolutely necessary. Gloves and protective equipment to be used. Stop the feed and flush. Open the capsule, disperse the contents with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the container and syringe, and flush. Flush the tube ¹ . Dispose of all materials (syringe and gloves, etc) as cytotoxic waste. The tablets are available in 100mg and 1000mg strength. Tablets can be disintegrated immediately before use in a small quantity of water in a teaspoon. Adding a drop of syrup or mixing with food can mask a possible bitter taste (licensed method of administration ⁵ .) The 1000mg tablet is scored and can be split into 4 equal parts but use protective measures as above. Any powder spilled should be wiped up with a damp disposable towel and discarded.	£12.03 (500mg capsules) £100 (100mg tablets x 60) £500 (1000mg tablets x 30)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Hydroxychloroquine	£187	Crush and disperse the tablets	Tablets could be crushed and dispersed in water immediately prior to administration if necessary ³	£3.73
Hyoscine Butylbromide	(DT)* 10mg/ 5ml	Use injection IM or orally	The tablets (10mg) are sugar-coated, do not crush because of the risk of tube blockage ^{1,3} . Stop the feed and flush. Draw up required amount of injection, flush down the feeding tube. Rinse the syringe and flush. Flush the tube ¹ . This may not be well absorbed enterally or jejunally ³ .	£3.00
Hyoscine Hydrobromide	(DT)* 300mcg /5ml 500mcg /5ml	Use the injection, patch or chewable tablets.	150mg, 300mg tablets (Joy rides and Kwells brands) can be chewed ⁵ . The Kwells brand tablets can be sucked ⁵ . No specific data on enteral tube administration is available for tablets ¹ . Consider the SC/IM injection first line depending on dose. Scopoderm patch, releases hyoscine approx. 1 mg/72 hours when in contact with skin. Apply patch to area behind the ear on hairless skin. Replace every 72 hours ^{1,2} .	£5.72 (5 Patches)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Hypromellose Eye Drops	(DT) * 0.25%	Licensed product	Refer to Ophthalmic special order products table below by The Royal College of Ophthalmologists.	
Hypromellose Eye Drops preservative free (P/F)	£98	Various licensed products	Refer to Ophthalmic special order products table below by The Royal College of Ophthalmologists.	

Ii...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ibuprofen	-	Licensed oral suspension. Licensed orodispersible tablets sugar free	100mg/5ml oral suspension (and sugar-free version). 200mg orodispersible tablets sugar free. Review need. Stop the enteral feed and flush. Draw the required liquid into a syringe and dilute with water. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹	£1.27 100ml sugar-free £8.88 500ml £2.19 12 tablets
Imipramine	-	Licensed oral solution (Rosemont)	Imipramine hydrochloride licensed oral solution, 25mg/5mL 150mL. If solution not available, crush the tablet well (Actavis) and disperse with 10mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar and flush ¹ .	£42
Indapamide	-	Standard tablets can be crushed	Do not crush the 1.5mg m/r tablets, use the standard 2.5mg tablets ^{1,3} . Stop the feed and flush crush the tablet well (Natrlix) and disperse with 10mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar and flush ¹ .	£1.02

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Indometacin	(DT) * 25mg/ 5ml	Use suppositories	100mg suppositories, 10 per pack. Capsules should not be opened (irritant to stomach) and do not crush m/r tablets ^{1,3} . Use suppositories at night. Indo-Paed is a 25mg/5ml suspension licensed in Germany (will require importing) ¹ .	£17.61
Irbesartan	£381	Consider ACE first line (ramipril liquid.) If ARB necessary, consider losartan suspension. Tablets will disperse in 10mL water	If possible, switch to an ACE as first line treatment (licensed ramipril liquid is available). Consider licensed losartan suspension if an ACE is unsuitable. Irbesartan: Place the tablet (Aprovel) in the barrel of the syringe with 10mL water and shake gently for 2-5 minutes to form a milky suspension, flush. Rinse the syringe and flush. Flush the tube ¹ .	Refer to entries for ramipril and losartan. £1.24 (150mg tablet)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Isoniazid	(DT) * 50mg/ 5ml	Tablets disperse in 10mL water	Medicines for the treatment of tuberculosis are hospital only. However, if necessary, hold the feed for 30 minutes before and after dosing ³ . Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	£19.24
Isosorbide dinitrate/ mononitrate	(DT) * 20mg/ 5ml (mono)	Unless critical care, consider switching to GTN patches.	Consider glyceryl trinitrate patches first line. Modified release tablets cannot be crushed but avoid crushing all brands. Isosorbide dinitrate and mononitrate may be crushed and disperse in water (non MR) ³ .	

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ispaghula husk	-	Can be taken orally. Avoid use in feeding tubes.	Avoid in feeding tubes. Suspending agent will thicken and block the tube. Consider senna, lactulose, docusate sodium liquid, suppositories or enemas.	
Itraconazole	-	Use licensed liquid or parenteral injection.	Oral liquid, sugar-free, cherry-flavoured, itraconazole 10mg/mL, 150mL. Stop feed 2 hours prior to dosing and flush well. Draw up undiluted oral liquid into a syringe and flush through. Flush tube well after use and do not re-start feed for one hour. Use parenterally if jejunum or duodenal route as higher pH can reduce absorption ¹ . Use of capsule contents has blocked tube ³ or has reduced absorption ¹ and is therefore not recommended.	£58.34

Kk...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ketoconazole	-		<p>The Committee for Medicinal Products for Human Use (CHMP) has recommended that the marketing authorisation for oral ketoconazole should be suspended. The risk of hepatotoxicity associated with oral ketoconazole is greater than the benefit in treating fungal infections.</p> <p>Topical products containing ketoconazole are not affected by this advice⁷.</p>	

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BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Lactulose	-	Dilute with water before using via feeding tube	Dilute with 2 or 3 times the same volume of distilled ³ water and mix prior to using in a feeding tube ¹ .	£2.61
Lamotrigine	-	Dispersible tablets	<p>2mg, 5mg, 25mg and 100mg dispersible tablets. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹.</p> <p>If prescribing a licensed formulation, the MHRA have issued guidance to advise the need for continued supply of a particular manufacturer's product should be based on clinical judgement and consultation with patient/carer taking into account factors such as seizure frequency and treatment history for epilepsy (generic or proprietary)³³.</p>	£3.70 (100mg)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Lansoprazole	(DT)* 5mg/ 5ml 15mg/ 5ml 30mg/ 5ml	Orodispersible tablets (FasTabs) now licensed for NG tubes. Esomeprazole is licensed for PEG tubes.	15mg and 30mg orodispersible tablets are licensed for NG tubes but are not absorbed sublingually and are not licensed for PEG tubes. FasTabs® can be used orally or via NG. Esomeprazole is licensed for PEG tubes and should be used first line. If not appropriate FasTabs can be used off-licence. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube. For tubes finer than 8Fr, the contents of the capsule can be dissolved in 8.4% sodium bicarbonate and 15mL water prior to administration. 8.4% sodium bicarbonate ¹ , apple or orange juice ³ can also be used to unblock the tube.	£3.22
Lercanidipine	-	Consider alternatives.	Consider alternative calcium channel blocker. Tablets could be crushed and mixed with water if necessary. Stop feed 30 minutes before dose and restart 30 minutes after ³ .	£4.07

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Levamisole	£110	Use mebendazole	Try mebendazole first line. Levamisole was formerly used as an immunostimulant and is now used as an anti-parasitic agent in veterinary medicine. When used long term and in high doses, it can cause adverse effects, including agranulocytosis. Levamisole has been used as a cocaine adulterant ³⁴ .	-
Levetiracetum		Use licensed liquid	100mg/ml oral solution sugar-free, 300ml. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ^{1,2} . If prescribing a licensed formulation for epilepsy, the MHRA have issued guidance to advise it is usually unnecessary to ensure that patients are maintained on a specific manufacturer's product unless there are specific reasons such as patient anxiety and risk of confusion or dosing errors (generic or proprietary) ³³ .	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Levomepromazine (Methotrimeprazine)	(DT) * 2.5mg/5ml	The tablets disperse in water. The 25mg tablet is scored so can be halved if necessary. Injection	6mg tablet is unlicensed. 25mg tablet (scored) is licensed. Use a pill cutter if necessary to quarter the tablets. Tablets can be dispersed in water immediately prior to administration ³ . Disperse tablet in the barrel of an oral syringe. Disperse with 10mL water, shake gently, and flush. Rinse syringe and flush. Levomepromazine injection contains excipients which, when given enterally can, degrade to products which may theoretically may induce asthma attacks but not reported in practice, the risk is considered to be small ³ .	£20.26

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Levothyroxine	£270 capsules	Use licensed oral solution sugar free.	Oral solution sugar free, levothyroxine sodium 25mcg/5mL; 50mcg/5mL; 100mcg/5ml, 100mL. No evidence yet for use in feeding tubes, monitor sorbitol level. Tablets can be crushed or will disperse in 10mL water if shaken for 3-5 minutes if liquid is out of stock ^{1,3} . Please note capsule formulations are unlicensed.	£94.64 (25mcg) £92.44 (50mcg) £164.26 (100mcg)
Lidocaine HCl_Gel	(DT) * 2%	Many licensed products are available.	Many licensed preparations including creams, ointments, gels, sprays and plasters are available. Please check BNF (Chapter 15.2 lidocaine for surface anaesthesia)	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Lisinopril	(DT) * 20mg/5ml	Licensed 5m/5ml oral solution	Licensed 5mg/5ml oral solution sugar-free. No information located on administration on feeding tubes or swallowing difficulties. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube. No data available on the individual brands of tablets ¹ . Bioavailability may vary, monitor BP ³ .	£154.11
Lithium	-	Licensed liquid Caution if switching brands. Seek specialist advice.	Contact medicines management for advice: Bioavailability differs between brands. Stop feed for one hour before dose and 2 hours after. Monitor lithium levels closely. ³	£5.79

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Lofepamine	£25	Licensed suspension available	<p>Oral suspension sugar-free, lofepramine 70mg/5mL (as hydrochloride), 150mL².</p> <p>Stop the enteral feed and flush. Draw the required liquid into a syringe and dilute with an equal volume of water. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube¹.</p>	£27.22
Loperamide	(DT) * 25mg/ 5ml	Licensed syrup Orodispersible tablets	<p>Syrup, sugar free, red, loperamide hydrochloride 1 mg/5 mL². There is no information on administering loperamide 2mg orodispersible tablets via a feeding tube. Orodispersible tablets should be dissolved on the tongue and swallowed.</p> <p>Stop the enteral feed and flush. Draw the required liquid into a syringe and flush the medication through the feeding tube. Rinse and flush. Flush the tube¹.</p> <p>Do not open the capsules as they cause feeding tube blockage and the bioavailability of the drug may be altered³.</p>	£1.17 (100ml) £5.02 (18 orodispers tablets)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Loratadine	-	Licensed syrup 5mg/5mL available	5mg/5ml 100ml. Stop the enteral feed and flush. Draw the required liquid into a syringe and flush the medication through the feeding tube. Rinse and flush. Flush the tube ¹ .	£1.93
Lorazepam	(DT)* 1mg/ 5ml 500mcg /5ml	Diazepam/ Temazepam are licensed liquids. Tablets can be used sublingually or crushed	Switch to a licensed alternative if possible or use sublingually. If not possible, stop the feed and flush. Crush the tablet and disperse with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar, etc and flush. Flush the tube ¹	£5.26
Losartan	(DT)* 50mg/ 5ml	Licensed oral suspension Consider ACE first line (ramipril liquid.)	Licensed 12.5mg/ 5ml, 200ml oral suspension. If necessary, Cozaar tablets crush easily and mix with 10ml water to for a fine suspension that flushes down a feeding tube ¹ . If possible, switch to an ACE as first line treatment (licensed ramipril liquid is available).	£53.68 (200ml)

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BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Magnesium Glycerophosphate	<p>(DT)* 4mmol/5ml or 97.2mg/5ml</p> <p>5mmol/5ml or 121.25mg/5ml</p>	<p>Licensed Magnaspartate sachets</p> <p>Yourmag caplets</p> <p>Magnaphate tablets</p>	<p>Magnaspartate sachet (each 6.5g sachet contains 243mg/ 10mmol of Magnesium). Dissolve the contents of one sachet (6.5g) in 50- 200ml water, tea or orange juice. Stir until the solution in water is cloudy to transparent. In orange juice or tea inactive particles will be visible. The solution should be taken immediately. Magnaspartate in 200ml water can be administered via a gastric, duodenal and nasal feeding tube. The solution should be administered immediately after preparation⁵.</p> <p>Yourmag 4mmol caplets (magnesium glycerophosphate 97.2mg tablets) are chewable and peppermint flavoured. It is a registered food supplement manufactured to GMP standards. It is scored so can be split in half⁹.</p> <p>Magnaphate 4mmol tablets (magnesium glycerophosphate 97.2mg tablets) is an unlicensed brand, however, this is listed in the Drug Tariff and hence if prescribed by brand will be a fixed price. A Certificate of Analysis is kept on file. These are peppermint flavoured chewable tablets which are scored with two break lines and hence can be halved or quartered if necessary.</p> <p>There is no information on administration of Magnaspartate via feeding tubes.</p>	<p>£8.95 10 sachets</p> <p>£20 per 50 caplets (Yourmag)</p> <p>£22.64 50 tablets Magnaphate</p>

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Magnesium Oxide		Magdose 100mg, 160mg capsules and tablets 500mg capsules Oromag 160mg capsule	See above monograph, magnesium glycerophosphate. Magdose 100mg, 160mg, 500mg capsules and Magdose 100mg, 160mg tablets and Oromag 160mg capsules are unlicensed brands, however, these are listed in the Drug Tariff and hence if prescribed by brand will be a fixed price. A Certificate of Analysis is kept on file.	£19.95 (Oromag x 30 capsules) Magdose £26.34 100mg x 30 caps £28.38 100mg x 30 tabs £17.99 160mg x 30 caps £32.18 160mg x 30 tabs
Mebendazole	-	Licensed oral suspension.	100mg/5ml, 30ml. Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the tube ¹	£1.55
Mebeverine	£111	Licensed oral suspension.	Oral suspension, mebeverine hydrochloride (as mebeverine embonate) 50mg/5mL, 300mL ² . Stop the enteral feed and flush 20minutes before dosing. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Wait 20minutes before restarting ¹ Standard Colofac tablets can be crushed. Fybogel Mebeverine sachet is not suitable for feeding tube administration due to risk of blockage from ispaghula husk ¹ .	£187
Mefenamic acid	-	Licensed suspension or switch to alternative	Suspension, mefenamic acid 50mg/5mL, 125mL ²	£179

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Megestrol	£588	Tablets disperse in 10mL water	<p>160mg tablet is the only UK licensed strength. The break line on the Megace brand tablet is only to facilitate breaking for ease of swallowing and not to divide into equal doses⁵.</p> <p>Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube. Megestrol acetate is practically insoluble. Tablets disintegrate rapidly when placed in water to give a fine dispersion that settle quickly but does flush¹.</p>	£19.52
Melatonin	<p>(DT)*</p> <p>2mg/ 5ml</p> <p>2.5mg/ 5ml</p> <p>3mg/ 5ml</p> <p>5mg/ 5ml</p> <p>10mg/ 5ml</p>	Only Circadin® 2mg MR tablets are licensed	<p>Circadin® tablets, m/r, melatonin 2 mg, 30-tab pack. Tablets can be halved or crushed if necessary. MR action will be lost. No information for use with feeding tubes.</p> <p>See local BHR NELFT shared care guidelines on melatonin for children</p>	£15.39 (for 30 tablets)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Meloxicam	-	Review need, switch to ibuprofen or naproxen	Review ongoing NSAID need. Switch if possible.	£0.92 (7.5mg tablets)
Memantine	-	Licensed oral solution	10mg/ml oral solution sugar-free, 50ml. 5mg/pump oral solution, 50ml and 100ml is licensed. No info on use in feeding tubes but can be added to water ⁵ .	£54.85 (50ml) £61.61 (50ml pump) £123.23 (100ml pump)
Menadiol sodium phosphate	(DT)* 5mg/ 5ml		Refer to Phytomenadione monograph	
Mepacrine	£82	Seek specialist advice	All formulations of Mepacrine are unlicensed.	-

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Mercaptopurine	£2,738	<p>Cytotoxic:</p> <p>Licensed 20mg/ml suspension</p>	<p>Licensed 20mg/ml, 100ml suspension. Please note: the suspension and tablet are not bioequivalent with respect to peak plasma concentration- consult specialist. Wear disposable gloves and wash hands before and after use. Pregnant or breastfeeding women should not handle medicine. Shake bottle vigorously for 30 seconds to ensure medicine is mixed before administration⁵.</p> <p>50mg tablets are licensed, 10mg capsules are unlicensed.</p> <p>Caution Cytotoxic: No information on enteral tube use but may disperse in 10mL of water if deemed necessary. Use a closed system due to cytotoxic nature¹. Dispose of all equipment as cytotoxic waste</p>	£170

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Mesalazine	-	MR tablets and granules will disperse in water.	<p>Oral MR tablets, 500mg and MR granules, 1g and 2g sachets will block a feeding tube, due to a large particle size.</p> <p>MR granules should only be placed on tongue and washed down with water or orange juice⁵.</p> <p>Pentasa MR tablets must not be crushed or chewed. To facilitate swallowing they may be dispersed in 50ml of cold water, stir and drink immediately. The manufacturer have no data in regards to unblocking a tube. However, they are aware that the Pentasa tablets are easier to suspend than the Pentasa sachets. Although they have no data in regards to unblocking a tube, they believe that when the mesalazine has escaped the tablet microgranules and the microgranules have collapsed, it should be possible to flush the tube with water²³.</p> <p>Salofalk granules have a gastro-resistant coating and should not be crushed. Manufacturer has stated it could be distributed in yoghurt as long as the patient does not crush and chew the granules (Unlicensed use)⁴⁶.</p> <p>Enema's and suppositories have a local action only. Consider switching to sulfasalazine^{1,3}</p>	<p>£30.74 (MR tablets)</p> <p>£30.74 (1g MR sachets)</p> <p>£73.78 (2g MR sachets)</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Metformin	£65	Licensed metformin oral solution	<p>500mg/5ml, 150ml oral solution sugar-free.</p> <p>Off-licence enteral use: Stop the feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube¹.</p> <p>Metformin tablets (Glucophage and Zanza brand) crush easily and disperse well in water to form a fine suspension that flushes easily via an 8Fr NG tube¹. Crushing may require use of pestle and mortar as the large tablets are quite hard³.</p> <p>Metformin oral powder (sachets) has been discontinued.</p>	£13.44 (150ml liquid sugar-free)
Methadone capsule	£311	Licensed tablets / liquid	No evidence for enteral use. Check sorbitol levels in liquid.	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Methotrexate		<p>Cytotoxic: Seek specialist advice.</p> <p>Licensed 2mg/ml sugar-free</p> <p>Tablets disperse in 10mL water if necessary.</p>	<p>Caution Cytotoxic: Seek specialist advice. Where practical, use licensed liquid.</p> <p>Licensed 2mg/ml oral solution sugar-free, 35ml and 65ml (Rosemont) which comes with a syringe and syringe adaptor. No information in the SPC on administration via feeding tube. Once the dose has been swallowed, a glass of water should be drunk to remove any methotrexate residue from the oral cavity. The syringe will need to be washed in warm soapy water and rinsed well, moving the plunger up and down several times to ensure the inside is clean. Hands should be washed thoroughly with soap and water immediately after use⁵.</p> <p>If necessary to use tablet: Use a closed system and protective equipment. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹. Dispose of all equipment as cytotoxic waste.</p>	<p>£95 35ml</p> <p>£125 65ml</p>
Methylcellulose	£160	<p><u>See below.</u> Consider non-bulk laxatives.</p>	<p><u>Bulk forming laxatives can block a tube.</u> <u>Consider changes to feeds</u> or an alternative laxative e.g. senna, docusate</p>	-

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Methyldopa	-	Consider alternatives. Tablets could be crushed with difficulty	Consider alternatives. Tablets can be crushed with difficulty. Tubes need to be flushed very well to avoid blockage. Stop feed for 2 hours before and 1 hour after medication to avoid interactions ³	£6.68
Methylphenidate	(DT) * 5mg/ 5ml	Capsules can be opened	Equasym XL or Medikinet XL capsules can be opened and sprinkled on apple sauce ^{2,5} .	

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Metoclopramide	-	Licensed syrup available 5mg/5mL, 150mL	<p>Use the licensed oral solution 5mg/5mL, sugar-free 150ml.</p> <p>Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush medication through the feeding tube. Rinse and flush. Flush the feeding tube. Dilute with an equal volume of water if using jejunally to reduce osmolality¹.</p> <p>If necessary, tablets (Maxolon and Teva) can be crushed¹.</p>	£19.77
Metolazone	-	Tablets disperse in 10mL water	<p>Tablets have been discontinued in the UK but can still be ordered as a medicine licensed outside UK.</p> <p>Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water, shake vigorously, flush. Rinse the syringe and flush. Flush the tube¹.</p>	

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Metoprolol	(DT)* 12.5mg/ 5ml 50mg/ 5ml	Switch if possible, atenolol / propranolol.	Consider licensed atenolol or propranolol liquid if appropriate. Tablet could be crushed and dispersed but this is not ideal ^{1,3}	£1.08
Metronidazole	£222	Licensed oral suspension	200mg/5ml oral suspension. Hold the feed for 2hrs before and 60 mins after dosing ³ . For intragastric administration the liquid can be used. Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Not recommended for intrajejunal administration, consider suppository or alternative antibiotic ¹ . Metronidazole tablets (Teva) crush easily using pestle and mortar and mix easily with water to form a milky suspension that flushes easily via feeding tube ¹ .	£32.93

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Mexiletine	£160	Seek specialist advice. All preparations are unlicensed.	<p>Unlicensed: 50mg, 200mg capsules and 25mg/ml, 10ml injection.</p> <p>Capsules can be opened and dispersed in water for use in feeding tubes^{1,3}. The injection has also been administered enterally but has a very unpleasant taste and a local anaesthetic action in the mouth³. No specific data are available on jejunal administration. However, administer using the above method and monitor for increased side effects or loss of efficacy¹.</p>	-
Midazolam (oral mucosal liquid)		<p>Buccolam® oromucosal liquid is licensed and available.</p> <p>Full counselling must be provided</p>	<p>Buccolam® is the only licensed UK product. All midazolam oral liquids should ideally be switched to Buccolam® 5mg/mL, available as pre-filled single dose oral syringes containing 2.5mg, 5mg, 7.5mg and 10mg.</p> <p>Caution: Most midazolam prescriptions are 10mg/mL and may cause confusion to the patient/carer. Ensure the difference is explained and they understand how to use the pre-filled syringes.</p>	<p>£82 (2.5mg)</p> <p>£85.50 (5mg)</p> <p>£89 (7.5mg)</p> <p>£91.50 (10mg)</p>

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Minocycline	-	Consider alternative. Tablets could be crushed	Consider alternative. Tablets could be crushed and mixed with water. Do not disperse capsule contents for feeding tubes as this can cause a blockage ³ .	£14.01
Minoxidil	-	Tablets disperse in 10mL water	Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	£15.83 (5mg)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Mirtazapine	-	Dispersible tablets or licensed oral solution	<p>15mg, 30mg, 45mg orodispersible tablets. 15mg/ml oral solution, 66ml bottle.</p> <p>Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube.</p> <p>Dilute with an equal volume of water if administering jejunally to reduce osmolarity¹. Absorption from the jejunum is poor³.</p>	<p>£1.41 (tablets)</p> <p>£59.70 (liquid)</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Moclobemide	-	Consider alternative. Crush and disperse in water	150mg and 300mg tablets. Ask for specialist advice. This should only be switched with expert guidance. Teva brands will disperse in water if shaken for 5 minutes. Tablets could be crushed and dispersed in water immediately prior to administration if necessary ³	£13.99 (300mg)
Modafinil	(DT)* 100mg/ 5ml	Crush and disperse in water	100mg and 200mg tablets. Consider alternatives. Tablets could be crushed and dispersed in water immediately prior to administration ³	£5.97 (100mg tablets x 30)
Montelukast	-	Chewable tablets or granules are available or disperse in 10mL water	4mg or 5mg chewable tablets sugar-free, 28 tablets. 4mg granules for oral intake, 28 sachets. For tubes use the chewable tablets and disperse in water. Stop feed 2 hours before administration and for one hour after ³ Singulair tablets disperse if shaken in 10ml water for 3 minutes ¹ .	£1.35 (chewable tablets) £4.36 (sachets)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Morphine sulphate	-	Use liquid Oramorph 10mg/5ml or concentrated 100mg/5ml, prolonged release sachets, suppositories or injection	<p>Immediate action Oramorph: Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. (Caution: interaction with Jevity – stop feed for 2 hours before and 1 hour after³.)</p> <p>For intrajejunal administration, dilute the liquid with an equal volume of water immediately prior to administration¹. The modified release sachets can be used but there are safety concerns about particles being left in the tube which deliver a bolus dose at a later time. A fatality has occurred. Oramorph is thought to be safer¹. Sachets or opening capsules can be used for oral intake and can be mixed with cold foods e.g. yoghurt, etc as desired⁵.</p>	£5.45 (300ml)
Multivitamins			<p>Consider whether vitamins are still required e.g. they are present in feeds and oral nutritional supplements</p> <p>Abidec drops contains peanut oil, can be added to water (not licensed for use in adults)¹.</p> <p>Dalivit drops can be added to water¹.</p> <p>Forceval soluble can be dissolved in 50ml of water for NG administration. This forms a cloudy liquid with some fine sedimentation which can be flushed via feeding tube. Administer after feed¹.</p> <p>For patients with swallowing difficulties, mix with 100ml water and Thick n Easy⁵¹.</p> <p>Ketovite tablets. Tablets disperse in water and can be administered via a feeding tube¹.</p>	
Mycophenolate	-	Licensed suspension available	<p>Mycophenolate is teratogenic, the capsules should not be opened and tablets should not be crushed owing to risk of operator exposure¹.</p> <p>The licensed powder 1g/5mL for oral suspension contains sorbitol^{2,5} and is licensed for use in an NG 8Fr tube^{3,5}</p>	£115.16

Nn...

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Naftidrofuryl oxalate	-	Capsules can be opened for enteral tubes only. Not for oral intake.	The capsules powder is irritant and anaesthetic and shouldn't be taken orally ³ . Capsules can be opened and dispersed in water for use in feeding tubes ³ .	£4.29
Naltrexone	(DT)* 5mg/ 5ml	Only tablets are licensed	No information on crushing or the use via a feeding tube. Naltrexone hydrochloride is soluble in water but has a bitter taste ¹⁵ .	£22.34

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Naproxen	(DT) * 200mg/ 5ml	Licensed dispersible tablets and oral suspension	<p>250mg effervescent tablets sugar-free, 20 tablets. 125mg/5ml oral suspension sugar-free 100ml.</p> <p>1-2 Effervescent tablets must be dissolved in at least 150ml water, doses of 3 tablets must be dissolved in 300ml. The glass should be rinsed with a small amount of water (10ml) and the contents drunk. The manufacturer has no information on administration via feeding tubes⁴⁴.</p> <p>Oral suspension sugar-free. The manufacturer has no information on administration via feeding tubes⁴⁵.</p> <p>If needed, naproxen tablets could be crushed. Stop the feed and flush. Crush the tablet and disperse with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar, etc and flush. Flush the tube¹</p>	<p>£7.90 20 Effervescent tablets</p> <p>£110 100ml Oral suspension</p>
Naratriptan	-	Switch to zolmitriptan orodispersible tablets	<p>Consider switching to zolmitriptan orodispersible tablets.</p> <p>No information on dispersing naratriptan tablets or administration via feeding tubes.</p>	£23.13
Nebivolol	-	Consider switch to a licensed liquid beta-blocker	Consider switching to a beta-blocker with a licensed liquid if appropriate e.g. atenolol. Nebivolol could be crushed and dispersed if necessary ³	£1.23 (5mg)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Nefopam	-	Tablets disperse in 10mL water for tube use only, not oral.	Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ . Not to be crushed/dispersed and taken orally due to anaesthetic action locally ³ .	£47.80
Neostigmine	-	Consider injection. Crush and mix with water	Consider using the injection IM/SC. Tablets could be crushed and mixed with water for oral intake if necessary, not suitable for fine bore feeding tubes ³ .	£99.60
Nicorandil	-	Tablets disperse in 10mL water	Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	£2.05 (10mg)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Nicotinic Acid	£285	Consider alternatives.	Review need. Not suitable for crushing/dispersing.	
Nifedipine	(DT)* 5mg/ 5ml 10mg/ 5ml	Adalat Retard tablets can be crushed but MR action is lost, not ideal for angina or hypertension pts. Review dosing regimen and monitor BP.	Contact medicines management for advice. Caution: Short-acting formulations (including liquids) are not recommended for angina or long term management of hypertension; their use may be associated with large variations in BP, reflex tachycardia ² and can increase CVS complications and mortality ⁵ . Consider switching to amlodipine or lercanidipine. Nifedipine is not licensed for use in children. However, the BNFC suggests that for rapid effect in hypertensive crisis or acute angina, bite capsules and swallow liquid or use liquid preparation if 5mg or 10mg doses are inappropriate. If liquid is unavailable, extract contents of capsules via a syringe and use immediately- cover syringe with foil to protect contents from light; capsule contents may be diluted with water if necessary ⁷ .	£7.30
Nitrazepam	-	Licensed liquid 2.5mg/5mL, 150mL.	Use the licensed strength. Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹	£114

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Nitrofurantoin	£127	<p>Licensed sugar-free suspension 25mg/5ml</p> <p>Empty capsule contents</p>	<p>Oral suspension 25mg/5ml, 300ml. Stop the enteral feed and flush. Draw the required liquid into a syringe and mix with the same volume of water. Flush the medication through the tube. Rinse and flush. Flush the feeding tube¹</p> <p>The standard capsules (not M/R) can be opened and contents mixed with water. There are some larger granules, which settle quickly and may block finer tubes¹.</p> <p>Tablets do not disperse readily but will disintegrate if shaken in 10ml of water for 5 minutes to give a bright yellow, fine dispersion. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹</p> <p>For swallowing difficulties, if suspension not available, the standard capsule contents have been opened (not M/R) and mixed with water^{1,3}. Do not crush the tablets as nitrofurantoin is an irritant³.</p>	<p>£446.95 Liquid</p> <p>£10.42 30 x 50mg capsules</p> <p>£14.95 28 x 50mg tablets</p>

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Nortriptyline	-	Tablets disperse	Tablets will disperse in water for administration in 1-2minutes ³ .	£29.89 (10mg)
Nystatin	-	Nystatin licensed oral suspension	Nystatin 100,000units/ml oral suspension, 30ml is licensed. There is no licensed sugar-free version. Effect is local; it is not absorbed ² . Consider if it needs to be swallowed.	£2.26 £1.80 (Nystan brand)

Oo...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Olanzapine	(DT) * 2.5mg/ 5ml	Orodispersible tablets: 5mg, 10mg, 15mg and 20mg strengths.	Stop the feed and flush. Dissolve the tablet in 10mL water in a medicine pot. Draw into a syringe and flush. Rinse the pot and syringe and flush. Flush the tube ¹ . Orodispersible tablets will dissolve in the mouth or can be mixed with water or orange juice, apple juice, milk or coffee ¹	£4.34 10mg Orodispersible tablets £2.22 10mg Orodispersible sugar-free tablets £87.40 10mg Oral lyophilisates sugar free
Olmesartan	£1,666	Consider ACE first line (ramipril liquid.) If ARB necessary, consider losartan suspension.	If possible, switch to an ACE as first line treatment (licensed ramipril liquid is available). Consider licensed losartan suspension if an ACE is unsuitable. There is no evidence for using Olmesartan in feeding tubes.	Refer to entries for ramipril and losartan.

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Omeprazole	(DT)* 5mg/ 5ml 10mg/ 5ml 20mg/ 5ml 40mg/ 5ml	Lansoprazole is licensed for use in NG tubes, and Esomeprazole for NG and PEG tubes. Dispersible tablets or capsules can be opened.	10mg, 20mg and 40mg dispersible tablets. For oral use: Dispersible tablets can be broken (but not crushed) and dissolved in a spoonful of non-carbonated water and added to fruit juice or apple sauce if desired ⁵ . Do not use milk or carbonated water. The enteric-coated pellets must not be chewed. Losec MUPS will block fine bore feeding tubes ¹ . For enteral use: Consider using dispersible lansoprazole which is licensed for use in NG tubes ⁵ or esomeprazole licensed for PEG/NG tubes ⁵ . Dexcel omeprazole tablets will disperse if necessary for use in feeding tubes without blockage ¹	£11.60 (20mg)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ondansetron	£237	Licensed oral lyophilisates and orodispersible tablets, syrup 4mg/5mL and 16mg suppositories	4mg, 8mg oral lyophilisates, 10 and orodispersible tablets 4mg/5ml oral solution, 50ml. Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Consider sorbitol content if large doses are used ¹	£35.97 lyophilisates (10) and oral solution £43.46 Orodispers tablets
Orphenadrine	£11	Licensed liquid available 50mg/5mL	Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Consider sorbitol content if large doses are used ¹	£37.50 (50mg/5ml)
Oxandrolone		Hospital only medicine	This is currently on the Hospital only list. It is not advisable to prescribe in primary care and should be referred back to the specialist.	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Oxybutynin		Licensed oral solution and patches are available	<p>2.5mg/5ml, 5mg/5ml oral solution sugar-free. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube¹.</p> <p>36mg patches are an alternative. One patch releases 3.9mg per 24 hours. Recommended dose is one patch twice weekly (every 3-4 days).</p> <p>Tillomed brand tablets will disperse if necessary. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹.</p>	<p>£144.50 (2.5mg/5ml)</p> <p>£199.20 (5mg/5ml)</p> <p>£27.20 (Patches)</p>
Oxycodone	-	Licensed liquid 5mg/5mL or 10mg/mL	Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the tube ¹	£9.71
Oxytetracycline	-	Consider switching	Consider switching to an antibiotic with a suitable licensed formulation ¹ . Doxycycline may be an option.	£0.99

Pp...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Pancreatic enzymes	-	Caution. Regimes may be complex. Licensed powder, pellets, granules.	Stop the feed and flush. Mix required amount of powder (pancrex V) with 10-20mL water. Stir to disperse and use immediately. Draw into syringe and administer. Rinse the pot/syringe and flush again. Flush the tube. Re-start feed immediately ¹ .	
Pantoprazole	-	Switch to omeprazole, lansoprazole or esomeprazole	No evidence for using with a feeding tube. Please switch to omeprazole, lansoprazole or esomeprazole which all have licensed options ⁵ .	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Paracetamol		Licensed suspensions suppositories; dispersible tablets available	<p>500mg dispersible tablets. 120mg/5ml, 250mg/5ml, 500mg/5ml oral suspension. 60mg, 120mg, 125mg, 240mg, 250mg, 500mg suppositories.</p> <p>Dispersible tablets do contain a high level of sodium. Suspensions contain a high level of sorbitol but can be diluted with water for jejunum administration. Both can be used with a feeding tube¹.</p> <p>Please note: Calpol Infant Suspension and Calpol Six Plus Suspension is not allowable on an NHS prescription (Black listed)⁴</p>	<p>120mg/5ml, 100ml £1.31</p> <p>250mg/5ml, 100ml £1.15</p> <p>500mg/5ml, 150ml £24</p> <p>500mg disp tablets, 100 £9.42</p> <p>Suppository: 500mg, 10 £36.50 250mg, 10 £27.60</p>
Paraldehyde 50% in olive oil rectal solution	(DT) *		<p>No other licensed alternatives.</p> <p>For treatment of status epilepticus in paediatric patients⁷. The enema can catch fire if used near a naked flame. Store in a cool dry place away from direct sunlight or heat.</p>	

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Paroxetine	-	Licensed sugar free oral suspension	10mg/5mL oral suspension, 150ml. Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Consider sorbitol content if large doses are used ¹ . Can be diluted with water as quite viscous ³	£9.12
Perindopril erbumine	(DT) * 4mg/ 5ml	Consider licensed ramipril liquid. Tablet could be dispersed.	Always consider switching to a licensed product first line; licensed ramipril liquid is available if appropriate. 2mg and 4mg Coversyl tablets will disperse in 10mL water for use in a feeding tube. Hold the feed for 2 hours before and after dosing ³ . Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube and wait at least an hour before restarting feed. No information regarding 8mg tablets ¹ .	Refer to Ramipril section

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Phenobarbital		Licensed elixir available 15mg/5mL. Not suitable for children.	<p>Not suitable for children: Elixir contains 38% alcohol.</p> <p>Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube¹.</p> <p>Tablets could be crushed and mixed with water³</p> <p>If prescribing a licensed formulation, the MHRA have issued guidance to advise that patients should receive a consistent supply of the same brand if treated for epilepsy (generic or proprietary)³³.</p>	£83

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Phenytoin	(DT) * 90mg/ 5ml	<p>Licensed oral suspension 30mg/5mL and injection available.</p> <p>50mg chewable tablets not suitable for enteral tube administration</p> <p>Caution if switching between phenytoin sodium (capsules) and phenytoin base (liquid) due to potential dose changes.</p>	<p>Caution: Contact medicine management for advice. It is not advisable to use phenytoin via a feeding tube due to a significant interaction with the feed³. Feeds must be stopped for at least 2 hours before and after dosing and may still be insufficient. Daily dosing must be given at the same time each day and increased doses may be required. Phenytoin plasma concentration should be checked and dose adjusted until therapeutic plasma concentration is achieved.</p> <p>100mg phenytoin sodium capsules/tablets = 90mg phenytoin (base) suspension¹</p> <p>Stop the enteral feed and flush. Draw the required liquid into a syringe and dilute with equal parts water (suspension is hyperosmolar), if this is a large volume the dose may need to be given in batches. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube with 30-60mL distilled water^{1,3}</p> <p>If prescribing a licensed formulation, the MHRA have issued guidance to advise that patients should receive a consistent supply of the same brand if treated for epilepsy (generic or proprietary)³³.</p>	£4.27 (500ml liquid)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Phytomenadione (low dose)	£315	<p>Konakion MM Paediatric (Phytomenadione) 10mg/ml, 0.2ml ampoule</p> <p>Neokay (Phytomenadione) 1mg capsules</p> <p>Neokay 200mcg/ml drops (unlicensed)</p> <p>Caution: these may not be suitable for peanut or soya allergy</p>	<p>Phytomenadione Paediatric 10mg/ml, 0.2ml ampoule (containing 2mg) is licensed for oral administration but not enteral. If giving via the feeding tube, flush well³. Please note this contains lecithin of soybean origin²⁷. It is not suitable for vegetarians as the glycocholic acid is derived from bile from cow²⁷.</p> <p>Neokay capsules contains 1mg phytomenadione. The licensed method of administration is to cut the narrow tubular tip off the capsule and squeezing the liquid into the mouth. Please note: the liquid contents contains coconut oil and the capsule is made from gelatin. There is no information on giving this via a feeding tube.</p> <p>Neokay drops (unlicensed) contains 200mcg/ml phytomenadione, available as a 25ml bottle with a 1ml pipette dropper graduated in 0.25ml aliquots. Please note that this contains coconut oil.</p>	<p>£0.95 per 0.2ml ampoule</p> <p>£3.95 12 capsules</p> <p>£3.95 per 25ml bottle</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Phytomenadione 10mg dose (Vitamin K)	£164	Menadiol (Sodium) Phosphate tablets.	<p>Caution: Contact medicine management for advice if 10mg dose is required and the preparation is not specified. There are two types of Vitamin K 10mg tablet:</p> <p>1) Phytomenadione 10mg tablets are unlicensed. Phytomenadione is a fat soluble vitamin K.</p> <p>2) Menadiol sodium phosphate 10mg tablet is a water soluble vitamin K derivative mainly used to prevent deficiency in fat malabsorption syndromes e.g in obstructive jaundice or hepatic disease. It is contraindicated in neonates, infants and mothers in pre and post natal periods. Tablets could be crushed and mixed with water ³</p>	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Pilocarpine HCl_Eye Drops P/F	(DT)* 2% 4%	Minims are available	Refer to Ophthalmic special order products table below by The Royal College of Ophthalmologists.	
Pirenzepine	£140	Seek specialist advice.	Pirenzepine is a selective antimuscarinic previously used to treat gastric and duodenal ulcers. It has long been discontinued. There is no information on administration via a feeding tube.	-
Pioglitazone	-	Consider alternative treatment	Consider alternative treatment. Tablets may be crushed and mixed with water ³ .	£1.28 (30mg)
Pizotifen	(DT)* 250mcg /5ml	Crush tablets	Sanomigran elixir is discontinued. Tablets can be crushed and mixed with water for administration ³ . Crush the tablet and disperse with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar, etc and flush. Flush the tube ³ .	£1.72 (500mcg x 28 tablets)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Polyvinyl alcohol eye drops		Sno Tears Refresh PF single dose units	Sno Tears (polyvinyl alcohol 1.4%, 10ml bottle) contains a preservative. For a preservative-free preparation, Refresh eye drops (polyvinyl alcohol 1.4%, povidone 0.6%) is available as 0.4ml unit doses x 30.	£1.06 10ml £2.25 Refresh x 30 units
Posaconazole		Licensed 40mg/ml oral suspension- CAUTION: doses are not interchangeable	NHSE commissioned medicine ³⁹ . Please refer back to secondary care. In case of swallowing difficulties, please note that the doses for tablets and oral suspension are not interchangeable. Follow the specific dosage recommendations for each formulation ⁵ . MHRA have reported that switching from suspension to tablets can lead to overdosing and serious side effects, whereas switching from tablet to suspension can lead to underdosing and lack of efficacy ⁴² .	
Potassium Permanganate TOPICAL solution	£127	Caution: Topical use only. Licensed tablets.	Caution: This is for topical usage only. NOT oral. Concentrated solution tablets (Permitabs) can be dissolved in water to give the required topical concentration ² Note: 1 x 400mg tablet dissolved in 4 litres of water provides a 0.01% (1 in 10,000) solution ²	£17.50
Pravastatin	-	Atorvastatin chewable tablets Simvastatin liquid is licensed. Tablets will disperse in 10mL water	Switch to licensed atorvastatin chewable tablets or simvastatin liquid if necessary. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	£1.03

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Prazosin	£84	Tablets will disperse	Disperse in water and administer – take care to flush tube well ³	£3.46
Prednisolone	-	Oral solution Oral solution unit dose Dispersible tablets Standard tablets	10mg/ml, 30ml bottle 5mg/5ml oral solution 5ml unit doses, 10 units. 5mg dispersible tablets. Stop the feed and flush. Place the tablet in a medicine pot and dissolve with 20-30mL water. Draw into a syringe and flush. Rinse the syringe and flush. Flush the tube ¹ . The standard tablets can be crushed and mixed in water for administration when necessary. Without crushing they disperse in 2-5 minutes ³ .	£55 (10mg/ml 30ml bottle) £11.41 (5mg/5ml 10 unit doses) £52.75 (5mg disp tablets x 30) £0.86 5mg tablets x 28
Prednisolone Eye drops			Refer to Ophthalmic special order products table below by The Royal College of Ophthalmologists.	

BNF Name	Average local unlicensed price 4,16	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Prednisolone Sodium Phosphate Ear Drops	£174	Licensed 0.5% and 1% drops are available	Use licensed preparation where possible.	£2
Pregabalin		Licensed 20mg/ml liquid now available	<p>Licensed liquid 20mg/ml, 473ml bottle which comes with a press in bottle adapter. Administration of the liquid via a feeding tube has not been investigated by the company and is therefore not approved for administration via this route²⁶</p> <p>Capsules can be opened and dispersed in water for use in feeding tubes The stability of opening the capsules has not been investigated and is unlicensed. The taste is unpleasant^{3,26}</p> <p>If prescribing a licensed formulation for epilepsy, the MHRA have issued guidance to advise it is usually unnecessary to ensure that patients are maintained on a specific manufacturer's product unless there are specific reasons such as patient anxiety and risk of confusion or dosing errors (generic or proprietary)³³.</p>	£99.48

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Primidone	(DT)* 50mg/5ml 62.5mg/5ml	Tablets will disperse in 10mL water	Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ . If prescribing a licensed formulation, the MHRA have issued guidance to advise that patients should receive a consistent supply of the same brand if treated for epilepsy (generic or proprietary) ³³ .	£111.53 (50mg)
Probenecid			This is currently on the Hospital only list. It is not advisable to prescribe in primary care and should be referred back to the specialist. Named patient only. If necessary, the tablets can be crushed and mixed with water for administration. Without crushing they will disperse in 2-5 minutes ³ .	
Prochlorperazine	-	Licensed syrup 5mg/5mL or 2.5mg/5mL and buccal tablets are available	Use buccal tablets first line ¹ and liquid second line. Stop the enteral feed and flush. Draw the required liquid into a syringe and dilute with an equal volume of water. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Consider sorbitol content if large doses are used ¹	£43.13 (3mg buccal tablets) £3.34 (5mg/5ml oral solution)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Procyclidine	-	Licensed oral solution available	Licensed oral solution 2.5mg/5mL or 5mg/5mL, 150ml bottle. Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the tube. Rinse and flush ¹	£8.08 (2.5mg/5ml) £14.63 (5mg/5ml)
Promazine	£371	Licensed liquid	25mg/5mL or 50mg/5mL, 150ml bottle. No information of use with feeding tubes	£13.03 (25mg/5ml) £15.03 (50mg/5ml)
Promethazine	-	Licensed syrup 5mg/5mL, 100ml bottle	Stop the enteral feed and flush. Draw the required liquid into a syringe and dilute with an equal volume of water. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹	£2.85

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Propranolol	£194	Licensed syrup: 5mg/5mL; 10mg/5mL; 40mg/5mL; 50mg/5mL, 150ml each strength.	Up to QDS dosing is needed. Consider switch to atenolol for ease of use. Stop the enteral feed and flush. Draw the required liquid into a syringe and dilute with an equal volume of water to reduce viscosity. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Consider sorbitol content if large doses are used ¹	£18.50 5mg/5ml £23.45 10mg/5ml £31.50 40mg/5ml £29.98 50mg/5ml
Pyrazinamide	£122	All formulations are unlicensed . Tablets could be crushed if necessary.	Medicines for the treatment of tuberculosis are hospital only. However, if necessary, note that all formulations are unlicensed. If a liquid cannot be obtained: Hold the feed for 30 minutes before and 30 minutes after dosing ³ . Crush the tablet and disperse with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar, etc and flush. Flush the tube ¹	-

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Pyridostigmine	<p>(DT)*</p> <p>20mg/5ml</p> <p>30mg/5ml</p> <p>50mg/5ml</p> <p>60mg/5ml</p>	<p>Tablets can be halved and quartered for part doses.</p> <p>Tablets can be crushed</p>	<p>60mg tablets are scored and can be split for part doses.</p> <p>The tablets can be crushed and mixed with water for administration but can block fine-bore feeding tubes. The tablets can be crushed to a fine powder which suspends in water to give an even dispersion which flushes via an 8Fr NG tube without blockage¹.</p> <p>Hold the feed for 30 minutes before and 1 hour after dosing³. Crush the tablet and disperse with 20mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar, etc with another 20mL water and flush. Flush the tube¹</p>	£45.52 for 200
Pyridoxine	<p>(DT)*</p> <p>100mg/5ml</p>	Tablets will disperse or can be crushed	<p>Dispersing the tablet can leave large particles not suitable for feeding tube use. Stop the feed and flush. Crush the tablet and disperse with 15mL water. Check for large particles. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar, etc and flush. Flush the tube¹</p>	£12.95

Qq...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Quetiapine	(DT)* 12.5mg/ 5ml 25mg/ 5ml 50mg/ 5ml 100mg/ 5ml	Tablets will disperse in water	Quetiapine is moderately soluble in water ¹⁷ . Quetiapine is marginally affected by administration with food and therefore may be given with food or on empty stomach. However, the manufacturer do not have in vivo studies of crushing the tablets and mixing with food before administration ¹⁷ . The tablets can be crushed and mixed with water for administration. Flush well ³ . Do not crush modified release tablets ¹⁷ .	£2.26 (200mg x 60 tablets)
Quinine sulfate	(DT)* 200mg/ 5ml 300mg/ 5ml	Crush tablets	Crush the tablets well and disperse in 200ml of water. Flush well to minimise blockage and irritancy as the coating is likely to block narrow-bore enteral feeding tubes. Only use if absolutely necessary and swallowing problems are likely to be long term ³ .	£1.88 (200mg x 28 tablets)

Rr...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ramipril	-	<p>Licensed oral solution available 2.5mg/5ml strength only⁵</p> <p>Tablets will disperse</p>	<p>2.5mg/5ml, 150ml. No information on use in feeding tubes. Caution: the oral suspension is an unlicensed special, ensure the oral solution is prescribed.</p> <p>If using tablets, stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹.</p> <p>The capsules may also be opened and contents can be placed into mouth, onto bread, mixed with apple juice or apple sauce for patients with swallowing difficulties³.</p>	£96
Ranitidine	<p>(DT)*</p> <p>5mg/5ml</p>	Dispersible tablets and liquid available	<p>Consider a PPI e.g. lansoprazole or omeprazole- see entries.</p> <p>150mg dispersible tablets, 60; 300mg dispersible tablets, 30; 75mg/5ml oral solution, 100ml and 300ml.</p> <p>Dispersible tablets contain sodium whilst suspensions contain sorbitol and alcohol. The suspension can be diluted with water. Both can be used with a feeding tube³</p>	<p>£6.39 (300ml syrup)</p> <p>£34.94 (150mg and 300mg dispersible tablets)</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Renavit			<p>Barts Health NHS Trust have switched their renal dialysis patients from Dialyvit to Renavit</p> <p>It is ACBS approved “food for special medical purposes,” indicated for the dietary management of water soluble vitamin deficiency in renal failure patients receiving dialysis and is listed in the Drug Tariff.</p>	£12.50 (100 tablets)
Repaglinide	-	<p>Consider alternative.</p> <p>Tablets could be crushed.</p>	<p>Consider alternatives. Tablets can be crushed and mixed with water but may be absorbed faster, monitor blood sugar³</p>	£10.46

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Riboflavin (vitamin B ₂)	(DT) * 120mg/5ml	No information. Seek specialist advice.	Riboflavin (vitamin B ₂) 10mg, 50mg and 100mg tablets and capsules are unlicensed. There is no evidence of its value as a supplement; however, it can be used in the management of certain metabolic disorders ⁷ . There is no information on administration via feeding tubes.	-
Rifampicin	-	Licensed syrup available	100mg/5ml, 120ml bottle. Medicines for the treatment of tuberculosis are restricted to be prescribed in secondary care. Stop the enteral feed for 2 hours and flush. Shake and draw the required liquid into a syringe and dilute with an equal volume of water. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Do not restart the feed for 30 minutes – 1 hour ^{1,3} . Do not open capsules owing to the risk of contact sensitisation ¹ .	
Riluzole		Oral suspension	5mg/ml sugar-free, 300ml There is a shared care guideline for Amyotrophic Lateral Sclerosis with BHRUT only. Otherwise this should be prescribed in hospital only.	£100

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Risedronate	-	See Alendronate monograph	Use Alendronate first line if possible. Consider strontium ranelate sachets if necessary.	
Risperidone	-	Licensed liquid and dispersible tablets available	1mg/ml, 100ml bottle. Stop the enteral feed and flush. Draw the required liquid into a syringe and flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹ . Orodispersible tablets 500mcg, 1mg, 2mg, 3mg and 4mg, 28 tablets. No specific data on enteral tube administration is available ¹ .	£3.99 liquid £21.07 1mg x 28 orodispers tablets

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Rivaroxaban	-	Tablets can be crushed	<p>Rivaroxaban may be crushed and mixed with water or apple puree immediately prior to oral administration⁵.</p> <p>The crushed tablets is licensed to be given through gastric tubes. Crush the tablet and mix with 15mL water. Draw into a syringe and flush. Rinse to ensure all medication is flushed. Flush the tube⁵.</p>	£54 10mg x 30
Rivastigmine	-	Oral solution or patches	<p>2mg/ml oral solution, 120ml. 4.6mg/24hr, 9mg/24hr patch, 30 patches. Switching from capsules or oral solution to patches (and vice versa). From Exelon transdermal patch SPC ⁵.</p> <p>3mg-6mg oral daily can switch to 4.6mg/ 24 hour patch</p> <p>9mg oral daily can switch to 9.5mg/ 24 hour patch if the oral dose was stable and well tolerated, if not, switch to 4.6mg/ 24 hour patch</p> <p>12mg oral daily can switch to 9.5mg/ 24 hour patch.</p> <p>If needed, the capsule contents can be dispersed in water and administered via NG tube^{1,3}. Stop the feed and flush. Allow 1 hour break. Place the capsule contents in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube. Allow 1 hour before restarting feed¹.</p>	<p>£77.97 4.6mg patch x 30</p> <p>£96.82 120ml 2mg/ml oral solution sugar free</p> <p>£2.79 x 28 3mg capsules</p>
Rosuvastatin	-	<p>Atorvastatin chewable tablets</p> <p>Simvastatin liquid</p> <p>Tablets will disperse.</p>	<p>Switch to either licensed atorvastatin chewable tablets or simvastatin liquid.</p> <p>Rosuvastatin tablets will disperse. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹.</p>	£26.02

Ss...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
St Mark's oral rehydration powder	£1,733	The individual ingredients can be purchased and made up by the patient	<p>St Mark's electrolyte mix is a specially formulated drink recommended by North West London Hospital NHS trust for patients with a high stoma output. It is high in salt and the aim is to reduce losses from the stoma by helping the body absorb fluid.</p> <p>The electrolyte mix need to be made up freshly everyday</p> <p>20g (six level 5ml spoonful) of Glucose 2.5g (one heaped 2.5ml spoonful) of Sodium Bicarbonate (baking soda) 3.5g (one level 5 ml spoonful) of Sodium Chloride (salt)</p> <p>This needs to be dissolved in 1litre of cold tap water. It is recommended that you drink 1litre of the electrolyte mix each day.</p> <p>Patient information leaflet on eating and drinking with a high stoma output (including making up the St Mark's electrolyte mix) from St Mark's Hospital is attached: http://www.stmarkshospital.nhs.uk/wp-content/uploads/2014/05/High-output-stoma-2014.pdf</p>	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Salicylic acid (topical)	<p>(DT)*</p> <p>2% in aqueous cream BP</p> <p>2%/sulphur 2% in aqueous cream</p> <p>5% cream</p> <p>10% in aqueous cream BP</p> <p>5% oint</p> <p>10% oint</p> <p>20% oint</p>	Various licensed topical preparations	<p>Licensed ointment, cutaneous solution, paint and gel.</p> <p>2% ointment, 450g (GSL) 50% ointment, 12g, 28g (Pickles brand) and 6g (Verrugon brand)</p> <p>Various strengths of cutaneous solution, paint, gel for warts, corns and calluses, refer to BNF for licensed preparations</p> <p>Also see BAD list approved Unlicensed Dermatological preparations.</p> <p>Please note: Zinc and Salicylic acid paste is unlicensed.</p>	<p>£8.08 2% ointment</p> <p>For 50% ointment</p> <p>£3.61 6g</p> <p>£1.94 12g</p> <p>£2.77 28g</p>
Selegiline		Oral lyophilisate can be dissolved on tongue	<p>1.25mg lyophilisates (Zelapar), 30 tablets. Can be dissolved on the tongue.</p> <p>The manufacturer does not recommend giving the oral lyophilisate via the enteral feeding tube as there is no information to support this use²⁸.</p>	£43.16

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Senna	-	Licensed liquid available.	Stop the enteral feed and flush very well. Draw the required liquid into a syringe and flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube very well ¹	£4.76
Sertraline	<u>(DT)</u> * 50mg/ 5ml 100mg/ 5ml	Specialist advice: Consider changing to an alternative with a licensed formulation. Tablets will disperse.	Caution: Only change under specialist advice. Switching within the class can cause serotonin syndrome, withdrawal period is needed ¹⁸ . Licensed alternatives are available. Tablets will disperse if switching not possible. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ . This may have an anaesthetic effect on the tongue; do not retain in the mouth and take care with hot foods after administration ³ .	£1.05 (50mg x 28)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Sildenafil	(DT)* 10mg/ 5ml 25mg/ 5ml	Consider sildenafil chewable tablets or vardenafil orodispersible tablets	<p>Either sildenafil chewable 25mg, 50mg, 100mg tablets or vardenafil orodispersible 10mg tablets.</p> <p>Vardenafil: One tablet should be placed on the tongue where it will rapidly disintegrate and then swallowed. This must be taken without liquid as this affects its bioavailability⁵.</p> <p>Note: the vardenafil 10mg orodispersible tablet and 10mg film coated tablets are not bioequivalent.</p> <p>Sildenafil 10mg/ml oral suspension, 112ml is licensed for pulmonary arterial hypertension- for this indication this should be prescribed by hospital only. Before withdrawing the required dose, shake the bottle vigorously for at least 10 seconds⁵.</p>	<p>£17.88 Vardenafil orodispersible tablets</p> <p>£1.05 4 x 25mg chewable tablets</p> <p>£1.03 4 x 50mg chewable tablets</p> <p>£1.11 4 x 100mg chewable tablets</p> <p>£186.75 Sildenafil suspension</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Simvastatin	£341	Licensed sugar free oral suspension now available or tablets will disperse	Use licensed preparation where possible, prescribe as: simvastatin oral suspension sugar free , 20mg/5mL or 40mg/5mL, 150ml bottle. No evidence on use via feeding tubes ⁵ . Crush the tablet and disperse with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe and flush ¹ .	£126.64 (20mg/5ml) £193.45 (40mg/5ml)
Sodium Benzoate	(DT)* 500mg/5ml	No licensed formulations	NHS England commissioned, refer back to specialist. Indication: treatment of urea cycle disorders ⁷ .	
Sodium Bicarbonate		Licensed 420mg/5ml (1mmol/ml) oral solution sugar-free Licensed 600mg tablets Licensed 500mg capsules	Licensed 420mg/5ml (1mmol/ml) oral solution sugar-free, 100ml, 500ml 600mg tablets 100, 500mg capsules, 56. SodiBic 1mmol/ml (8.4%) oral solution, 100ml is an unlicensed brand, however, this is listed in the Drug Tariff and hence if prescribed by brand will be a fixed price. A Certificate of Analysis is kept on file.	£39.80 per 100ml £199.20 per 500ml £25.83 (600mg x 100 tablets) £2.22 (500mg x 56 capsules) £17.71 per 100ml (SodiBic)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Sodium Chloride	<p>(DT)*</p> <p>1.17g/5ml or 4mmol/ml</p> <p>1.5g/5ml or 5.13 mmol/ml</p>	<p>Licensed oral solution</p> <p>Licensed tablet (600mg m/r tablet) and injection.</p>	<p>Licensed oral solution sugar free 292.5mg/5ml (1mmol/ml), 100ml, Licensed oral solution 1.46g/5ml (5mmol/ml), 100ml.</p> <p>Licensed tablet (600mg m/r tablet) and injection/ infusions. Injection can be given enterally³</p>	<p>£30.20 292.5mg/5ml (1mmol/ml), 100ml</p> <p>£19.55 1.46g/5ml (5mmol/ml), 100ml</p> <p>£6.05 (100 tablets)</p>

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Sodium Chloride Eye Drops 0.9% P/F	£489	Minims are available	0.9% single use licensed Minims (20 units per pack) are available ²	£6.97
Sodium Chloride Eye Drops 5% P/F			Refer to Ophthalmic special order products table below by The Royal College of Ophthalmologists.	
Sodium Chloride Eye ointment 5%	(DT) * 5g	No information	No licensed sodium chloride ointment. Licensed sodium chloride eye drops. Refer to Ophthalmic special order products table below by The Royal College of Ophthalmologists.	-

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Sodium Chloride Nebuliser Solution	£967	Use licensed 3%, 6% and 7% solution	<p>Little evidence for use of hypertonic saline but if required, please prescribe licensed strength, unit dose and pack size to ensure that these are dispensed:</p> <p>Mucoclear 3% (20x 4ml, 60x 4ml) Mucoclear 6% (20x 4ml) Nebusal 7% (60X4ml)</p>	<p>3% and 6% £12.98 (20) £27 (60)</p> <p>7% £27.00</p>
Sodium Dihydrogen phosphate	(DT) * 780mg/5ml		<p>No licensed alternative.</p> <p>NB The formulation specified in the DT part VIII B is sodium dihydrogen phosphate dihydrate oral solution</p>	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Sodium Hyaluronate	-	Use licensed preparations	<p>Hylo-Tear (containing sodium hyaluronate 0.1% preservative-free) is a multi-dose 10ml bottle containing 300 drops. Expires 6 months after opening³⁰.</p> <p>Hylo-Forte (containing sodium hyaluronate 0.2% preservative-free) is a multi-dose 10ml bottle containing 300 drops. Expires 6 months after opening³⁰.</p>	<p>0.1% £8.50</p> <p>0.2% £9.50</p>
Sodium Oxybate	£1080	Use licensed version	<p>Sodium oxybate 500mg/mL is licensed⁵. No information on use in feeding tubes.</p> <p>For paediatrics, this is NHSE commissioned and should be referred back to the specialist³⁹.</p>	£360
Sodium Phenylbutyrate			<p>500mg tablets, 250. Granules 940mg/g, 266g. Granules should be mixed with food before taking orally and must not be administered by nasogastric or gastrostomy tubes⁷.</p> <p>This is NHSE commissioned and should be referred back to the specialist³⁹.</p>	<p>500mg tablets x 250 £493</p> <p>Granules 940mg/g 266g £860</p>

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Sodium Valproate	-	Licensed liquid, crushable tablets, m/r granules	<p>200mg/5mL sugar or sugar-free liquids, 300ml. The liquid can be used via feeding tubes but doses may need to be altered³.</p> <p>100mg crushable tablets can be used but only practical for lower doses. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹.</p> <p>If needed, the crushable tablets can be crushed and mixed with a small amount of soft food e.g. yoghurt or jam. They have an extremely bitter taste³.</p> <p>In patients where adequate control has been achieved, Epilim Chronosphere m/r granules are interchangeable with other conventional or prolonged release Epilim on equivalent daily dosage basis. Swallow directly or sprinkle on yoghurt, mousse, jam, ice-cream, milk shake, orange juice at cold or room temperature. Do not crush or chew. The granules should not be given in babies' bottles as they can block the nipple⁵.</p> <p>If prescribing a licensed formulation, the MHRA have issued guidance to advise the need for continued supply of a particular manufacturer's product should be based on clinical judgement and consultation with patient/carer taking into account factors such as seizure frequency and treatment history for epilepsy (generic or proprietary)³³.</p>	<p>£9.33 Epilim Liquid</p> <p>£4.24 Sugar-free liquid</p> <p>£5.60 Crushable tablets</p>

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Sotalol	<u>(DT)*</u> 25mg/ 5ml	Licensed atenolol and propranolol liquid available. Sotacor brand is soluble.	Licensed atenolol or propranolol liquid is available if a switch is appropriate. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ .	See atenolol or propranolol monographs
Spironolactone	<u>(DT)*</u> 5mg/ 5ml 10mg/ 5ml 25mg/ 5ml 50mg/ 5ml 100mg/ 5ml	Tablets will disperse	Most brands of tablets will disperse in water if shaken for 2- 5 minutes ¹ . Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently for a few minutes to disperse, flush. Rinse the syringe and flush. Flush the tube ¹ .	£3.16 (50mg tablets x 28)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Strontium ranelate	-	Granules licensed for oral use only.	<p>2g of granules in each sachet. Mix in a minimum of 30ml of water to form a suspension. The absorption is reduced by food, milk and derivative products and therefore should be administered in-between meals, preferably at bedtime at least two hours after eating.</p> <p>No information for use in feeding tubes.</p> <p>Refer to NICE for place in therapy for postmenopausal osteoporosis.</p>	£27.08 for 28 sachets
Sucralfate	-	Consider alternatives e.g. ranitidine.	Suspension has been discontinued.	

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Sulfadiazine	£189	No information	Consider an alternative? Co-trimoxazole?	-
Sulfasalazine	-	Licensed liquid 250mg/5ml (500ml) sugar-free, suppositories, enema.	Licensed 250mg/5ml sugar-free oral suspension. Stop the enteral feed and flush. Draw the required liquid into a syringe and flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹	£42.84
Sulpiride	-	Licensed oral solution	200mg/5ml, 150ml bottle. Stop the enteral feed and flush. Draw the required liquid into a syringe and flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹ . Disperse tablets if intrajejunal administration is required ¹ Caution: UK Medicines Information have published a product safety assessment report ³⁸ for amisulpiride liquid after National Reporting and Learning System (NRLS) identified a number of incidents regarding confusion with amisulpiride and sulpiride and other similar sounding medicines. Please take extra care in prescribing the correct medicine and strength.	£28
Sumatriptan	-	Zolmitriptan orodispersible tablets	Consider zolmitriptan orodispersible tablets- see monograph. No information on dispersing sumatriptan tablets or administration via feeding tubes.	

Tt...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Tacrolimus		Caution: Licensed 0.2mg and 1mg granules (Modigraf) are available. Licensed for NG tubes. Do not switch in primary care.	Extreme CAUTION: Any change must be managed under specialist supervision. Refer patients back to the specialist unit for switching. Granules (0.2mg and 1mg) are available. Bioavailability between brands is not the same. Licensed for use in NG tubes ⁵ . Avoid dosing for 1 hour before or 2 to 3 hours after a meal. Refer to SPC :	£356.65
Tamoxifen	£24	Licensed liquid available, 10mg/5ml (150ml)	Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹ . Tamoxifen is an anti-oestrogen. Crushing tablets should be avoided to minimise operator exposure. No specific data on enteral tube administration is available ¹ .	£29.61

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Tamsulosin	(DT)* 400mcg /5ml		<p>The capsules contains m/r granules which should not be crushed. The granules can be mixed in water and swallowed whole³.</p> <p>The granules clump together when mixed with water and can be very difficult to draw into the syringe and block feeding tubes¹.</p> <p>The m/r tablet should not be crushed either³.</p>	£3.89
Telmisartan	-	<p>Consider ACE first line (ramipril liquid.) If ARB necessary, consider losartan suspension.</p>	<p>If possible, switch to an ACE as first line treatment (licensed ramipril liquid is available).</p> <p>Consider licensed losartan suspension if an ACE is unsuitable.</p> <p>No information via feeding tubes.</p>	Refer to entries for ramipril and losartan.

BNF Name	Average local un-licensed price 4,16	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Temazepam	-	Licensed liquid available 10mg/5mL 300mL.	Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹ . Check for alcohol and sorbitol content ³	£121.08
Terbinafine	(DT) * 250mg/ 5ml	Consider alternatives. Tablets could be crushed.	Consider alternatives. Stop the feed and flush. Crush the tablet and disperse with 15mL water. Draw mixture into the syringe, shake gently, flush. Rinse the syringe/pestle and mortar, etc and flush. Flush the tube ¹	£1.20

BNF Name	Average local unlicensed price 4,16	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Testosterone patch	£395	Topical gel (however, check strength and licensed indication)	Consider licensed alternatives. Testosterone 300mcg/24hr transdermal patch (Intrinsa) had the marketing authorisation withdrawn by the manufacturer in 2012 for commercial reasons, however, it is still available as an unlicensed product through HFA specials (www.hfa-specials.co.uk) or the wholesaler Movianto (letter from HFA kept on file). It is licensed for the treatment of hypoactive sexual desire disorder (HSDD) in bilaterally oophorectomised and hysterectomised (surgically induced menopause) women receiving concomitant oestrogen therapy. Other testosterone preparations do not have this licensed indication.	£31.11 Testogel £32 Testim gel £28.67 Tostran gel
Tetrabenazine	(DT) * 12.5mg/ 5ml 25mg/ 5ml	Tablets could be crushed if necessary.	Consider alternatives. Tablets can be crushed and mixed with water for administration. Flush well ³	£100.00

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Theophylline	-	Consider alternatives or aminophylline Injection enterally with specialist advice.	Slo-phyllin (60mg, 125mg and 250mg) m/r capsules can be opened and poured down a feeding tube with extensive flushing, high risk of blockage ¹ . Capsule contents can be given on soft food – but must not be chewed. Stop feed for 1 hour before and 2 hours after dose ³ . Aminophylline injection can be used orally but dosage changes are needed ¹ – Seek specialist advice.	
Thiamine	<u>(DT)</u> * 50mg/ 5ml 100mg/ 5ml	Tablets can be crushed and dispersed in water	Benerva tablets disperse in 10ml of water within 2 minutes if shaken, fine dispersion flushes through feeding tube ¹ . Tablets can be crushed and mixed with water for administration ³	£10 (100mg tablets)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Tizanidine	(DT)* 2mg/ 5ml Oral solution and oral suspension	Tablets can be crushed and dispersed in water	Tablets can be crushed and dispersed in water. Zanaflex brand of tablets do not disperse readily, but will disintegrate if shaken in 10ml of water for 5 minutes. The resulting dispersion will flush via an 8Fr NG tube without blockage ¹ . Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently for a few minutes to disperse, flush. Rinse the syringe and flush. Flush the tube ¹ .	£3.49 (2mg x 120 tablets) £36.82 (4mg x 120 tablets)
Tocopherol (Vitamin E Suspension)	£69	Licensed suspension	Vitamin E Suspension, alpha tocopheryl acetate 500 mg/5 ml. 100 ml ² . Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹ . D-alpha tocopherol (as tocofersolan which is water soluble) 50 mg/mL, 20ml is also available ² .	£53.50 100ml Alpha tocopheryl Acetate £54.55 20ml Vedrop (D-alpha tocopherol)

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Tolterodine	(DT) * 2mg/ 5ml	Tablets will disperse	<p>Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹.</p> <p>M/R capsules are not suitable for use via enteral feeding tubes as the granules do not disperse well in water and do not draw up into a syringe^{1,3}. Patients on once daily XL capsules can be switched to twice daily tablets.</p>	£1.82 56 x 2mg tablets
Topiramate	(DT) * 25mg/ 5ml 50mg/ 5ml 100mg/ 5ml	Sprinkle capsules for oral intake only. Tablets disintegrate on shaking.	<p>Sprinkle capsules will block the tube. Tablets can be dispersed with shaking. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water & shake vigorously, flush. Rinse the syringe & flush. Flush the tube¹.</p> <p>Sprinkle capsules can be opened and contents can be sprinkled onto soft food^{1,3}.</p> <p>If prescribing a licensed formulation, the MHRA have issued guidance to advise the need for continued supply of a particular manufacturer's product should be based on clinical judgement and consultation with patient/carer taking into account factors such as seizure frequency and treatment history for epilepsy (generic or proprietary)³³.</p>	£1.60 60 x 25mg tablets

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Tramadol	-	Licensed soluble tablets, drops, injection, soluble tablets	<p>50mg soluble tablets sugar-free, 100 tablets. These can be used via a feeding tube in 10mL water¹. They have high sodium content. The soluble tablets flushes via an 8Fr NG tube without blockage, but can block finer tubes¹.</p> <p>Licensed 100 mg/ml oral drops (2.5mg/drop), oral solution, 10ml have not been tested in feeding tubes⁵.</p>	<p>£13.33 (100 tablets)</p> <p>£3.50 (oral drops)</p>
Trandolapril	-	<p>Consider licensed ramipril liquid</p> <p>No info on use in feeding tubes.</p>	<p>Always consider switching to a licensed product first line; licensed ramipril liquid is available if appropriate.</p> <p>No evidence for using trandolapril via a feeding tube¹.</p>	

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Tranexamic Acid	(DT)* 250mg/5ml 500mg/5ml	Tablets will disperse, injection can be used orally	Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube. For very fine tubes the injection can be used ¹	£4.42
Trazodone	-	Licensed liquid available 50mg/5mL Capsules can be opened	50mg/5ml oral solution sugar-free, 120ml. Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Dilute dose with equal parts water if administering into the jejunum ¹ If necessary, Molipaxin capsules can be opened and the contents mixed with 10ml water and flushed down a feeding tube ¹ .	£146.31
Tricitrate	£18	Potassium citrate mixture	Tricitrate oral solution contains sodium citrate, potassium citrate and citric acid. Each ml contains 2mmol bicarbonate, 1 mmol sodium and 1mmol potassium. The solution contains a very small amount of alcohol ^{47,48} . It is used to treat renal tubular acidosis, primary hyperoxaluria, urinary alkalosis and cystinosis in children ^{47,48} . Medicines for Children provide a PIL attached here: http://www.medicinesforchildren.org.uk/tricitrates-oral-solution-renal-tubular-acidosis-and-cystinosis Potassium Citrate Mixture BP, each 1ml provides 2.8mmol of potassium, 0.9mmols of citrate and an equivalent of 2.8mmol of bicarbonate ⁴⁸ . This is an OTC product to treat discomfort in mild urinary tract infections ² .	

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Trientine	£166	No known alternatives. Review need.	Trientine is used for the treatment of Wilson's disease only in patients intolerant of penicillamine ² . No information for giving via a feeding tube ^{1,3} .	
Trifluoperazine	-	Licensed liquid available	1mg/5mL, 200ml oral solution sugar free and 5mg/5mL, 150ml oral solution sugar free. Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Dilute with equal parts water for jejunal administration ¹	£102.53 (1mg/5ml) £25.50 (5mg/5ml)

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Trihexyphenidyl (Benzhexol)	(DT)* 2mg/5ml	Licensed liquid 2mg/5ml 5mg/5ml. Tablets will disperse.	Licensed oral solutions: 2mg/5ml, 200ml oral solution sugar-free (Rosemont) 5mg/5ml, 200ml oral solution (Rosemont). Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. ¹ If using tablets, disperse in water immediately prior to administration. Stop the enteral feed and flush. Draw the medicine into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. ¹	£48.75 2mg/5ml £22 5mg/5ml

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Trimetazidine	£232	All forms are unlicensed. Little evidence for use	Not licensed in the UK. Use NICE recommended pathways first line. European Medicines Agency recommends restricting indication for patients with stable angina pectoris and deletion of existing indications for treatment of vertigo, tinnitus and vision disturbance. See press release (2012) attached: http://www.ema.europa.eu/docs/en_GB/document_library/Press_release/2012/06/WC500129070.pdf	
Trimethoprim	-	Licensed suspension available 50mg/5mL	Stop the enteral feed and flush. Shake and draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹ . Hold the feed for 30 minutes before and after dosing ³ . The Trimopan brand mixes easily with an equal volume of water and this reduces resistance to flushing.	£2.03
Trospium	-	Review to alternative. Crush and mix with water	Consider alternative antimuscarinic. Crush and disperse in water immediately before use ³	£5.06

Uu...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Ursodeoxycholic acid	-	Licensed suspension available 250mg/5mL	Stop the enteral feed and flush. Draw the required liquid into a syringe and dilute with equal parts water. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹	£26.98

Vv...

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Valproic acid	-		Refer to entry on Sodium valproate .	
Valsartan	-	Consider ACE first line (ramipril liquid.) If ARB necessary, consider losartan suspension	If possible, switch to an ACE as first line treatment (licensed ramipril liquid is available). Consider licensed losartan suspension if an ACE is unsuitable. Licensed 3mg/ml oral solution, 160ml for the treatment of hypertension in children and adolescents. Due to the smaller strength, this is unlikely to be suitable for use in adults due to the volume required for administration Valsartan capsules can be opened and contents dispersed in 15mL water ¹ .	Refer to entries for ramipril and losartan.

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Vancomycin	£380	Powder for solution for infusion is licensed for nasogastric use ⁵	Stop the enteral feed and flush. Reconstitute the powder as directed by the current SPC ⁵ . Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube ¹ Unless specified the injection is only to be used orally/enterally and not parenterally (different indications) ⁵	£14.90
Vardenafil	-	Licensed orodispersible tablets are available.	Consider sildenafil chewable tablets, see monograph. Vardenafil orodispersible tablets, 10mg are available if appropriate. One tablet should be placed on the tongue where it will rapidly disintegrate and then swallowed. This must be taken without liquid as this affects its bioavailability ⁵ . Note: the vardenafil 10mg orodispersible tablet and 10mg film coated tablets are not bioequivalent ⁵ .	£17.88

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Venlafaxine	(DT)* 37.5mg/5ml 75mg/5ml	37.5mg tablets will disperse easily	75mg tablets require shaking in 10mL water to disperse, and may block tubes finer than 8Fr. Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube ¹ . M/R capsule contents are not suitable for administration via enteral feeding tubes but can be given in smooth food e.g. yoghurt for patients with swallowing difficulties as long as the beads are swallowed whole ³ .	
Verapamil	-	Licensed liquid available 40mg/5mL	Stop the enteral feed and flush. Draw the required liquid into a syringe. Flush the medication through the feeding tube. Rinse and flush. Flush the feeding tube. Maltitol content may cause diarrhoea in high doses ¹ . Hold the feed for 1 hour before and after dosing ³ .	£39
Vigabatrin	-	Licensed sachets	500mg powder/sachet sugar free, 50 sachets. Sachets can be mixed with water or fruit juice and administered via a feeding tube ^{1,3} .	£24.60

Ww...

BNF Name	Average local unlicensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Warfarin	£117	A licensed liquid is available from Rosemont.	<p>A licensed liquid is available from Rosemont pharmaceuticals. 1mg/mL 150mL.</p> <p>Hold the feed for 1-2 hours before and after dosing³.</p> <p>If required, warfarin tablets can be crushed and suspended in water, or dispersed in water within 5 minutes if shaken (unlicensed) ^{1,3}.</p> <p>Stop the feed and flush. Place the tablet in the barrel of the syringe with 10mL water and shake gently, flush. Rinse the syringe and flush. Flush the tube¹.</p> <p>Caution: Monitor INR more closely following a formulation change. Note: The vitamin K content in feeds can vary; any change in feed regime may affect the INR³.</p>	£108

Zz...

BNF Name	Average local un-licensed price ^{4,16}	Alternative product	Detailed instructions for use ^{1,2,3} NOTE: Only ever use oral syringes	Cost of licensed product ^{2,4}
Zolmitriptan	-	-	2.5mg and 5mg orodispersible tablet sugar-free, 6 tablets. Dissolve on the tongue. No information on administration via feeding tubes.	£1.70 (2.5mg) £12.89 (5mg)
Zonisamide	£261		25mg, 50mg and 100mg capsules. If required, the manufacturer has information on emptying the capsules and mixing with water, apple juice, apple sauce or chocolate pudding to facilitate swallowing ⁵⁰ .	£45.25 56 x 50mg caps
Zopiclone	(DT)* 3.75mg/ 5ml 7.5mg/ 5ml	Switch to diazepam / temazepam liquid	No evidence for use in a feeding tube ¹ . Consider switching to an alternative licensed liquid formulation e.g. diazepam / temazepam. Actavis brand tablets are film coated to mask bitter taste, the coating may block the tube. Zimovane brand tablets are not recommended to be crushed as the bioavailability may be altered ¹ .	See diazepam and temazepam monograph

(DT)* = Drug Tariff April 2017. Refer to for strength and pack size.

Index:

Acetazolamide; Acetylcysteine Eye Drops P/F; Acetylcysteine; Aciclovir; Albendazole; Alendronic Acid; Alfacalcidol; Alfuzosin; Allopurinol; Amiloride; Aminophylline; Amiodarone; Amisulpride; Amitriptyline; Amlodipine; Anastrozole; Antacid and Oxetacaine; Arginine (L-arginine); Aspirin; Atenolol; Atorvastatin; Azathioprine;

Baclofen; Bendroflumethiazide; Benzatropine; Betahistine; Betaine; Bezafibrate; Bicalutamide; Biotin; Bisacodyl Rectal Solution; Bisoprolol; Bromocriptone; Bumetanide; Buspirone;

Cabergoline; Calcium Carbonate; Calcium Resonium; Candesartan; Captopril; Carbamazepine; Carbimazole; Carvedilol; Celecoxib; Cetirizine; Chloral Hydrate; Chlordiazepoxide; Chlorothiazide; Chlorphenamine; Chlorpromazine; Ciclosporin; Cimetidine; Cinnarizine; Ciprofloxacin (drops); Ciprofloxacin (oral); Citalopram; Clarithromycin; Clindamycin; Clobazam; Clomethiazole; Clonazepam; Clonidine liquid; Clonidine patch; Clopidogrel; Co-amilofruse; Co-amilozide; Co-amoxiclav; Co-beneldopa; Co-Careldopa; Co-codamol; Co-Dydramol; Coal Tar and Salicylic Ointment; Coal Tar solution 6% / Salicylic acid 2% in ointment; Coal Tar Solution 5% in Betamethasone Valerate 0.025% ointment; Colchicine; Colecalciferol; Colestyramine; Co-tenidone; Cyclizine; Cyproterone;

Dantrolene; Demeclocycline; Desmopressin Nasal spray; Dexamethasone (eye); Dexamethasone (oral); Dexamfetamine; Diazepam; Diazoxide; Diclofenac; Digoxin; Dihydrocodeine; Diltiazem; Dipyridamole; Docusate sodium; Domperidone; Donepezil; Dosulepin; Doxazosin; Doxycycline;

Enalapril; Entacapone; Ephedrine nasal drops; Eprosartan; Ergocalciferol; Escitalopram; Esomeprazole (tablets); Esomeprazole (sachets); Ethambutol; Ezetimibe;

Felodipine; Fenofibrate; Ferrous sulphate; Fexofenadine; Finasteride; Flecainide; Fluconazole; Fludrocortisone; Fluoxetine; Flupentixol; Fluphenazine; Folic Acid; Fosfomycin; Furosemide;

Gabapentin; Galantamine; Glibenclamide; Gliclazide; Glimepiride; Glipizide; Glyceryl trinitrate; Glycopyrronium (oral and topical); Griseofulvin;

Haloperidol; Hydroxycarbamide; Hydroxychloroquine; Hyoscine Butylbromide; Hyoscine Hydrobromide; Hypromellose Eye Drops; Hypromellose Eye Drops 0.25% P/F;

Ibuprofen; Imipramine; Indapamide; Indometacin; Irbesartan; Isoniazid; Isosorbide dinitrate/mononitrate; Ispaghula husk; Itraconazole;

Ketoconazole;

Lactulose; Lamotrigine; Lansoprazole; Lercanidipine; Levamisole; Levetiracetam; Levomepromazine (Methotrimeprazine); Levothyroxine; Lidocaine HCl_Gel; Lisinopril; Lithium; Lofepamine; Loperamide; Loratadine; Lorazepam; Losartan;

Magnesium Glycerophosphate; Magnesium Oxide; Mebendazole; Mebeverine; Mefenamic acid; Megestrol; Melatonin; Meloxicam; Menadiol Sodium Phosphate; Mepacrine; Mercaptopurine; Mesalazine; Metformin; Methadone capsule; Methotrexate; Methyl dopa; Methylphenidate; Metoclopramide; Metolazone; Metoprolol; Metronidazole; Mexiletine; Midazolam; Minocycline; Minoxidil; Mirtazepine; Moclobemide; Modafinil; Monteleukast; Morphine sulphate; Multivitamins; Mycophenolate;

Naftidrofuryl oxalate; Naltrexone; Naproxen; Naratriptan; Nefopam; Neostigmine; Nicorandil; Nicotinic Acid; Nifedipine; Nitrazepam; Nitrofurantoin; Nortriptyline; Nystatin;

Olanzapine; Olmesartan; Omeprazole; Ondansetron; Orphenadrine; Oxandrolone; Oxybutynin; Oxycodone; Oxytetracycline;

Pancreatic enzymes; Pantoprazole; Paracetamol; Paraldehyde 50% in Olive Oil; Paroxetine; Perindopril erbumine; Phenobarbitol; Phenytoin; Phytomenadione; Pilocarpine HCl_Eye Drops P/F; Pioglitazone; Pirenzepine; Pizotifen; Polyvinyl alcohol; Posaconazole; Potassium Permanganate solution; Pravastatin; Prazosin; Prednisolone; Prednisolone Eye drops; Prednisolone Sodium Phosphate Ear Dps; Pregabalin; Primidone; Probenecid; Prochlorperazine; Procyclidine; Promazine ; Promethazine; Propranolol ; Pyrazinamide; Pyridostigmine; Pyridoxine;

Quetiapine;

Ramipril; Ranitidine; Renavit; Repaglinide; Riboflavin; Rifampicin; Risedronate; Risperidone; Rivaroxaban; Rivastigmine; Rosiglitazone; Rosuvastatin;

St Mark's oral rehydration powders; Salicylic Acid; Selegiline; Senna; Sertraline; Sildenafil; Simvastatin; Sodium Bicarbonate; Sodium Chloride; Sodium Chloride Eye Drops 0.9% P/F; Sodium Chloride Eye Drops 5% P/F; Sodium Chloride Eye Drops 5% ointment; Sodium chloride Nebuliser Soln 7%; Sodium Dihydrogen phosphate; Sodium Hyaluronate; Sodium Phenylbutyrate; Sodium valproate; Sotalol; Spironolactone; Strontium; Sucralfate; Sulfadiazine; Sulfasalazine; Sulpiride; Sumatriptan

Tacrolimus; Tamoxifen; Tamsulosin; Temazepam; Terbinafine; Testosterone patch; Tetrabenazine; Theophylline; Thiamine; Tizanidine; Tocopherol; Tolterodine; Topiramate; Tramadol; Trandolapril; Tranexamic Acid; Trazodone; Tricitrates; Trientine; Trifluoperazine; Trihexyphenidyl (Benzhexol); Trimetazidine; Trimethoprim; Trospium;

Ursodeoxycholic acid;

Valproic acid; Valsartan; Vancomycin; Vardenafil; Venlafaxine; Verapamil; Vigabatrin;

Warfarin;

Zopiclone; Zolmitriptan

Ophthalmic Special order products The Royal College of Ophthalmologists last updated August 2016
(www.rcophth.ac.uk)³⁶

BNF name and form (G. = eye drops Oc. = eye ointment)	Comments and suggested alternatives
Ciclosporin	
Oc.Ciclosporin 2%w/w	Suggest error, check if 0.2%w/w intended
Oc.Ciclosporin 0.2%w.w*	Suggest licensed ciclosporin unpreserved eye drops 0.1% (Ikervis®). If ointment form required for patients under 18 for severe dry eye, graft rejection, severe vernal conjunctivitis, some immune mediated disorders. Preservative-free but contains lanolin. Commercially available as veterinary product Optimune®. Source from veterinary wholesaler. Veterinary wholesalers will supply to community pharmacists. (Pharmacies dealing with veterinary products may not possess a Wholesale Dealer's licence and therefore only supply against prescriptions from veterinary prescribers).
G.Ciclosporin 0.05%w/v PF SDUs	Suggest licensed ciclosporin unpreserved eye drops 0.1% (Ikervis®). If unit dose form required 0.05%w/v PF SDUs available as licensed product in USA, Restasis®. Licensed in USA as a topical immunomodulator indicated to increase tear production in patients whose tear production is presumed to be suppressed due to ocular inflammation associated with keratoconjunctivitis sicca.
Acetylcysteine	
G.Acetylcysteine 0.5%w/v	Suggest error, check if 5%w/v intended (Ilube®)
G.Acetylcysteine 5%w/v PF multidose	For dry eye with mucous tear film in patients intolerant of benzalkonium chloride. (Ilube® available which is not preservative free).
G.Acetylcysteine 10%w/v preserved and PF multidose	For severe dry eye with mucous tear film.

BNF name and form (G. = eye drops Oc. = eye ointment)	Comments and suggested alternatives
Lubricants	
G.Hypromellose 0.1%w/v PF G.Hypromellose 0.25%w/v, G.Hypromellose 0.25%w/v preservative free multidose multidose G.Hypromellose 0.3%w/v PF multidose, 0.32%w/v PF, 0.5%w/v PF, 1%w/v PF multidose	Preserved – No advantage prescribing strengths other than licensed 0.3%w/v, Unlicensed special list in Drug Tariff Preservative free – Licensed preservative free single dose units classed as medicines e.g. Artelac® 0.32%w/v and medical devices containing hypromellose 0.3%w/v e.g. Evolve® hypromellose 0.3% preservative free, Hypromellose 0.3% (Alissa Healthcare) preservative free, Hydromoor®, Hypromol® Lumecare® singles hypromellose 0.3% preservative free, PF drops Hypromellose 0.3%, Ouc-lube®, Softdrops® 0.3% eye drops preservative free, PF Drops® hypromellose 0.3% and Tear-lac® Hypromellose 0.3% PF single dose units, (£1.98-£5.75 for 10ml PF bottle and £4.60 to £5.75 30x0.5ml single PF unit doses). Fixed priced to NHS for 0.25% preservative free
G.Liquid Paraffin Light, G.Liquid Paraffin	Suggest simple eye ointment, Lacrilube®, Xailin® Night or Vita-POS®
G.Sodium chloride 0.9%w/v PF multidose	Other lubricants may be more suitable but if required, suggest Xailin Wash (0.3%) or Minims® Saline (0.9%)
Glaucoma	
G.Pilocarpine 0.1%w/v, 0.25%w/v, 0.5%w/v	0.1%w/v normally used for diagnosis only. These strengths unlikely to be of benefit, query strength
G.Pilocarpine 0.4%w/v	Suggest error, check 4%w/v intended
G.Pilocarpine 1-4%w/v PF multidose	Minims® 2%w/v available if appropriate (no potentially sensitising excipients) or ask ophthalmologist to review. 2% and 4% strengths fixed price to NHS in England & Wales only.
G.Pilocarpine 6%w/v, 8%w/v	Very high strengths – check with prescriber

BNF name and form (G. = eye drops Oc. = eye ointment)	Comments and suggested alternatives
Steroids	
G.Dexamethasone 1%w/v	Suggest error, check 0.1% intended
G.Dexamethasone 0.1%w/v PD multidose~	Offer licensed single dose units of Dexamethasone Sodium Phosphate 0.1%w/v as alternative (Dexa-free®, Dropodex® or Minims®). Exception could be patient who cannot tolerate phosphate or disodium edetate in licensed products.
G.Prednisolone 0.003%w/v, 0.005%w/v, 0.01%w/v	Unlikely to be of benefit, query strength and see alternative strengths below.
G.Prednisolone 0.1%w/v preserved and PF	Preferred strength for patient who require low strength topical corticosteroid. Unlicensed special listed at fixed price in Drug tariff
G.Prednisolone 0.03%w/v, 0.05%w/v, 0.125w/v preserved and PF multidose	Suggest source 0.1%w/v from competitive NHS manufacturer. Fixed price in NHS for 0.03% and 0.05% strengths in England & Wales
G.Prednisolone 0.3%w/v	Suggest licensed 0.5w/v (Predsol®) or if not available, betamethasone 0.1%w/v (Betnesol®, Vista-methasone®), fluoromethalone (FML®), loteprednol (Lotemax®), or Minims® Prednisolone Sodium Phosphate 0.5%w/v. Unlicensed special listed at fixed price in Drug Tariff
G.Prednisolone 1%w/v PF multidose	This product would be the prednisolone sodium phosphate so not equivalent potency to prednisolone acetate 1%w/v (PredForte®), ascertain prescriber is aware. Offer Minims® Prednisolone Sodium Phosphate 0.5%w/v, Dexafree®, Dropodex® or Minims® Dexamethasone sodium Phosphate 0.1%w/v as alternative.

BNF name and form (G. = eye drops Oc. = eye ointment)	
Miscellaneous	
G.Cysteamine/Mercaptamine eye drops 0.11%w/v	For cystinosis. 0.55%w/v is more frequently used.
G.Cysteamine/Mercaptamine eye drops 0.44%w/v	May be imported as ophthalmic special order product. Available as licensed product in USA, Cystaran®, CYSTARAN is a cysteine-depleting agent indicated for the treatment of corneal cystine crystal accumulation in patients with cystinosis.
G.Cysteamine/Mercaptamine eye drops 0.55%w/v	For cystinosis.
G.Sodium chloride 0.5%w/v and 0.45%w/v (England & Wales only)	Likely to be an error check if 5%w/v or 4.5%w/v – if 4.5%, suggest 5%w/v
Oc.Sodium chloride 5%w/v	Use PF medical device – see table below at £22.50 per 5g. For corneal oedema, recurrent corneal erosion syndrome. Unlicensed eye ointment preserved with methyl parahydroxybenzoate and propyl parahydroxybenzoate also contains lanolin is the unlicensed special listed in Drug Tariff.
G.Sodium chloride PF 5%w/v (several prescribable medical devices available)	For corneal oedema, recurrent corneal erosion syndrome. Use prescribable PF multidose (£24.00-£25.25) licensed medical device, prescribable PF single dose units (£19.70 for 20x 0.45ml single dose units), licensed medical device available.
G.Sodium citrate 10.11%w/v	Not suitable for primary care suggest specialist use only
G.Sodium cromoglicate 2%w/v PF multidose	Suggest commercially available products Catacrom®, Opticrom® Allergy Single Dose 2%w/v Eye Drops. No potentially sensitising excipients.
Mydriatics	
G.Atropine 1%w/v PF multidose	Minims® Atropine Sulphate 1%w/v may be suitable alternative. No potentially sensitising excipients.
G.Homatropine hydrobromide 2%w/v PF multidose	Suggest alternative commercially available mydriatic-cycloplegic e.g. Minims® Cyclopentolate Hydrochloride, Minims® Tropicamide. No potentially sensitising excipients.

All prescriptions must have full instructions for use as per monograph.
This is guidance only and should not determine individualised care.

Sodium Chloride 5% medical devices

Product	Manufacturer	Pack size	In use shelf life	NHS cost June 2016
Preserved eye drops				
Hypersal 5%	Emnogen	10ml (traditional bottle)	1 month	£25.25
Sodium Chloride 5%	Alissa Healthcare	10ml (traditional bottle)	90 days	£25.25
Preservative-free eye drops				
NaCl 5% single dose units	Essential	20x0.45ml unit dose	single use	£19.70
PF Drops Sodium Chloride 5%	Moorfields Pharmaceuticals	10ml (OSD bottle)	60 days	£25.20
ODM5	Kestrel Ophthalmics	10ml (easy squeeze Preservative Free bottle)	90 days	£24

All prescriptions must have full instructions for use as per monograph.
This is guidance only and should not determine individualised care.

Pharmaceutical issues to consider before changing a formulation⁶

Problem	Reason	Preventive measures that can be taken
Osmotic diarrhoea	Due to high osmolarity and sorbitol content	Osmolarity can be reduced in some preparations by diluting with as much as much water as practical.
Altered bioavailability and/or pharmacokinetics	When converting from tablets to oral solution, e.g. digoxin and Phenytoin or from modified release preparations to oral solution.	The dose and/or frequency may need to be changed according to clinical response
Tube blockage/ caking	Caused by high viscosity preparations e.g. co-amoxiclav.	Minimise by diluting with 30-60mL water or use suspensions rather than syrups.
Clumping of the feed	Particularly if the formulation is acidic, i.e. pH<4	Find alternative route/ preparation if possible Dilute the drug as much as possible to minimise drug-feed contact and flush with 30-60mL of water
Binding to the Plastic Tubing	e.g. Carbamazepine, clonazepam, diazepam, Phenytoin	Dilute the drug with at least 30-60mL water and flush well.
Reduced absorption from NJ/PEJ/PEGJ	The jejunum has a higher pH than the stomach and absorption of medication can be increased or decreased	Try to find out where the medication is absorbed and if switches or dose changes are needed e.g. levodopa

Choosing a suitable formulation

Tablets/capsules⁶

Many tablets and capsule contents will disperse when mixed with water, even though they are not marketed as dispersible.

- Do not administer tablets or capsule contents which have not completely dispersed in water; sediment increases the risk of blocking the tube.
- The liquid contents of some capsules can be drawn out with a syringe, but should be administered immediately in case of light sensitivity.
- Dispersed solutions are **not** suitable for part dosing.

Injections⁶

This is generally an expensive, painful or inconvenient option and should therefore be considered only for the short term.

- Before administering an injectable formulation via a feeding tube, check osmolarity. Many injections are hypertonic and therefore unsuitable.
- Some injections may also contain additives unsuitable for oral administration. e.g. polyethylene glycol in amiodarone.
- All injections should be further diluted with 30-60mL of water before administration.

“Administering drugs via feeding tubes is an unlicensed activity. There is little published data and most recommendations are theoretical and/or based on local policy. An alternative licensed option is therefore always preferable e.g. rectal or parenteral formulations”.⁶

Unblocking a tube¹

- This will be most successful soon after the blockage occurred.
- Use warm or cold water in a 50mL syringe with a push/pull action. Do not be too forceful or the tubing may rupture and liquid may leak, this can be dangerous to the patient. This can take up to 30minutes so be patient.
- Do NOT use cola as this has a low pH and can react to worsen the problem.
- Pancreatic enzymes can be used as long as they are activated to the correct pH.
- Mechanical unblocking can be used as long as extreme care is taken.

Types of Feeding Tubes

There are several types of feeding tubes. (*N.B.* These can be further classified according to lumen size, number of lumen and length of use).

- Nasogastric (*NG*) Inserted into the stomach via the nose
- Nasojejunal (*NJ*) Inserted into the jejunum via the nose
- Percutaneous endoscopic gastrostomy (*PEG*) Inserted into the stomach via the abdominal wall
- Percutaneous endoscopic jejunostomy (*PEJ*) Inserted into the jejunum via the abdominal wall
- Percutaneous endoscopic gastrojejunostomy (*PEGJ*) Inserted into the jejunum via the abdominal wall and through the stomach

Size of lumen Narrow lumen tubes are more likely to block, particularly with thick oral syrups; dilute with 30-60mL of water before administration.

French size	Inner diameter (mm)
5	1.10
6	1.37
8	1.96
10	2.54
12	2.67

Number of lumens Ensure correct lumen is used with multilumen tubes; do not use an aspiration gastric decompression port for drug administration.

Function of tube Drugs should not be administered by tube if it is on free-drainage or suction

General Guidelines for using feeding tubes^{1,3,6}

The following should be considered when giving drugs via feeding tubes:

1. Ensure route of administration has been specified
2. Ensure the siting of the tube has been medically confirmed
3. Oral syringes (i.e. a syringe to which a needle cannot be attached) should be used to prevent accidental parenteral administration. Catheter tipped syringes should not be used.
4. Stop the infusion of a feed when administering drugs.
5. Flush the tube slowly with 30mL of water (sterile water if jejunal tube) using either a 30mL or 50mL oral syringe.
6. Leave a break if necessary (drug interactions)
7. Administer each drug separately (by gravity flow) as a sediment free liquid. Flush in between and afterwards with at least 15mL of water
8. Monitor clinical response if:
 - Changing from modified release to normal release preparations
 - A drug has a narrow therapeutic index
 - The bio-availability of the drug differs between tablet and liquid.
9. Flush with 30mL water once all drugs have been given.
10. Leave a break or re-start feed as necessary

Notes:

- Do not administer bulk-forming laxatives because they block the tubes; use an enteral feed with a high-fibre content instead
- Do not add drugs to feeds; this increases the risk of incompatibility, microbial contamination, tube blockage and under-dosing or overdosing if the feed rate is altered.

British Association of Dermatologists (BAD):

List of BAD **APPROVED** Unlicensed Dermatological Preparations: refer to full document for further information¹⁰:

Product
Emollients and barriers
Propylene glycol in Aqueous Cream 20%, 100g
Topical steroids
<i>Steroid combinations</i>
Salicylic acid 5% w/w propylene glycol 47.5% w/w in Dermovate® cream, 100g
Propylene glycol 40% w/w in Dermovate® cream, 100g
Coal Tar Solution BP 5% w/w in betamethasone valerate 0.025% ointment, 100g
Coal Tar Solution BP 3.3% w/w and propylene glycol 20% w/w in Synalar® gel, 100g
Tars
Cade Oil 12% w/w & Salicylic Acid 6% w/w in Emulsifying Ointment, 100g
Coal tar scalp pomade, 100g (Coal tar solution BP 6% w/w / salicylic acid 2% w/w in emulsifying ointment)
Coal Tar BP 2% w/w in Yellow Soft Paraffin Ointment, 100g
Coal Tar BP 5% w/w in Yellow Soft Paraffin Ointment, 100g
Coal Tar BP 10% w/w in Yellow Soft Paraffin Ointment, 100g
Coal Tar solution BP 6% w/w/ and Salicylic Acid 6% w/w in Ung. Merck, 100g
Ichthammol preparations
Ichthammol 1% w/w and zinc oxide 15% w/w in Yellow Soft Paraffin, 100g
Dithranol preparations
Dithranol in Lassar's Paste 0.5%, 100g
Dithranol in Lassar's Paste 1%, 100g
Dithranol in Lassar's Paste 2%, 100g
Dithranol in Lassar's Paste 4%, 100g
Dithranol in Lassar's Paste 8%, 100g
Dithranol in Lassar's Paste 10%, 100g
Dithranol in Lassar's Paste 15%, 100g
Dithranol Pomade 0.4% w/w (dithranol 0.4% w/w, salicylic acid 2% w/w, emulsifying wax BP 25% w/w, liquid paraffin to 100%), 100g

Keratolytics
Coconut Oil 25% w/w in Emulsifying Ointment, 100g
Salicylic Acid 2% and Sulphur 2% w/w in Aqueous Cream, 100g
Salicylic Acid 2% w/w in emulsifying ointment, 100g
Salicylic Acid 5% w/w in emulsifying ointment, 100g
Salicylic Acid 10% w/w in emulsifying ointment, 100g
Salicylic Acid 20% w/w in emulsifying ointment, 100g

Zinc and salicylic acid paste (Lassar's paste) half-strength, 100g
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Miscellaneous

Diphencyclopropenone in Acetone 0.000001- 6.0% w/v, 10ml
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Glycopyrollate 0.05% w/v in Water, 250ml
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Glycopyrollate 2% w/w in Cetomacrogol Cream, 100g

Hydroquinone 5% w/w, Hydrocortisone 1% and tretinoin 0.1% w/w in a non-aqueous gel 0.3% w/v, 100g

Reflectant (Dundee) sunscreens- coffee, coral pink, beige, 50g
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Tacrolimus 0.1% in Orabase®, 50g

Tacrolimus 0.3% in Orabase®, 50g

Tramcinolone acetonide 0.1% w/w in Orabase®, 50g
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Eosin solution 2% w/v, 100ml

Phenol 2% w/w in compound zinc paste BP, 50g
--

Trichloroacetic Acid 90% w/v, 10ml

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Patient Information Letter

Unlicensed medicines (Specials)

This leaflet has been given to you because you have been prescribed an unlicensed medicine. Your doctor or pharmacist will explain what this means and answer any questions you may have.

You have been given a medicine called:

.....

.....

.....

What is different about your medicine?

At the moment no one makes or sells a medicine like the one you need. Your medicine has been tailor-made to your requirements for you only.

This specially made medicine won't have a licence and usually won't have a leaflet to explain how the medicine works or should be taken. Please talk to your doctor or pharmacist about any concerns you may have.

Why do I need an unlicensed medicine?

This product has been carefully selected by your doctor as the best treatment available for you. All other options should have been discussed with you.

How do I know this medicine is safe?

Any medicine carries a small amount of risk. You must ask your doctor or pharmacist if you have any problems or concerns. Your pharmacist will make sure the quality of this medicine is the best available.

How do you get more medicine?

If you need more of this medicine, please allow plenty of time to request a new prescription from your GP. As the medicine is specially made just for you, may need to give the pharmacist up to one or two weeks to obtain it for you. It is very important that you do not let your supply run out before going to the GP. Take the prescription to your local pharmacy, along with this leaflet. Ask the pharmacist to obtain the medicine from the same manufacturer as last time. Make sure the box below is filled in by the pharmacist. This will help you to get future supplies easily and consistently.

To be completed by your pharmacy

Product details:

.....

Manufacturer details:

Ordering information:

Expiry date:

Date supplied:

Information for carers about unlicensed medicines

Introduction

Helping someone with their medicine is a big responsibility and many people can feel worried or afraid. This leaflet should support the information you receive from your GP and pharmacist.

If you are uncertain about anything which is prescribed, or have trouble giving the medicine because of swallowing problems or other difficulties, then you should discuss this with your doctor or pharmacist. You may not want to trouble them, but they will be very happy to help you.

Problem swallowing?

If you notice your relative/patient is having difficulty with their tablets/capsules please ask the GP or pharmacist for advice. How someone takes their medicine can make a big difference to how well it works and there are lots of options available to help you.

Sometimes the medicine is already available in a different form such as a liquid, suppository or sticky patch. If this is the case your doctor may be able to switch the medicine. If these aren't available the doctor may ask you to disperse tablets or open capsules, adding them to water, fruit juice or soft food. Your doctor or pharmacist will advise you when, and how best to do this. Not all medicines can be used in this way.

Sometimes the range of medicines available is very limited and the doctor may have to prescribe something special for the patient as an unlicensed or 'special' medicine. After reviewing the patient, the GP may even decide that the medicine isn't needed any more and can be stopped.

What is an unlicensed or special medicine?

A medicine is unlicensed if it has not been issued with a product licence from the Medicines and Healthcare products Regulatory Agency (MHRA). This may be because the medicine is very rarely needed and so no one makes it regularly. If it is not readily available it has to be tailor made to the person you are caring for. These types of medicines are generally described as 'special medicines'.

The special medicine will be made in a licensed facility and your pharmacist will make sure it is of high quality. Because the product is specially made you will need to give the pharmacist one or two weeks to obtain the supply for you and it may have a short expiry date. It is important that you do not let the supply run out or expire before going to the GP to request a prescription.

As the special product is made from "scratch" it is best that the medicine is made by the same company every time so the same recipe is used. Take the prescription and the details of the last manufacturer (or empty bottle) to your pharmacy when you ask for the next supply.

General medicine information

If there is any possibility that you or someone you are caring for may have had more than the normal dose or you are worried, contact your doctor, pharmacist or NHS 111 service straight away. Take the medicine container or pack with you, even if it is empty. This will be useful to the doctor. Have the packet with you if you telephone for advice.

Make sure that the medicine you have at home has not reached the 'expiry' or 'use by' date on the packaging.

Where I should keep medicines?

Keep the medicine in a cupboard, away from heat and direct sunlight as instructed on the label. Please note that some medicines may need to be kept in the fridge.

Make sure that children cannot see or reach the medicine.

Keep the medicine in the container it came in.

Give old, unused or unwanted medicines to your pharmacist to dispose of.

For further advice please contact:

NHS 111 service on 111

NHS England on 0300 3112233

or email: England.contactus@nhs.net

or by post to: NHS England, PO Box 16738, Redditch, B97 9PT.

British Sign Language (BSL): If you use BSL, you can talk to NHSE via a video call to a BSL interpreter. Visit NHS England's BSL service <http://interpreternow.co.uk/nhs-ccc>

Opening hours 8-6pm Monday to Friday, except Wednesday's which is 9.30am-6pm

Amendments:

- 29.07.11 - Hydrocortisone monograph added
- 30.08.11 - Cholecalciferol and Ergocalciferol updated
- 03.10.11 - Midazolam liquid (Buccolam licensed)
- 03.10.11 - Tacrolimus granules (Modigraf) now available
- 03.10.11 - Tramadol drops now licensed
- 03.10.11 - Sodium oxybate monograph added
- 03.10.11 - Diltiazem cream updated
- 03.10.11 - Bulk forming laxatives updated
- 03.10.11 - Ophthalmic products added
- 03.10.11 - Levothyroxine 100mcg/5mL liquid is discontinued
- 13.10.11 - (DT) added to the approx price for specials expected to appear in the November 2011 drug tariff. Prices are not known yet. The safest option should be considered along with the price.

- 13.10.11 - Melatonin monograph updated
- 13.10.11 - Levothyroxine monograph updated in case of liquid shortages
- 17.10.11 - Some brands of licensed furosemide liquid contain alcohol
- 19.10.11 - Desmopressin monograph amended
- 19.10.11 - Ferrous sulphate monograph amended
- 19.10.11 - Nystatin monograph amended
- 19.10.11 - Clonazepam monograph amended
- 19.10.11 - Calcium monograph amended
- 20.10.11 - Nicotinic acid monograph amended – Niaspan® discontinued
- 20.10.11 - Nitrofurantoin monograph amended – sugar free version is licensed.
- 27.10.11 - Chloral hydrate monograph amended
- 23.11.11- Alendronic acid monograph- addition of licensed oral solution
- 24.11.11- Addition of Drug Tariff list to specials paragraph on page 4
- 28.11.11- Drug Tariff prices and hyperlinks added to monographs
- 12.12.11- Unlicensed prices have been rounded up
- 12.01.12- Ramipril liquid monograph added. ACE and ARB entries amended to include ramipril
- 12.01.12- Esomeprazole monograph amended to include Teva generic.
- 12.01.12- Hypromellose standard and preservative free monograph amended.
- 12.01.12- Midazolam monograph updated- licensed product now available.
- 13.01.12- Sodium chloride nebuliser monograph updated and amended.
- 13.01.12- Licensed prices updated with December 2011 Drug Tariff and BNF 62
- 13.01.12- PALs contact details updated
- 10.02.12- Clonazepam monograph updated with licensed solution
- 10.02.12- Ramipril liquid monograph amended. Oral suspension still in Specials Tariff.
- 10.02.12- Colecalciferol and ergocalciferol low dose monographs amended. Licensed colecalciferol capsules now available.
- 10.02.12- Atorvastatin monograph amended to include chewable tablets.
- 10.02.12- Antibiotic, ethambutol, isoniazid, pyrazinamide and rifampicin monograph amended to reflect treatment of tuberculosis is hospital only.
- 13.02.12- Monographs with Rosemont products- updated pack sizes and prices
- 13.02.12- Sulpiride and Vardenafil monograph added.
- 13.02.12- Mesalazine monograph updated.

- 13.02.12- Sildenafil monograph amended to included vardenafil orodispersible tablets.
- 14.02.12- Risedronate monograph amended.
- 15.02.12- Diazoxide, Betaine and Trihexyphenidyl (Benzhexol) monograph added.
- 16.02.12- Levomepromazine (Methotrimeprazine) monograph added.
- 17.02.12- Nifedipine monograph amended.
- 03.05.12- Monographs updated with Drug Tariff May 2012. Strengths added. New monographs: dexamethasone eye drops, flecainide, sodium chloride 5% eye drops (preservative-free) and sodium chloride 5% eye ointment.
- 08.05.12- Monographs added: chlorothiazide, phytomenadione, pyridostigmine, strontium
- 31.07.12- Melatonin- Circadin price updated.
- 31.07.12- Levothyroxine 100mcg/5ml strength and capsules added. Ranitidine strengths added. Mercaptopurine 10mg capsules (unlicensed) added.
- 31.07.12- Monographs added: clomethiazole, mexiletine, aminophylline.
- 10.08.12- Diazepam 5mg/5ml strength (blacklisted) added. Metolazone UK discontinued added.
- 10.08.12 Rosemont specials prices updated.
- 13.08.12 Monographs added: pirenzepine, riboflavin, biotin, ciclosporin (eye)
- 24.08.12 Paracetamol Calpol (blacklisted) added, diltiazem cream and midazolam tariff information added, griseofulvin (Fulsovin unavailable) updated. Introduction updated to include branded unlicensed specials.
- 05.12.12 Monograph added: Dialyvit®
- 05.12.12 Monograph amended: phenytoin monitoring information added.
- 05.12.12 Monograph amended: pregabalin oral liquid information added.
- 05.12.12 Monograph amended: folic acid 400mcg/5ml licensed strength withdrawn.
- 05.12.12 Monographs updated with Part VIIIb Drug Tariff November 2012
- 05.12.12 Monograph updated with Melatonin Shared Care guideline
- 05.12.12 Monograph updated: gabapentin licensed liquid added
- 05.12.12 Monograph updated: paracetamol 500mg/5ml licensed liquid added
- 05.12.12 Monograph updated: Magnaphate added to magnesium monograph
- 05.12.12 Monograph updated: Phytomenadione low dose, Konakion MM, nut allergy checked, Neokay products added
- 05.12.12 Monograph updated: Sodium bicarbonate, SodiBic special added.
- 05.12.12 Monograph updated: colecalciferol and ergocalciferol, hyperlinks updated with paediatric shared care guidelines and reference to Pro D3
- 05.12.12 Monograph updated: acetylcysteine, EU and US licensed products added
- 05.12.12 Monograph updated: unlicensed fluoxetine 10mg tablet added
- 05.12.12 Monograph updated: nystatin, Nystan brand added
- 05.12.12 Monographs updated letters beginning A-B, with Newt Guidelines April 2012 and Handbook of Drug administration 2nd edition. Albendazole (no information via feeding tubes), alfacalcidol (injection can be given orally), allopurinol (CP brand requires crushing), aminophylline (do not crush M/R tablets), amisulpiride (can be flushed down the feeding tube), anastrozole (pregnancy information), bendroflumethiazide (APS, Alpha, CPS brands disperse), betahistine (crush Kent and Serc brands), betaine (dissolve Serc brand, Kent brand requires crushing), bezafibrate (do not crush M/R tablets, Bezalip and Ratiopharm information), bicalutamide (pregnancy information), bisoprolol (APS and Lederle brand information)
- 01.04.13 Monograph updated: Acetylcysteine- 10% strength added, Cinnarizine- Stugeron brand information added, Cimetidine- effervescent tablets removed, Co-amoxiclav- resistant to flushing down feeding tube added, Colecalciferol- Desunin tablets added, Digoxin- equivalent doses and instructions on high-fibre feeds added, Docusate sodium- strengths added, Domperidone- strengths added, Dosulepin- coating information added, Doxazosin- brands and not to use tap water added, Gabapentin- removed Drug Tariff Part VIII B entry, Griseofulvin- crushed tablets information added, Hypromellose- Tear Lac brand added, Omeprazole- dispersible tablet administration refreshed with SPC instructions,

New monograph: Ciprofloxacin oral, Ciprofloxacin drops, Clarithromycin, Hydroxychloroquine, Esomeprazole monograph split into tablets and sachets, Levetiracetum, Selegiline.

Prices updated Drug Tariff March 2013 and BNF March 2013

- 01.05.13 Edited hyperlinks from ONEL to BHR CCGs websites. NHS 111 and NHS England contact details added, PALs contacts and NHS Direct removed. Part VIII B Drug Tariff additions to monographs: atorvastatin, clopidogrel, colecalciferol 5,000 unit/5ml and 10,000 unit/5ml strength, cyclizine, dosulepin, ergocalciferol 1,000 unit/5ml strength, furosemide 5mg/5ml strength, gliclazide 40mg/5ml strength, glycopyrronium 2mg/5ml strength, hydrocortisone 10mg/5ml strength, hyoscine butylbromide, hyoscine hydrobromide 500mcg/5ml strength, indometacin, lansoprazole, magnesium glycerophosphate (magnesium 97.2mg/5ml or 4mmol/5ml) strength, methotrexate, metoprolol, naproxen, pregabalin, quetiapine 25mg/5ml strength, sildenafil, sodium chloride 1.46g/5ml (5mmol/ml) strength, sodium chloride 1.5g/5ml (5.13mmol/ml) strength, tolterodine, tranexamic acid, venlafaxine. Minimum volumes section added.
- 14.08.13 Monograph updated: clobazam: licensed product added Tapclob, mercaptopurine: licensed product added Xaluprine. Monographs updated: bisacodyl: Aralax information; captopril: tube administration; cimetidine: tube administration; co-amoxiclav: dispersible tablet removed, suspension information; dipyridamole: tube administration; gliclazide: m/r tablet information; hydroxycarbamide: tablet information; hyoscine butylbromide: sugar-coated tablet information; hyoscine hydrobromide: tablet administration; indapamide: tablet administration and m/r tablet information; isoniazid: tube administration; itraconazole: capsule information; methotrexate: suspension information; metronidazole: tube administration; moclobemide: APS brand added; mycophenolate: teratogenic information; olanzapine: preparations and prices; ondansetron; orodispersible formulation and suppository price added; oxybutynin: elixir and patch information; perindopril: administration updated; phenytoin: chewable tablets added; pyrazinamide: tube administration; rifampicin: capsule information; risperidone: orodispersible tablet information; sertraline: hot food information; sildenafil: chewable tablets added; sodium valproate: crushable tablets information; spironolactone: tablet information; sucralfate caution information revised; tamoxifen: tablet information; tocopherol: tocopherol information; tolterodine: M/R capsule information; topiramate: sprinkle capsule information; tramadol: soluble tablets and oral drops revised; trimethoprim: Trimopan administration; venlafaxine: M/R capsule information; verapamil: tube administration; warfarin: tube administration; zopiclone: tablet information. New monograph: sodium hyaluronate.
- 01.03.14 Monograph updated: Acetylcysteine eye drops: formulations added; Calcium Carbonate: formulations added; Captopril: new licensed oral solution added; Ciclosporin eye drops: formulations updated; Clomethiazole: new licensed syrup information; Colecalciferol: updated formulary guidance; Dexamethasone (oral): new volume added, new strength added; Dexamethasone (eye drops): new preservative-free preparation added; Dialyvit: no longer recommended by Barts Health; Diazepam; information amended to show sugar-free formulation; Levamisole: information added; Loperamide: orodispersible tablet information; Magnesium glycerophosphate: Magnaphate additional information; Nitrofurantoin capsule and tablet information added; oxybutynin: removed from part VIII B tariff; Potassium Permanganate: dilutions added; Prednisolone sodium Phosphate eye drops: Part VIII B tariff information added to table; Pyridostigmine: administration information updated; Sodium chloride 5% eye drops: preservative free single dose units added; Sodium chloride oral solution: SodiClor information added; Sulfasalazine licensed sugar-free formulation amended; trifluoperazine: price

- updated; Trihexyphenidyl syrup: Rosemont licensed preparations updated, Broflex brand discontinued; Trientine: BNF information updated
Part VIII B tariff generic prescribing added. Risk hierarchy of unlicensed medicines added.
- New monograph: Benztropine, Clindamycin, Clonidine liquid, Clonidine patch, Coal Tar Solution 5% in Betamethasone Valerate 0.025% ointment, Menadiol Sodium Phosphate, Midodrine, Oxandrolone, Polyvinyl alcohol, Probenecid, Renavit, Rivaroxaban, Salicylic Acid, Sodium Dihydrogen phosphate, Tamsulosin, Tizanidine.
- Part VIII B tariff new medicines added to monographs.
Unlicensed Ophthalmic preparations table. Pilocarpine unlicensed strengths added.
- MHRA guidance to prescribe Category 1 anti-epileptic medicines by brand added to Carbamazepine, Phenobarbitone, Phenytoin, Primidone.
- 01.06.14 Monograph updated: Acetylcysteine: OroNAC capsules and tablets added; Biotin: OroB7 5mg tablet added; Captopril: removed from DT part VIII B as licensed liquid now available; Ciclosporin (eye): information updated due to Drug Tariff additions; Colecalciferol: Colevit liquid preparations added; Domperidone: MHRA advice added; Fluoxetine: Olena 20mg dispersible tablets added; Meloxicam: orodispersible tablets added; Metformin: sachets discontinued and crushing tablet information added; Nifedipine: BNFC capsule information added
Part VIII B tariff new medicines added.
- New monograph: Antacid and Oxetacaine, Arginine (L-arginine), Coal Tar and Salicylic Ointment, Magnesium Oxide, Paraldehyde 50% in Olive Oil, Pizotifen, Sodium Phenylbutyrate; Sumatriptan; Zolmitriptan
Drug Tariff prices updated
- 01.09.14 Monograph updated: Amisulpiride: UKMI information added; Betaine: commissioning reference added; Ciprofloxacin eye drops: formulary reference added; Colecalciferol: aciferol solution added; Donepezil: oral solution added; Fluoxetine: Olena brand name removed, dispersible tablets in Drug Tariff; Ketoconazole: CHMP advice added; Sulpiride: UKMI information added; Valsartan: liquid information added.
- New monograph: Coal Tar solution 6% / Salicylic acid 2% in ointment; Dexamfetamine
- 01.01.15 BAD list updated. Part VIII B tariff new medicines added.
Monograph updated: Acetylcysteine: effervescent tablets added; Carbamazepine: chewable tablets discontinued; Donepezil: solution amended to sugar-free; Glycopyrronium: licensed tablets added; Hypromellose Eye Drops preservative free (P/F): Moorfields P/F and SoftDrops added, expiry date information added; Metformin: sugar-free solution added; Sodium Chloride Eye Drops 5% P/F: Moorfields P/F bottle and expiry date information added; Quetiapine: manufacturer information updated; Warfarin: tablet information added
New monograph: Demeclocycline, Glycopyrronium (topical), Rivastigmine, Testosterone patch
- April 2017 All entries updated with Newt guideline 2015 and White and Bradnam 2015.
Part VIII B updated, new medicines and strengths added and medicines removed.
All references to Moorfields manufacturer removed as it has been acquired by Rayner on 3 October 2016
Ophthalmic special order products table by the Royal College of Ophthalmologists updated
All MI queries to companies contacted and updated.
New monograph: Fosfomycin, Multivitamins; Posaconazole, Prednisolone eye drops, St Mark's oral rehydration powder, Tricitrate, Zonisamide
Acetylcysteine: 600mg capsules licensed, Fluimucil and YourNAC added;
Alendronate: effervescent tablet added; amlodipine: solution added; Biotin: NHSE information added; Calcium carbonate: 250mg effervescent tablet information added; ciclosporin (eye): 0.1% strength added; Colecalciferol (low dose):

Stexerol-D3 information and 1,000iu capsules and other Drug Tariff preparations added; Colecalciferol (high dose): Drug Tariff preparations added; Dexamethasone: soluble tablets and 20mg/5ml strength added; Diclofenac: dispersible tablets removed; Entacapone: MI contacted for information (first time); Glycopyrronium (oral): oral solution added; ibuprofen: orodispersible tablets added; Levodopa monograph removed; Magnesium glycerophosphate: YourMAG added, Magnaspartate information updated; Magnesium oxide: Magdose added; Meloxicam: orodispersible tablets removed; Mercaptopurine: Puri-Nethol tablets removed; Methotrexate: oral solution added; Midodrine removed (licensed product now available); Naproxen: oral suspension and effervescent tablets added; Nystatin: Nystan brand added; Sodium bicarbonate: licensed oral solution, tablets and capsules added; Sodium Chloride: Licensed oral solutions added; Trimetazidine: EMA information added;