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Introduction

This document is to be used for information by medical healthcare professionals to provide guidance on the nature, prescribing and supply of special medicines. The objective of the document is to highlight their individual responsibilities, the risks involved and to make an overall contribution to preserving the safety of patients. Appendix 3 and appendix 4 are intended to be made available for public access.

Scope

The material herewith aims to provide information on special medicines within the East of England Strategic Health Authority. The contents reflect reliable research evidence, guidance and best clinical practice. It is free from any commercial conflicts of interest and is intended for use by Medical Healthcare Professionals to support clinical and financial governance. The document is not intended to remove or reduce professional accountability or be an indication of quality standards for the supply of these types of medicines.

What is a pharmaceutical special?

[The Medicines Act 1968](#) is the piece of government legislation which controls the use of medicines within the UK. It states that medicines may only be marketed for use in patients if they have been given a licence by the appropriate regulatory body. To obtain a licence for a medicine, pharmaceutical companies have to demonstrate that the product is both safe and effective.

The evidence which is provided to the regulatory body includes the following.

- Effectiveness of the active ingredients
- Expected side effects and frequency
- The physical stability of the preparation
- Any interactions between the ingredients within the product
- Interactions with other medicines
- the bioavailability of the finished product (how much drug is absorbed by the patient)
- The acceptability and safety of the formulation

The above information is obtained from human trials and by demonstrating that the procurement, manufacturing and storage conditions within the manufacturing and distribution elements of the production process are appropriate and safe.

Following this rigorous assessment process every marketed medicinal product in the UK is issued a Marketing Authorisation (MA) number by the regulatory authority the Medicines and Healthcare products Regulatory Authority (MHRA). The MA, previously known as a Product Licence (PL) must be displayed on the pack and provides a guarantee of quality.

Additionally, post marketing surveillance of newly licensed products allows feedback from clinicians and patients about any adverse events from treatment thus identifying less common clinical effects

Occasionally a prescriber will identify that a patient requires a medicine which does not have a licence. For example the patient may be allergic to an additive, require a stronger or weaker form, a different presentation (e.g. a specialist dermatological preparation like menthol in aqueous cream) or a different form such as an unlicensed liquid formulation for a child or to overcome swallowing difficulties.

NB: If a medicine or form of a medicine is not listed in the British National Formulary then it is likely to be unlicensed. The [BNF](#) does list some unlicensed products or uses of medicines but does clearly identify these.



Products which are unlicensed and are prescribed for individuals are called specials. A pharmaceutical special as defined by law is a medicine made to satisfy an individual patient need. The Medicines Act allows appropriate prescribers to prescribe medicines without a licence providing they are happy to assume full liability for the prescription.

If this is the case it is allowed under that a pharmaceutical special medicine can be made to fulfil that patient's specific requirement. Therefore, a pharmaceutical special as defined by law is a medicine made to satisfy an individual patient need.

The differences between a licensed medicine and a pharmaceutical special

Practical and Clinical differences

Specials can be made by pharmacists in their dispensaries, by small specialist manufacturers or by large companies who produce specials in a similar fashion to their licensed products. With the exception of pharmacies special medicines should be manufactured by a supplier who is in possession of a specials manufacturing license. This means the facilities of the supplier have reached a minimum standard. It does not mean the product is licensed in any way and is therefore different to a product license.



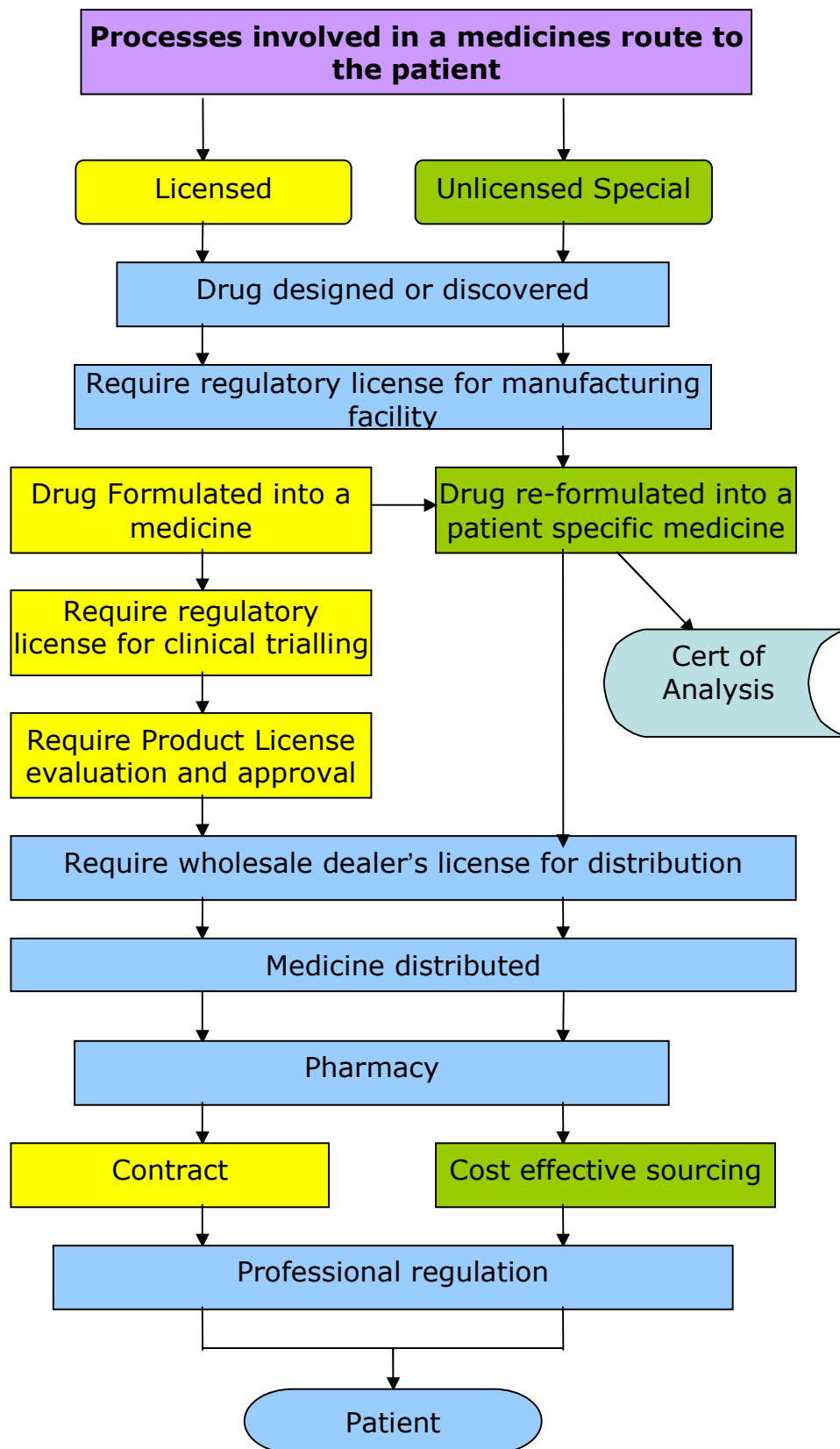
Due to a need to adhere to minimal standards only, the amount of information provided with products varies significantly as does the level of stability testing. If the level of testing had been equivalent to a licensed product then the product would be licensed and not a special.

When writing a prescription for a special it is therefore difficult to reassure yourself of the level of quality of the special provided by the supplying pharmacist as it is ultimately their decision as to where they procure the medicine from.

Legal differences

If a prescriber uses a medicine within the terms of the licence e.g. at the stated dose and for the indication specified in the Summary of Product Characteristics (SPC) (the agreed licensing conditions between the regulatory body and the pharmaceutical company) then any untoward effects are the legal responsibility of the manufacturer. If a patient experiences a side effect (even one not specified in the SPC) then the patient would have grounds to prosecute the manufacturer.

This is not the case for a pharmaceutical special. As there is no SPC the prescriber takes full responsibility in law for any adverse effect caused by the medicine unless it can be demonstrated that the medicine was faulty. Given the uncertainties explained above this should not be underestimated. The prescriber should be able to justify and feel competent in using such medicines.



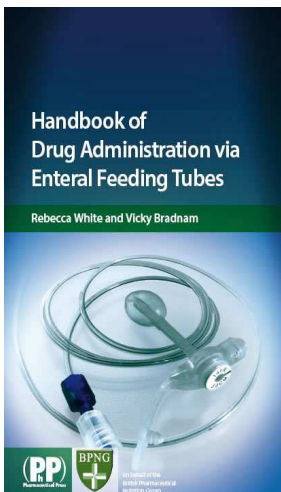
Professional responsibilities and accountabilities

The primary professional responsibility of prescribers and pharmacists is to ensure the safety of the patient. This can best be served by using a licensed medicine where possible (as explained in GN14 from the Medicines and Healthcare Regulatory Authority)

<http://www.mhra.gov.uk/Howweregulate/Medicines/Doesmyproductneedallicence/Medicinesthatdonotneedallicence/index.htm>

It is a Pharmacist's professional duty to assist prescribers in ensuring that a pharmaceutical special is only used where there is no possible licensed alternative.

It is often possible to use crushed tablets or opened capsules instead of reformulating a medicine with the problems detailed above.



Many Primary Care Trusts in the East of England refer to the reference text of The Handbook of Drug Administration via Enteral Feeding Tubes by White and Bradman, Pharmaceutical Press.

This book provides the background knowledge to inform clinical decisions and the accompanying 343 drug monographs contain guidance on the safe administration of specific drugs and formulations.

Contents include:

- Tube flushing
- Restoring and maintaining patency
- Drug therapy review, medication formulation choice
- Unlicensed medication use
- Health and safety and interactions

Additional guidance can also be found on the Calderdale and Huddersfield NHS Trust website:

http://www.formulary.cht.nhs.uk/Guidelines/MMC/062b_MedEnt_IndivDrugs.htm

As described above the prescriber of a pharmaceutical special is expected in law to detail:

- The exact pharmaceutical need and how that should be addressed (e.g. by stipulating the exact formulation details). In practice they may well not have the expertise to do this.
- The pharmacist who orders the medicine has a professional duty to ensure that the product provided to the patient meets the prescriber's requirements. If these are not implicitly stated then he/she needs to ensure the medicine is fit for the patients use. I.e. the pharmacist is responsible for the formulation, the bioavailability and the stability of the product they supply. It would also be required that this process is documented and can be proven in the form of a Certificate of Analysis which should accompany any special product supplied.
- It is also the professional responsibility of the pharmacist to ensure that cost effective medicines are used. The Royal Pharmaceutical Society of Great Britain (RPSGB) is to issue guidance on this.

Guidance for prescribers of pharmaceutical specials

In the UK, an unlicensed medicinal product may only be exempted from the need for a marketing authorisation provided they are fulfilling a special pharmaceutical need and have been supplied in accordance with an unsolicited order, formulated in accordance with the specification of the prescriber and only for use by his individual patient within his direct responsibility.

It is highly desirable that a licensed alternative is used where possible. Pharmacists can assist in this selection process.



Non medical prescribers are not allowed under current law to prescribe unlicensed medicines unless they are part of an agreed clinical management plan such as a supplementary prescriber scheme.

To prevent delays at the point of dispensing and supply, it is a good idea for prescribers to contact the community pharmacist (or hospital pharmacy if the item has been supplied from there before) to discuss the details of the patient's needs and support the achievement of the advice below. At this time any suitable licensed alternative should be discussed.

In many cases it is preferable to give a licensed product via an unlicensed route (e.g. an injection given orally), than to prepare a special formulation. For determining the best option for the patient and any additional drug information can sought from local or regional Hospital Medicines Information services.

Factors to consider when prescribing pharmaceutical specials

- They are prescribing an unlicensed medicine with all the inherent risk described.
- They ensure the patient is aware that the medicine is unlicensed. An example Patient Information Leaflet to support this is given in Appendix 3.
- It is the prescriber's responsibility to decide whether the patient has special pharmaceutical needs which a licensed product cannot meet. As previously mentioned the MHRA guidance note 14 (as detailed in the [BNF 57 March 09 Page 939](#)) requires that a pharmaceutical special medicine should ONLY be used where there is no suitable licensed alternative. E.g. a soluble tablet instead of a liquid medicine.
- The product will not have been assessed by the licensing authority for safety, quality and efficacy.
- They are directly responsible for the prescribing of these products and that they will be liable for adverse effects or harm resulting from the use of that product.
- In law the prescriber is supposed to define EXACTLY what the medicine should consist of (the formulation). In practice this seldom (if ever) happens, a pharmacist can assist in this process.
- It may be appropriate to review the need for the patient's medicine at the time of changing from a licensed to an unlicensed medicine. I.e. could it be discontinued? See information on reviewing medicines in Appendix 6.
- Check with your PCT that there is not a local formulary for unlicensed medicines. Prescribing within this would to some extent protect you legally.
- Sourcing pharmaceutical specials from a variety of manufacturers will result in variability in formulation and hence efficacy, bioavailability and excipients. The formulation may actually change from time to time from the same supplier and needs to be checked.
- A special may have a short expiry date e.g. 7 days (see section below). It is advisable to check this at the time of prescribing and thus minimise wastage of unused product by prescribing a suitable amount related to the shelf life of the product.
- Special medicines can be very expensive (several hundred pounds for one bottle) and may not represent a cost effective treatment.
- If the patient has had the special before, information about previous supplies can improve continuity of care (e.g. by questioning the patient or asking to see the product or labelling information).

Determining the need for a special pharmaceutical medicines

When deciding whether the patient has special pharmaceutical needs which a licensed medicine cannot meet, consideration should be given to the following:

- The opportunity should be taken to review current medication and assess its continuing need (See Appendix 6)
- Dermatological pharmaceutical specials with formulations which are more than two years old may have been superseded by commercially available licensed products which were not available at the time of first prescribing.



- Some solid-dose formulations may allow the 'sprinkling' of contents onto food. For possible examples see Appendix 5 or refer to the White and Bradman reference text
- Although the crushing or breaking of tablets may be outside of a product's licensed use, liquid pharmaceutical specials are also unlicensed. An option could be to ask for the tablet to be dissolved in water by writing this requirement onto the prescription directions. This instruction should be added to the label on dispensing.
- The UKMI North West Medicines Information centre has produced a medicines Q&A on 'Therapeutic options for patients unable to take solid oral dosage forms' The Q&A suggests a stepwise approach to choose a suitable alternative and is available at: <http://www.nelm.nhs.uk/en/NeLM-Area/Evidence/Medicines-Q--A/Therapeutic-options-for-patients-unable-to-take-solid-oral-dosage-forms/>
- Before prescribing an unlicensed liquid medication, consider alternatives such as
 - Oro-dispersible tablets (e.g. lansoprazole oro-dispersible, mirtazepine oro-dispersible)
 - Soluble/dispersible tablets (e.g. soluble prednisolone)
- The continuing need for an unlicensed pharmaceutical Special should be regularly reviewed. A swallowing difficulty may have been resolved so the liquid medicines are no longer appropriate and oral licensed medicines safer.
- Requests to prescribe unlicensed pharmaceutical specials by a third party, e.g. secondary care, do not diminish the responsibility of the prescriber.

Guidance for pharmacists and dispensers

Unlicensed medicines may be obtained from:

- A pharmaceutical manufacturer
- Imported by a specialist importer
- Manufactured by a commercial or hospital MHRA licensed manufacturing unit
- Prepared extemporaneously against a prescription - in many cases it is preferable to give a licensed product via an unlicensed route (e.g. an injection given orally), than to prepare a special formulation.

The safeguards that apply to products with a marketing authorisation should be extended, as far as possible, to unlicensed products. The safety, efficacy, quality and labelling of unlicensed medicines should be assured by means of clear policies on their prescribing, purchase, supply and administration. Extra care is required with unlicensed medicines because less information may be available on the drug and any formulation of the drug. Pharmacy contractors would be expected to have prepared and adhere to an unlicensed medicines policy which addresses these issues. Reference to the local PCT policy on unlicensed medicines may also be necessary.

The manufacturer must have an appropriate licensed facility and regulatory approval covering the production of different forms of special products such as creams, tablets, injections etc.

Some manufacturers ensure pharmaceutical specials are manufactured to the same strict GMP standards as fully licensed products. Ideally the product should be manufactured from raw, active ingredients and excipients, following a specially developed formulation to ensure patients receive consistency in their medication, whether it is prescribed or administered in hospitals or in Primary Care.

Pharmaceutical specials manufacturers are not allowed to advertise unlicensed products, because under the Medicines Act it is only possible to advertise licensed medicines. This means that it can be difficult to find information about pharmaceutical specials.

Consideration needs to be taken when switching manufacturers to ensure consistency of clinical outcomes and excipients. This minimises the risk of new side effects and adverse reactions due to different formulations. Ideally there should also be exact reproducibility of products from batch to batch and reasonable shelf lives if the same manufacturer is used.

Sourcing a pharmaceutical special

The following principles should be used in the decision making process for selecting a formulation and a manufacturer of a pharmaceutical special. The process is one of risk assessment where the pharmacist or dispenser should choose the option which reduces the risk of harm to the patient whilst maximising the efficacy of the treatment.

Gradient of risk

Level of risk	Classification of medicine
Low	EMEA/MHRA licensed product
Medium	EMEA/MHRA licensed imported product
Medium	Licensed imported product from a mutually recognised origin
High	Special medicine from a licensed facility
Unacceptable	Unlicensed imported product
Unacceptable	Non medicine import

The special pharmaceutical need of the patient

The patient may need a pharmaceutical special because of individual sensitivities to excipients, an inability to swallow or a specialised illness. The formulation that is decided on MUST meet these individual pharmaceutical needs.

The quality of the formulation

Pharmacists should specify to the supplier exactly what they require. The formulation should be chosen so that it delivers the following requirements so far as is possible:

- Safety. I.e. none of the excipients constitute a hazard to the patient
- Bioequivalence in terms of efficacy with the alternative licensed medicine or a known bioavailability so the dosage can be adjusted
- A known stability profile for all ingredients within the shelf life attributed to the product
- That the medicine is acceptable to the patient (e.g. texture, taste, absorption characteristics, dose volume)

The quality of the manufacturing process

The manufacturer should be chosen on the basis they:

- Possess a pharmaceutical manufacturing license for the activity they are being asked to undertake.
- Use Good Manufacturing Practice (GMP) processes
- Label and package the product in accordance with latest guidelines.
- Provide supporting governance documentation of quality (described below)
- Provide a rapid delivery service

The quality of the product

- Pharmacists should not assume any aspect of quality and take all reasonable steps to ensure that the product supplied:
 - Is of a suitable standard i.e. checking strength, formulation and excipients.
 - Comes with a:
 - Certificate of analysis (COA) - A certificate of analysis should be available for any batch manufactured special and is evidence that critical parameters have been confirmed by retrospective physical, chemical or microbiological assay of a sample of the final product.
 - Or a:
 - Certificate of conformity (COC) - A certificate of conformity is a signed statement by the manufacturer that they believe the product complies with the purchaser's specification
 - Is pharmaceutically appropriate and suitable for the patient
 - Has evidence to support the labelled shelf life of the product
 - Ideally comes with an information leaflet although this is not yet a legal requirement.
- Any adverse reactions to the product reported by patients, should be reported to the MHRA via the 'yellow card scheme' - <http://yellowcard.mhra.gov.uk>

The cost effectiveness of the medicine

Pharmacists have a professional duty to ensure cost effective utilisation of resources. In this regard they should ensure that the medicine is competitively priced and represents value for money. Ideally this can be achieved by obtaining several quotes and using the one which represents the best quality and cost effectiveness.

Pharmacists should avoid manufacturers offering excessive levels of discount (often linked to high list prices) and order specials direct from manufacturers rather than using intermediaries, where possible, so as to avoid excessive handling costs and mark ups.

Previous supplies

The pharmacist should check if the patient has had the product supplied before (e.g. by questioning the patient or asking to see the product for labelling information). If so attempts should be made to establish the previous source of the product and continue to access it from the same supplier. This will improve the likelihood of clinical equivalence and continuity of care.

Expiry dates of pharmaceutical specials

Every medication sold over-the-counter, as well as on prescription, has an expiry date - imprinted on the packaging. Generally the expiry is the date before which the medication:

- will have the stated strength
- will provide the desired benefits
- will act safely

Pharmaceutical specials manufacturers do not necessarily perform stability testing on their products measuring potency and stability over time. The expiry date is therefore reduced to a short period of time compared to a licensed product. This can result in treatment becoming very expensive with high levels of waste over time.

For some drugs (but not necessarily all drugs), using the product after the expiry date can expose the individual to harmful by-products of the medication's break down.

The pharmacist's Code of Ethics (in the UK) forbids the use of out of date medicines.

When prescribing a pharmaceutical special there is a possibility that it will have a very short expiry sometimes as low as 7 days. Prescribers need to be aware that if this is the case they may need to prescribe 4 prescriptions for a month's supply of the pharmaceutical special.

Pharmacists should consider the amount prescribed in the light of expiry date information and contact the prescriber if necessary:

- To adjust the quantity prescribed should the amount on the prescription lead to wastage
- To minimise the need for patients to request repeat prescriptions less than monthly, arrange for more than one prescription to be written to allow the supply to the patient for several times during a month.

Patient information

Pharmacists are likely to be the last point of contact with the patient prior to the unlicensed special being administered. It is the responsibility of the pharmacist to remind the patient that the medicine is unlicensed and ensure they are fully informed about the medicine including its unlicensed status.

An example of a patient information leaflet that could be used to support this is shown in Appendix 3

Appendix 1

An Action List for PCT Pharmaceutical Advisers to Manage Pharmaceutical Specials

Introduction

There has been considerable concern about the market for pharmaceutical specials in primary care where costs of both individual items and budgets have grown very quickly. This practical set of actions offers pharmacy managers working in PCTs a range of options they may wish to consider in attempting to manage this market in their locality. No one option will deliver complete control but a range may have an effect.

The options have been split into collecting and collating information, in attempting to control demand for pharmaceutical specials or to control the supply.

• Demand side measures

- The overall guidance document on the [EoE CPH Hub Website](#)
- Containment of commercial companies activities
- Incentive scheme for GPs.
- Authorisation schemes
- KPI for practices
- Practice visits.
- Local enhanced scheme with community.
- Post payment verification
- Specials focus team
- End of life guidelines.
- Medicines Information facility.

• Supply side measures

- Request community pharmacists use cost effective suppliers.
- Best value list
- Arrangements with secondary care

• Professional guidance

- Royal Pharmaceutical Society best practice guidance
- Training on unlicensed medicines for pharmacists.

- **Collecting information**

This subject describes the collecting of data with the use of the ePACT software and is covered in the next appendix of the specials guidance.

- **Demand side measures**

This action list sits within the overall education package and has been developed by a group of pharmacy specialists in the East of England. It is hosted on the [EoE Collaborative Procurement Hub website](#) and is aimed at prescribers, pharmacists and care home staff.

- Consider advising nursing homes not to allow commercial pharmaceutical companies to provide education programmes into homes.

- Add an incentive scheme for GPs. Current examples:

- Number of specials prescribed not authorised by PCT. (Several PCTs have authorisation schemes)
- Number of specials prescribed per 1000 patients
- PCT could develop a KPI for practices (e.g. Cost per 1000 patients). For example NIC/ASTROPU

- Make discussion of specials part of practice visits. Consider the following:

- Compare practice with RPSGB guidelines specifically SOPs and evidence of risk assessments undertaken.
- Ensure pharmacist understand the professional responsibilities and risks associated with these medicines.
- Check that quotes are obtained from at least three specials manufacturers
- Compare prices with hub indicative list
- Check that Certificate of Analysis or Conformity is being requested and retained.
- Ensure the PSNC statement on specials is understood and followed.

- Set up a Local Enhanced Scheme with community pharmacists to review prescriptions for specials and to use a cost effective supplier

- Post Payment Verification

If the returns from the PPD are scrutinised it is possible to identify high cost items. In these cases it is possible to ask the community pharmacist involved for proof of the costs incurred. This can lead to errors being corrected and in repayments in many cases. Ensure that any discounts received are being passed on to the PCT (to keep them is fraud).

- Implement end of life guidelines to stop unnecessary prescribing of these agents.

- A project is underway in Suffolk to evaluate the effect of a medicines information resource, made available to community pharmacists to enable evidence based advice about alternatives to unlicensed medicines (e.g. alternative forms or crushing tablets). It may be cost effective to expand this (or the FAQs developed) across the whole region.

Supply side measures

- Request community pharmacists use cost effective suppliers. Refer to Appendix 7 for indicative price ranges. Whilst this will very quickly become dated it illustrates market variability and provides some sort of benchmark.
- Set up best practice arrangements for secondary care to continue to prescribe specials, manufacture in technical services, and dispense with courier service. Trusts to charge realistic rate to PCTs to cover this.

Professional guidance

- The Royal Pharmaceutical Society of Great Britain is considering a paper on best practice guidelines. This paper details the professional responsibilities of the pharmacist in providing the patient with the medicine (either an unlicensed product or a licensed alternative) best suited to the clinical need of the patient and which presents them with the lowest clinical risk.
- Other Training - The CPPE are developing a web based training tool on this subject and the RPSGB are to run a study day.

Appendix 2

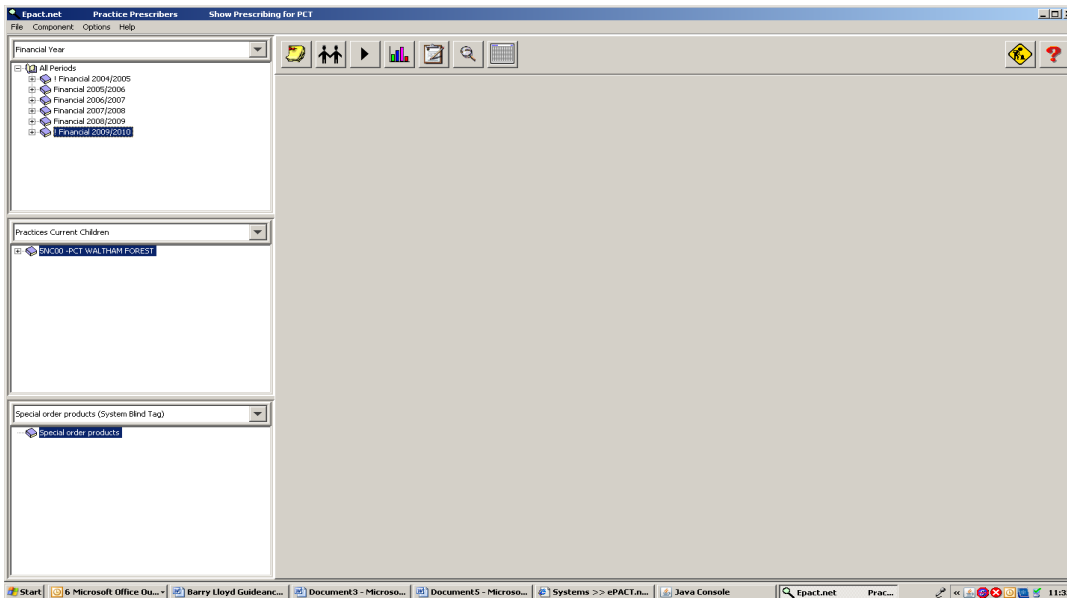
Guide for PCT commissioners on producing ePACT data for pharmaceutical specials

The special order products tag

This tag is located at the bottom of the BNF tag List. The tag is a blind list and when applied to the data selector it cannot be expanded to display its contents. However the contents can be viewed by applying a report summarising at presentation level against the tag.

Select:-

- The reporting period
- The practices
- Special order products (blind system tag)



- Select Run to process the report
- Click the snapshot button and save the report in HTML form

An Example of what this report will look like when copied and saved in excel form:-

Period Name	Prescriber Name	BNF Name	Total Items	Total Act Cost
Latest Month	Practice 1	Special order products	25	£5,195.80
Latest Month	Practice 2	Special order products	15	£10,800.20
Latest Month	Practice 3	Special order products	6	£2,305.90
Latest Month	Practice 4	Special order products	0	£0.00
Latest Month	Practice 5	Special order products	3	£85.00
<i>Acetarsol_Suppos 1g,</i>				
<i>Acetarsol_Suppos 250mg,</i>				
<i>Acetylcy_Eye Dps 0.5%,</i>				

Note: in the example above I have only shown the first 3 drugs however the report will list all the specials presentations saved under this tag.

The report at the moment just tells you the total number of items and the total actual cost spent by this PCT at various practices.

Summary of presentations prescribed

This report can now be broken down further to show a summary of presentations prescribed within your PCT. For this report you need to use the BNF presentations Report Template.

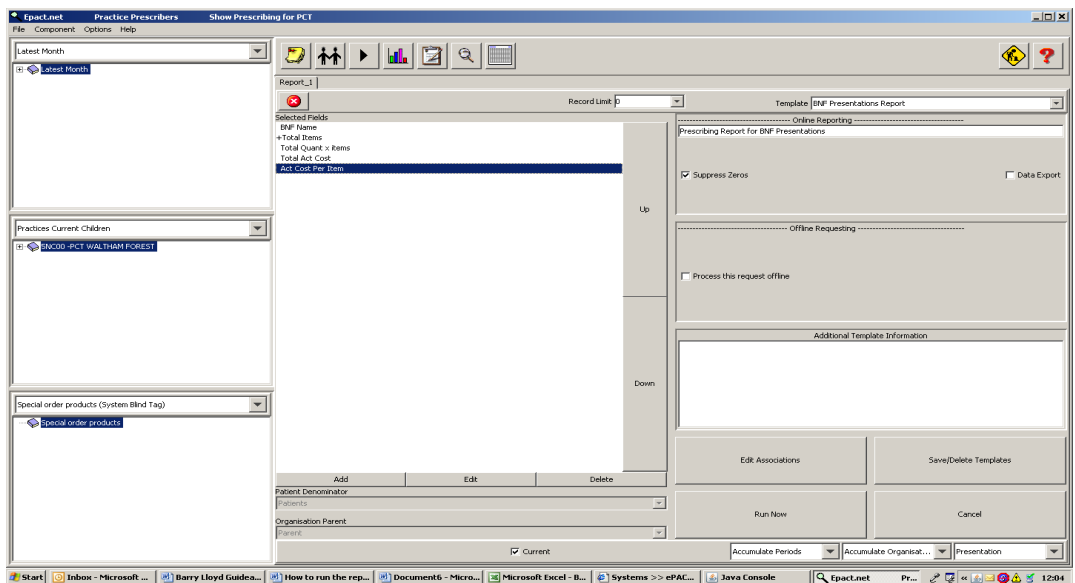
Select:-

- The period you want to look at
- Reporting
- BNF Presentations Report Template

Note: the report template will details BNF presentations, items, cost and average cost per item. The template applies a record limit of 600. The special order products tag contains over 3,000 formulations and if you do not change the record limit then some presentations will not be displayed.

So: change the record limit to zero. - So all items are reported.

- Select Run to process the report



An Example of what this report will look like when copied and saved in excel form:-

Prescribing Report for BNF Presentations				
BNF Name	Total Items	Total Quant x items	Total Act Cost	Act Cost Per Item
Diltiazem HCl_Crm 2%	18	600	£3,576.30	£198.68
Hypromellose_Eye Dps 0.3% P/F	15	430	£1,233.71	£82.25
Simvastatin_Liq Spec 20mg/5ml	12	2,600	£3,669.36	£305.78

Note:

The report will list all the special order products prescribed within the PCT in descending order of items.

Specials practice report

This report will provide a summary by practice level of the total cost, items and average cost per item of the special order products tag at prescribing level.

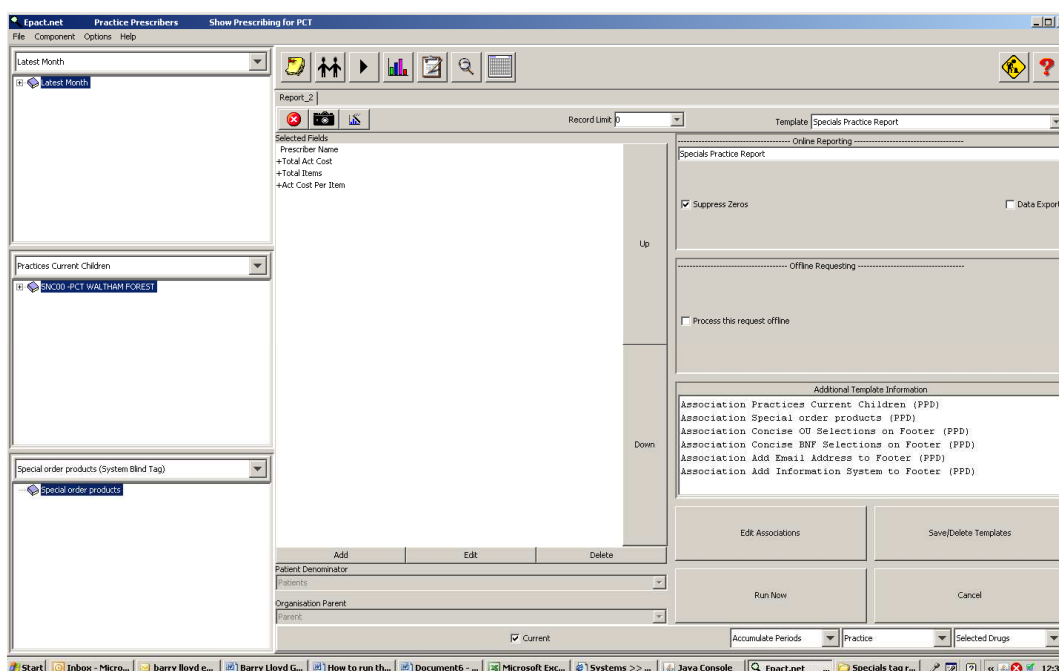
For this report you will need to use the Specials Practice Report Template.

The template will automatically apply the NHS Rx's Special Order Products Tag.

The report will list all the practices in descending order of actual cost and gives the total cost and items for your PCT at the bottom of the report.

Select:-

- The period you want to look at
- Select reporting
- Specials Practice Report Template
- Select Run to process the report.
- Click the snapshot button and save the report in HTML form.



An Example of what this report will look like when copied and saved in excel form:-

Prescriber Name	Total Act Cost	Total Items	Act Cost Per Item
Practice 1	£5,636.89	11	£512.44
Practice 2	£5,195.80	25	£207.83
Practice 3	£4,597.75	24	£191.57
Practice 4	£4,160.40	15	£277.36

The report summarises the total cost of special order products for each practice within your PCT. There are two ways of running a report to show what formulations have been prescribed by each practice:-

- 1) Prescribing Catalogue Report
- 2) Specials Detailed Report

Prescribing catalogue report

This report will provide a quick overview of the presentations prescribed by the practice and the individual quantities prescribed, along with the number of items, cost and the average cost per item for individual quantities.

Note: the FP10 MDA (dispensed by instalments) and PADM (personally administered) data fields will not be applicable for most special ordered products.

Leave the Specials Practice Report open for reference. In the bottom left hand corner of this report click the frozen check box. The report will be coloured blue to indicate that it has frozen.

Select:-

- The PCT organisation data selector and select the practice you wish to report on.
- Select reporting
- Select the prescribing catalogue report
- Select Run to process the report.
- Click the snapshot button and save the report in HTML form.

An Example of what this report will look like when copied and saved in excel form:-

Prescribing Catalogue Report							
BNF Name	Total Items	Total Items FP10 MDA	Total Items PADM	Quantity	Total Quant x items	Total Act Cost	Act Cost Per Item
Co-Careldopa_Liq Spec 25mg/100mg/5ml	1	0	0	600	600	£518.15	£518.15
Doxazosin Mesil_Liq Spec 1mg/5ml	2	0	0	280	560	£182.95	£91.48
Gabapentin_Liq Spec 400mg/5ml	1	0	0	140	140	£485.46	£485.46
Hypromellose_Eye Dps 0.3% P/F	1	0	0	10	10	£10.81	£10.81
Isosorbide Mononit_Liq Spec 20mg/5ml	1	0	0	300	300	£249.85	£249.85
Levothyrox Sod_Liq Spec 100mcg/5ml	1	0	0	75	75	£41.99	£41.99
Lorazepam_Liq Spec 500mcg/5ml	5	0	0	35	175	£399.01	£79.80

If you wish to continue report other practices in this way select another practice, click on the refresh button and then click run again. You can continue this method to report for all your practices.

Specials detailed report

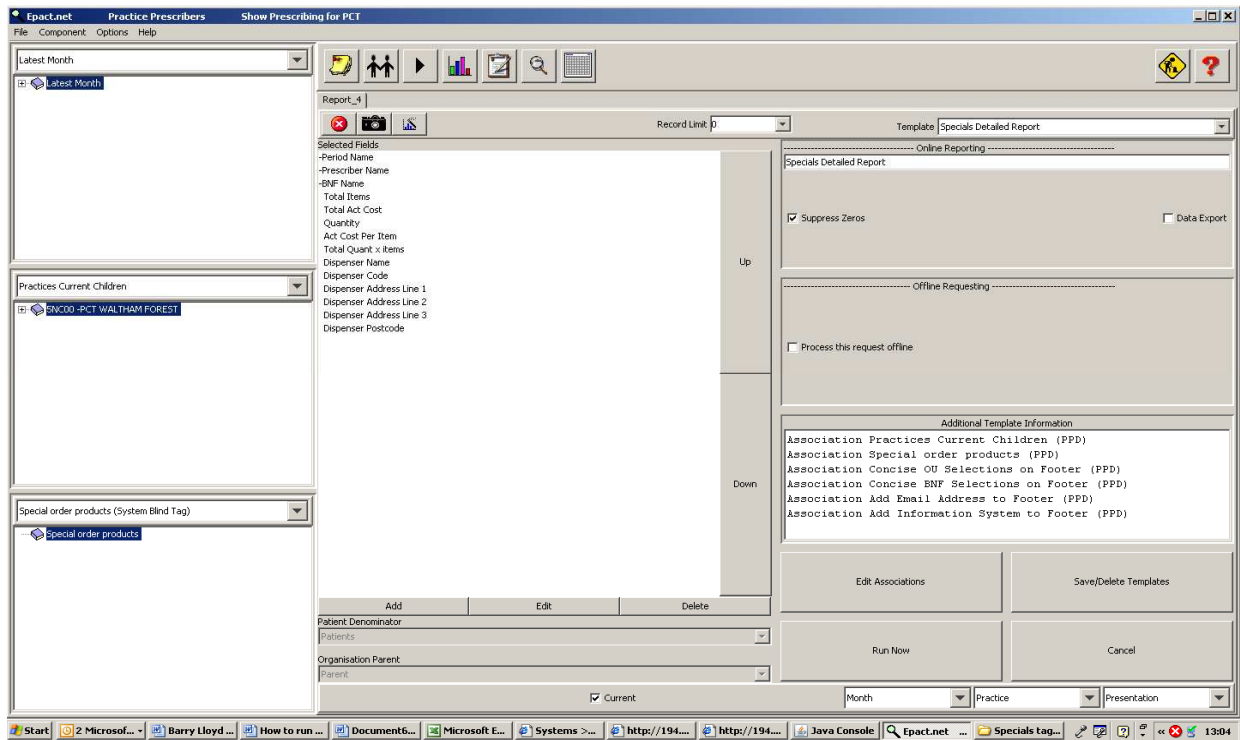
This report will provide an extremely detailed breakdown of all specials prescribed for all practices in a single report.

This report will run a large number of rows as it summarises by month, practice, presentation, by quantity and dispenser level.

Note: This report should not be applied for a period greater than a single financial quarter in order to reduce demand on the epact server.

Select:-

- Period range- remember no more than one financial quarter each time
- Select Reporting
- Select the Specials Detailed Report Template List
- Select Run to process the report.
- Click the snapshot button and save the report in HTML form



An Example of what this report will look like when copied and saved in excel form:-

Specials Detailed Report										
Period Name	Prescriber Name	BNF Name	Total Items	Total Act Cost	Quantity	Act Cost Per Item	Total Quant x items	Dispenser Name and Address	Dispenser Code	Dispenser Address and Postcode
Oct-09	Practice 1	Co-Careldopa_Liq Spec 100mg/5ml	1	£518.15	600	£518.15	600	Any Pharmacy Any Town	xxx11	Any Town
Oct-09	Practice 1	Doxazosin Mesil_Liq Spec 1mg/5ml	2	£182.95	280	£91.48	560	Any Pharmacy Any Town	xxx22	Any Town
Oct-09	Practice 2	Gabapentin_Liq Spec 400mg/5ml	1	£485.46	140	£485.46	140	Any Pharmacy Any Town	xxx33	Any Town
Oct-09	Practice 2	Hypromellose_Eye Dps 0.3% P/F	1	£10.81	10	£10.81	10	Any Pharmacy Any Town	xxx44	Any Town
Oct-09	Practice 4	Isosorbide Mononit_Liq Spec 20mg/5ml	1	£249.85	300	£249.85	300	Any Pharmacy Any Town	xxx55	Any Town

Tip: You can apply a filter at the top of the columns and filter the report by Prescriber name and BNF name. You can also sort the data by Dispenser Name.

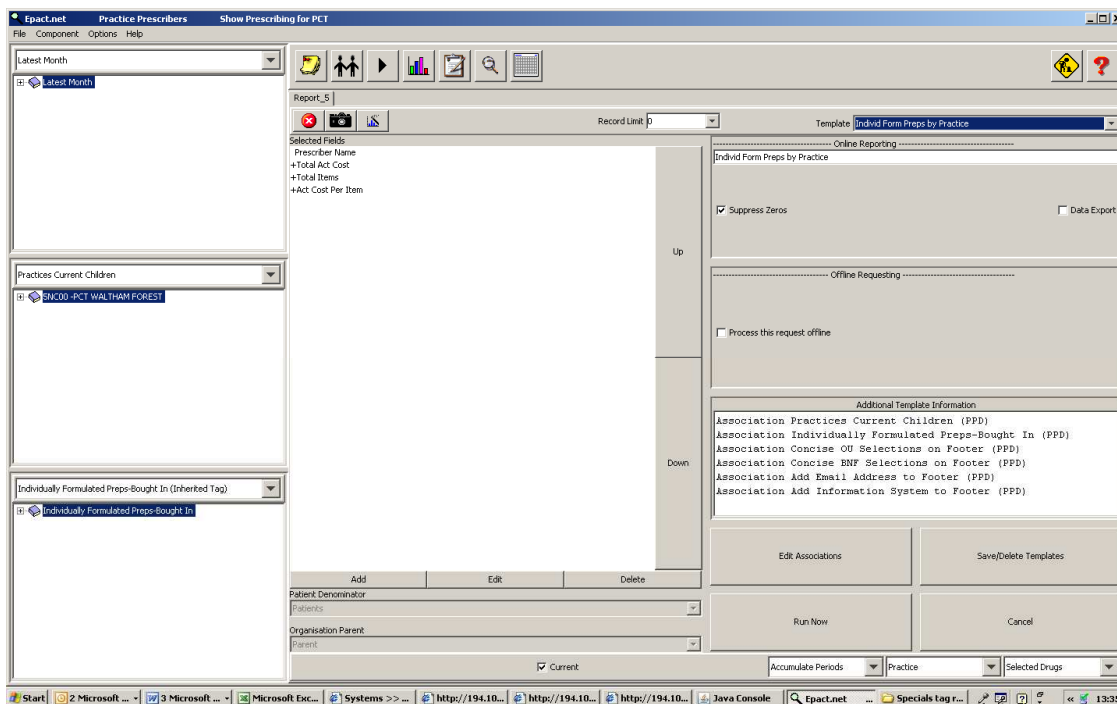
Reporting of individually formulated preparations bought in

This tag is used to report on special formulations that do not have individual BNF presentation codes or names. A practice report is available that will provide a summary of prescribing for these formulations but it is not possible to analyse prescribing at a detailed level and the BNF presentation names will not be shown.

Individually formulated preparations bought on- Practice Report

This report will provide a summary of prescribing costs for this category of specials. Select:

- The period you want to look at
- The practices you want to look at
- Select individually formulated items bought in (inherited tag)
- Select Individual Form preps by Practice Report from the templates report
- Select Run to process the report.
- Click the snapshot button and save the report in HTML form.



An Example of what this report will look like when copied and saved in excel form:-

Individual Form Preps By Practice			
Prescriber Name	Total Act Cost	Total Items	Act Cost Per Item
Practice 1	£3,245.22	55	£59.00
Practice 1	£2,086.15	21	£99.34
Practice 2	£1,591.39	4	£397.85
Practice 2	£1,508.79	12	£125.73
Practice 4	£1,329.50	15	£88.63

You will see that it does not tell you the names of the formulations and even if you kept this template and added in BNF it will come up as individually formulated items bought in.
If you ran the report at presentation level it would simply display the presentation name as Unspec_Drug Code.

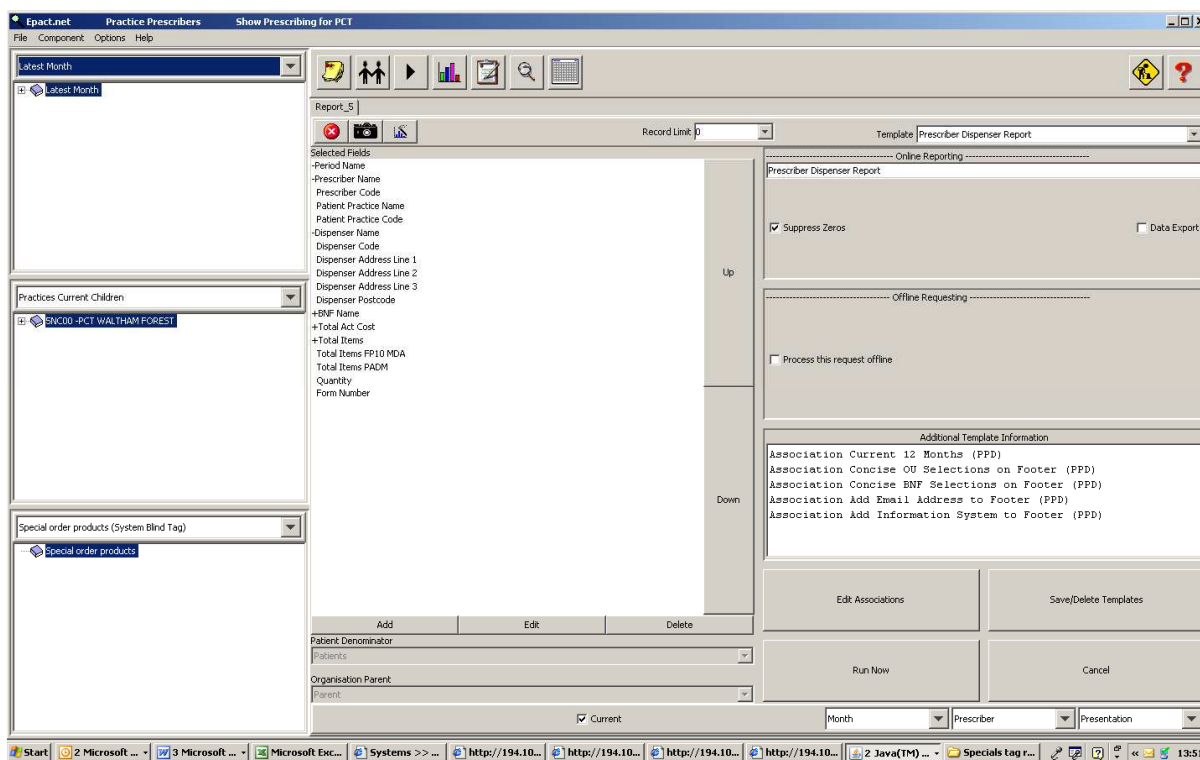
Requesting prescriptions back from NHS prescription services.

If you need to request prescriptions back then you need to run the Prescriber Dispenser Report to give the form number of the prescription you require.

The information provided in this report is needed to locate the prescription details.

Select:

- Reporting Period
- Practice
- Special Order Products Tag
- Prescriber Dispenser Report
- Select Run to process the report.
- Click the snapshot button and save the report in HTML form



An example of what this report will look like when copied and saved in excel form:-

Prescriber Dispenser Report												
Period Name	Prescriber Name	Prescriber Code	Patient Practice Name	Patient Practice Code	Dispenser Name	Dispenser Code	Dispenser Address & Postcode	BNF Name	Total Act Cost	Total Items	Form No	Form Number
Oct-09	Doctor A	Xxxxx	Any Surgery	XXXXXX	xxxxx	xxxxx	xxxxx	Melatonin Cap 2mg	£101.91	1	56	x
Oct-09	Doctor B	xxxxx	Any Surgery	XXXXXX	xxxxx	xxxxx	xxxxx	Hypromellose_Eye Dps 0.25%	£8.31	1	10	x
Oct-09	Doctor C	xxxxx	Any Surgery	XXXXXX	xxxxx	xxxxx	xxxxx	Clobazam_Liq Spec 5mg/5ml	£243.44	1	200	x
Oct-09	Doctor D	xxxxx	Any Surgery	XXXXXX	xxxxx	xxxxx	xxxxx	Riboflavin_Cap 50mg	£32.78	1	448	x

You will need to send this report with the prescription search request form.

Individually formulated preparations bought in

The same report can be run for the Individual Formulated Products Bought In where you require the prescription to identify the 'Unspecified product' being prescribed.

This report can be used to either:

- Request a copy of the prescription back from the PPD
- Identify the dispensing pharmacy and request a copy of the invoice for post payment verification.

Prescriber Dispenser Report												
Period Name	Prescriber Name	Prescriber Code	Patient Practice Name	Patient Practice Code	Dispenser Name	Dispenser Code	Dispenser Address & Postcode	BNF Name	Total Act Cost	Total Items	Form No	Form Number
Oct-09	Doctor A	Xxxxx	Any Surgery	XXXXXX	xxxxx	xxxxx	xxxxx	Unspec Drug Code_	£101.91	1	A56	x
Oct-09	Doctor B	xxxxx	Any Surgery	XXXXXX	xxxxx	xxxxx	xxxxx	Unspec Drug Code_	£8.31	1	10	x
Oct-09	Doctor C	xxxxx	Any Surgery	XXXXXX	xxxxx	xxxxx	xxxxx	Unspec Drug Code_	£243.44	1	200	x
Oct-09	Doctor D	xxxxx	Any Surgery	XXXXXX	xxxxx	xxxxx	xxxxx	Unspec Drug Code_	£32.78	1	448	x

Appendix 3**PATIENT INFORMATION LEAFLET**

This information has been given to you because you have been prescribed an unlicensed medicine. A healthcare professional will go through this with you, explain what it all means and answer any questions you may have.

You have been given a medicine called:

FREQUENTLY ASKED QUESTIONS***What is different about your medicine?***

The medicine prescribed for you is an unlicensed medicine. This means it has not been issued with a product licence from the Committee of Safety of Medicines (CSM). The reason is because the medicine you require is not commercially available and is tailor made to your requirements.

Why do I need an unlicensed medicine?

This product has been carefully chosen by your Doctor as the best treatment available for you.

How do I know this medicine is safe?

Any medicine carries a small amount of risk and you should always ensure you seek professional medical advice if you experience any problems, however the Pharmacist will ensure the quality of this medicine is of the highest standard available.

HOW TO OBTAIN A FURTHER SUPPLY

If you require a further supply of this medicine, please go to your GP to obtain a prescription. Take this to your local pharmacy (chemist), along with this leaflet. Ask the Pharmacist to record below; where they sourced the medicine. This will help to ensure you can obtain future supplies easily and consistently.

You will probably need to give the pharmacist one or two weeks to obtain the supply for you, so it is important that you do not let your supply run out before going to the GP.

The pharmacist will be able to order your medicine from:

Appendix 4**INFORMATION FOR CARERS ON UNLICENSED MEDICATIONS****Introduction**

Managing someone else's medication for them is a big responsibility and many carers can feel worried or afraid. This information will provide you with some guidance to overcome these uncertainties and will complement the information you receive from your local healthcare professionals.

If you are uncertain about any treatments that are being prescribed, or are having difficulties giving the medication, then you should discuss this with your doctor or pharmacist. You may not want to trouble them, but it is important for your peace of mind and the health of the person you're caring for.

Giving medications

The way someone takes prescribed medicines can make a big difference to their effectiveness and your Doctor, Pharmacist or Nurse maybe able to advise you on alternative methods of giving a medicine if this is a problem. In some cases tablets can be crushed and capsules opened and added to fruit juice or soft food to overcome a patient's swallowing difficulties.

Some medications will be available in different forms such as a liquid, suppository or adhesive patch. If this is the case your doctor will be able to write an appropriate prescription for this. However for certain conditions the range of medications available is limited therefore it may be necessary for the doctor to prescribe an unlicensed or special medicine.

What is an unlicensed or special medicine?

The medicine is unlicensed as it has not been issued with a product licence from the Committee of Safety of Medicines (CSM). The reason is because the medicine you require is not commercially available and is 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 manufacturing facility and the dispensing pharmacist can assure you of the product being of the highest quality available. However as the product is specially made it will have a limited shelf life, therefore you will probably need to give the pharmacist one or two weeks to obtain the supply for you, so it is important that you do not let your supply run out before going to the GP.

As the special product is tailor made from "scratch" it is best that you get your supply from the same manufacturer. Along with your repeat prescription take the bottle to your local chemist for the Pharmacist to see.

General medicine information

- If there is any possibility that you or some one you are caring for may have had more than the normal dose or you are not sure, contact your doctor or NHS Direct (0845 4647) 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.
- Write down the times that you give the medication, to help you remember and to make sure that you do not give too much.
- Make sure that the medicines you have at home have not reached the 'best before' or 'use by' date on the packaging. Give old medicines to your pharmacist to dispose of.

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.

Further advice

- East Anglia Medicines Information Service is the regional centre for medicines information <http://www.ipswichhospital.nhs.uk/microsites/pharmacy/information.asp>
- [NHS direct](#)
- [Patient Advice and Liaison Service \(PALS\)](#)

Appendix 5

Altering the form of a medicine must only be undertaken under the guidance of an authorised prescriber. You should also always refer to a Pharmacist or Medicines Information service before doing so and every effort must be made to ensure Health and Safety guidance is followed.

These are some of the examples of products that may be administered differently to the indicated route. As reproduced in December 2009 from the Calderdale and Huddersfield NHS Trust website (please refer to the website for the most up to date information:

http://www.formulary.cht.nhs.uk/Guidelines/MMC/062b_MedEnt_IndivDrugs.htm

Example of Alternatives to Liquid Pharmaceutical Specials

Drug	Formulation and administration advice
Acetazolamide	MR should not be crushed. Non-MR tablets can be dispersed in water.
Alendronate	No liquid preparation available.
	Tablets should only be crushed and administered via NG/PEG tube if it is absolutely essential that treatment continues.
	NB care must be taken to ensure taken on empty stomach i.e. after a four hour fast, and 30 minutes before any other medication or food.
	ALWAYS REFER TO A PHARMACIST FOR ADVICE.
Alfuzosin	Consider strontium if treatment of post menopausal osteoporosis.
	MR tablets should not be crushed.
	Change to non-MR Alfuzosin tablets 2.5mg THREE times daily which can be crushed and dispersed in water.
Allopurinol	Crush, mix with water and administer.
Alverine	Capsules can be opened and dispersed in water.
Aminophylline	No liquid formulation available.
	Seek advice on dosing from pharmacy (for in-patients) or Medicines Information Centre (if in the community).
	If Theophylline is substituted, it is advisable to stop feeds for one hour before and two hours after administration and to monitor plasma levels of the drug
Amiodarone	Tablet will disperse in water.
	The tablets have a bitter taste and can be mixed with fruit juice if not administered via enteral feeding tube.
Amlodipine	Tablets will disperse in water – administer immediately as light sensitive.
Anastrozole	Crush, mix with water and administer.
Antacids	Aluminium containing antacids may interact with feeds leading to the development of a plug. Contact Medicines Information for advice.
Atorvastatin	Can be crushed and mixed with water though not very soluble so should be flushed well after administration to avoid blocking enteral feeding tube.
Azathioprine	Cytotoxic drug – must be handled with care!
	The tablets may only be crushed or dissolved in water following advice from a Pharmacist – staff must wear gloves and dispose of container and clean up spillages as per cytotoxics.
Drug	Formulation and administration advice
Bendroflumethiazide	Tablets disperse readily in water.
Betahistine	Tablets disperse in water.
Bezafibrate	Non MR tablets can be crushed or will dissolve slowly in water.
Bisoprolol	Crush finely and mix with water.
	Flush enteral feeding tube well after administration to avoid blocking feeding tube.
Buspirone	Crush and disperse in water.

Drug	Formulation and administration advice
Cabergoline	Crush, mix with water and administer.
Calcium/vitamin D3	If unable to chew preparation then change to Calfovit D3 sachets at equivalent dose.
Candesartan	Crush, mix with water and administer.
Captopril	Tablets will disperse in water
Carbimazole	Crush and disperse in water.
Carvedilol	Crush/disperse and will form a suspension in water.
Celecoxib	Capsules should not be opened as will affect stability of drug.
Chlordiazepoxide	Open capsules and mix with water.
Cinnarizine	Tablets will disperse in water.
Ciprofloxacin	Suspension is too thick for administration via enteral feeding tubes. Tablets will in water.
Citalopram	Drops available NB 8mg (4 drops) may be considered to be equivalent in therapeutic effect to 10mg Citalopram tablets. Mix with water before administering
Clindamycin	Capsules can be opened and the contents dispersed in water.
Clobazam	Tablets can be dispersed in water. Unpleasant taste for oral administration.
Clonazepam	Tablets can be dispersed in at least 30ml water.
Clopidogrel	The tablets can be dispersed in water - they disperse in 1 to 5 minutes (1)
Coamilozide	Tablets can be crushed and dispersed in water.
Cobeneldopa	Dispersible tablets available. Contact pharmacy for advice on converting from MR capsules to dispersible tablets.
Cocareldopa	Crush, mix with water and administer. Consider changing to Co-beneldopa dispersible – see Co-beneldopa.
Cophenotrope	Tablets can be crushed and dispersed in water.
Cyclizine	Tablets can be crushed and dispersed in water. The crushed tablets have a bitter taste.
Cyproterone	Tablets can be dispersed in water.
Drug	Formulation and administration advice
Dantrolene caps	Open capsule and mix with orange juice (to maintain acidity)
Demeclocycline	Do not open capsules as do not disperse in water. The capsule contents may cause severe irritation to the mucosa so should not be opened for oral administration. Contact pharmacy for advice.
Digoxin	Liquid formulation available NB bioavailability is different between tablets and liquids. 62.5mcg tablet = 50mcg liquid
Diltiazem	Once and twice daily MR preparations should not be crushed. The 60mg MR three times daily formulation is not slow release can be crushed.
Dipyridamole	Syrup available. Capsules may be opened if patient has swallowing difficulties but not suitable for enteral feeding tube and should not be crushed.
Donepezil	Crush, mix with water and administer.
Doxazosin	Tablets can be dispersed in sterile (not tap) water.
Drug	Formulation and administration advice
Entacapone	Tablets will partially disperse in water. Flush well through enteral feeding tube. May stain orange.
Eprosartan	Tablets can be crushed and dispersed in water.
Escitalopram	Consider switching to oral drops.
Esomeprazole	Will dissolve in water but will leave pellets which should not be crushed. May be preferable to change to alternative PPI.
Ethambutol	Crush, mix with water and administer.
Exetimibe	Not suitable for administration through enteral feeding tube as does not mix well with water.
Drug	Formulation and administration advice
Felodipine	MR tablets should not be crushed. Consider changing to Amlodipine.
Ferrous sulphate	Change to equivalent dose of Sodium feredetate (55mg/10ml = ferrous sulphate 200mg)
Finasteride	Place the tablet in the barrel of an oral or bladder-tipped syringe, draw up water, and allow to dissolve. NB women of child bearing age should not handle crushed, broken or dissolved tablets.

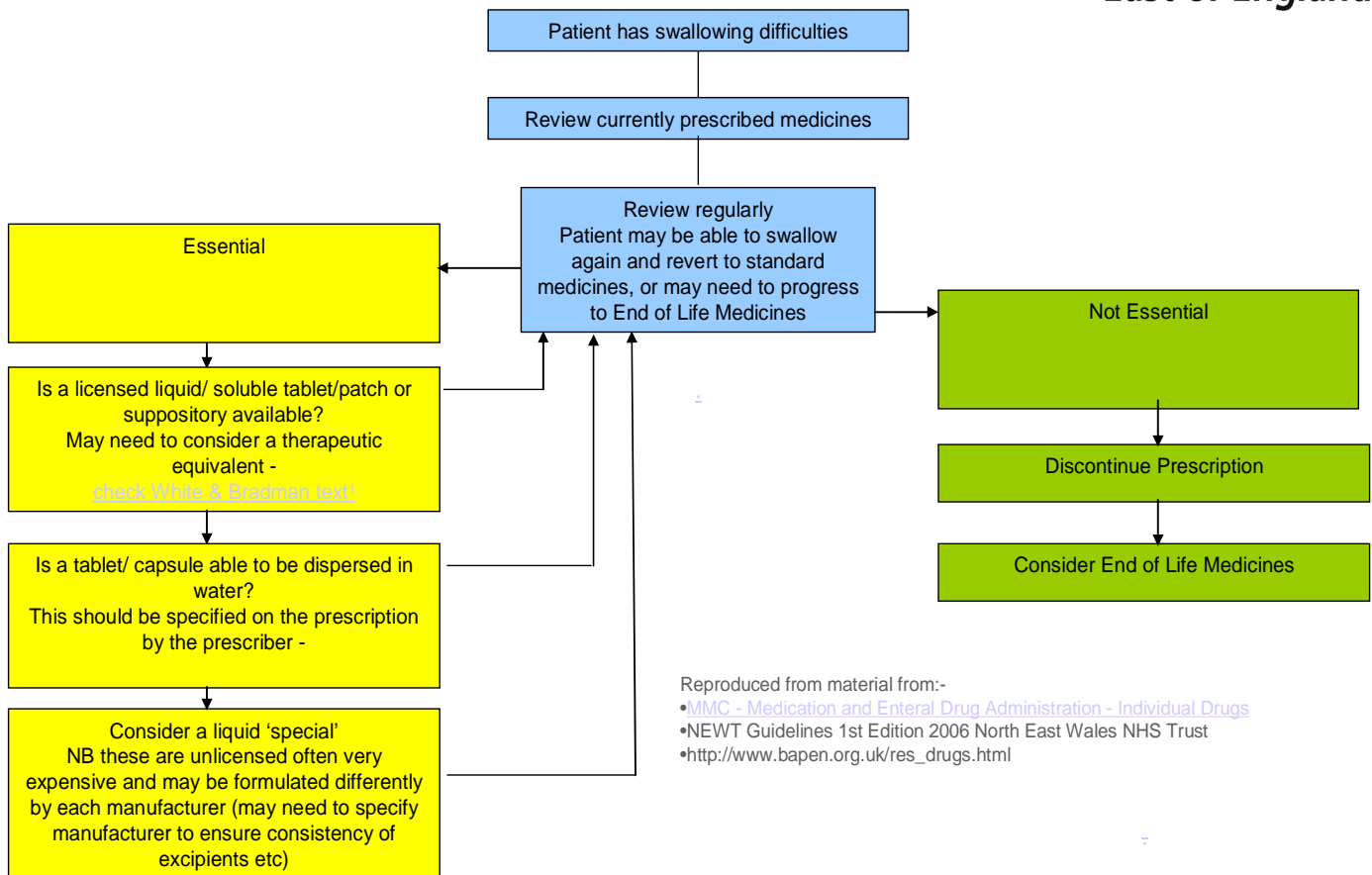
Fludrocortisone	Will dissolve in water.
Forceval	If unable to swop to alternative liquid preparation then snip off the end of the cap and withdraw contents using an oral syringe. Take care when administering via enteral feeding tube as does not mix well with water. Tastes unpleasant.
Drug	Formulation and administration advice
Gabapentin	Open the capsules and dissolve the contents in water – administer immediately.
Glibenclamide	Crush, mix with water and administer.
Gliclazide	Crush non – MR tablets well and mix with orange juice.
Glimepiride	Tablets should not be crushed as bioavailability may be affected. Contact pharmacy for advice.
Glipizide	Crush and disperse in water.
Drug	Formulation and administration advice
Hydrocortisone	Insoluble tablet – can be crushed finely and mixed with water.
Hydroxyurea	Cytotoxic drug – must be handled with care! Contact pharmacy for advice before giving. The capsules may be opened and dissolved in water – staff must wear gloves and dispose of container and clean up spillages as per cytotoxics.
Hyoscine butylbromide	Do not crush tablet. Administer injection orally if necessary.
Hyoscine h'bromide	Patch available.
Drug	Formulation and administration advice
Irbesartan	Crush and disperse in water.
Isosorbide dinitrate	Non-MR will disperse in water.
Isosorbide Mono	Non-MR tablets can be crushed and dispersed in water.
Drug	Formulation and administration advice
Labetalol	Injection can be used orally, mix with orange if necessary to disguise bitter taste.
Lansoprazole	Suspension (sachets) available but not suitable for enteral feeding tube (liquid sticks to the tube). Lansoprazole fast-tabs can be either swallowed whole, allowed to dissolve in the mouth, or can be dissolved in water if necessary.
Levomepromazine	Tablets can be dispersed in water or use injection orally
Levothyroxine	Crush, mix with water and administer.
Lisinopril	Disperse in water.
Lorazepam	Crush, mix with water and administer.
Lormetazepam	Tablets can be dispersed in water or change to alternative e.g. Temazepam
Losartan	Crush, mix with water and administer.
Drug	Formulation and administration advice
Menadiol	Crush, mix with water and administer.
Mesalazine	Granules available – these are modified release and will contain small particles so may not be suitable to go down enteral feeding tube.
Metformin	Tablets may be crushed for patients with swallowing difficulties or PEG tubes. For NG tubes use the liquid as the crushed tablets form a thick sludge which may block NGs.
Methylprednisolone	Disperse in water.
Metolazone	Crush, mix with water and administer.
Metoprolol	Crush, mix with water, will disperse slowly, or use injection orally
Mirtazepine	Oro-dispersible tablets will disperse in water.
Monteleukast	Use chewable tablets and disperse in water.
Moxonidine	Tablets can be crushed finely and dispersed in water.
Morphine Sulphate MR caps (<i>Zomorph</i>)	Capsules may be opened but do not crush contents. Alternatively change to 4 hourly Oramorph
Drug	Formulation and administration advice
Naftidrofuryl	Open capsules and disperse in water.

	Risk of oesophageal stricture if used orally in patients with swallowing difficulties – to avoid this the patient should drink 4-5 glasses of water after each dose.
Nicardipine	Non- MR capsules can be opened and dispersed in orange juice
Nicorandil	Tablets may be crushed and suspended in water, though tablets are hygroscopic and may cause tube blockages.
Nifedipine	Modified release preparations should not be crushed. As short acting Nifedipine preparation are not recommended for treatment of angina or long term control of hypertension, it is better to change to an alternative calcium channel blocker.
Nimodipine	Crush tablets and flush down enteral feeding tube immediately.
Nizatadine	Not suitable for use down an enteral feeding tube – consider changing to Ranitidine.
Drug	Formulation and administration advice
Olanzapine	Use velotabs and disperse in water.
Drug	Formulation and administration advice
Pantoprazole	Not suitable for crushing. Consider changing to alternative PPI
Phenelzine	Tablets can be crushed, dispersed in water and administered immediately (unstable in water).
Phenytoin	Convert to syrup: 90mg syrup = 100mg capsules. Single daily dose is preferable. To avoid adsorption to the tubing mix with equal volume water and flush with 30ml water before and after administering Phenytoin. To avoid interaction with feeds it is necessary to stop feed 2 hours before and 2 hours after administering.
Pramipexole	Crush, mix with water and administer.
Pravastatin	Crush, mix with water and administer
Prazosin	Crush, mix with water and administer – take care to flush tube well.
Drug	Formulation and administration advice
Quetiapine	Not soluble – can try to crush and dissolve in warm water. For oral use mix crushed tablet with yoghurt as has bitter taste.
Drug	Formulation and administration advice
Ramipril	Tablets can be crushed; capsules can be opened and dispersed in water. Capsules can be opened and contents dispersed in water.
Riluzole	Tablets can be crushed and dispersed in water for enteral tube administration – for oral use can be mixed with soft food (e.g. yoghurt) to aid swallowing.
Risedronate	No liquid preparation available. Tablets should only be crushed and administered via NG/PEG tube if it is essential that treatment continues. NB care must be taken to ensure taken on empty stomach i.e. after a four hour fast, and 30 minutes before any other medication or food.
Rosiglitazone	Crush tablets and disperse in water.
Drug	Formulation and administration advice
Sertraline	Tablets can be dispersed in water. Crush and mix with food for patients with swallowing difficulties.
Simvastatin	Crush, mix with water and administer.
Sotalol	Crush, mix with water and administer.
Drug	Formulation and administration advice
Tamsulosin	MR tablets should not be crushed. Change to alternative alpha-blocker.
Theophylline	Liquid - seek advice on dosing from Medicines Information Centre. It is advisable to stop feeds for one hour before and two hours after administration and to monitor plasma levels of the drug.
Tolbutamide	Crush, mix with water and administer.
Tolterodine	Disperse in water.
Tranexamic acid	Crush tablets and dissolve in water – can take 2-5 minutes to dissolve. Injection can be used orally.
Drug	Formulation and administration advice
Valsartan	Capsules can be opened and dispersed in water. Use immediately.
Vancomycin	Injection can be used orally.

Venlafaxine	Non-MR tablets can be crushed and mixed with water.
Drug	Formulation and administration advice
Warfarin	Crush, mix with water and administer.
Drug	Formulation and administration advice
Zopiclone	Tablets are not suitable for crushing or dissolving – consider changing to temazepam liquid

Appendix 6

Drugs at the End of Life and/or Patients with Swallowing Difficulties



Reproduced from material from:-

- MMC - Medication and Enteral Drug Administration - Individual Drugs
- NEWT Guidelines 1st Edition 2006 North East Wales NHS Trust
- http://www.bapen.org.uk/res_drugs.html

Appendix 7

The following data has been extracted by the Epact software to provide a typical month (September 2009) of prescribing volumes of special medicines and the range of prices charged for them. The data covers the whole of England not just the Eastern region. Please note, this is not a complete list of all products and all strengths of products currently being used, it is merely a summative report representing some of the more common products and highlights the disparity in the cost of these products.

Formulation	Total No. Prescriptions	No. Different Quantities Prescribed	Total Cost of all volumes prescribed	Most Common Volume prescribed	No. of Prescript's for Common Volume	Ave of Cost	Max of Cost	Min of Cost
Amisulpride_Liq Spec 25mg/5ml Total	304	26	£62,702.35	100	51	£154.13	£679.56	£27.63
Amlodipine_Liq Spec 5mg/5ml Total	752	20	£153,178.54	150	245	£168.85	£749.33	£47.36
Amitriptyline HCl_Liq Spec 10mg/5ml	210	18	£49,341.50	150	582	£65.95	£398.20	£9.19
Azathioprine_Liq Spec 50mg/5ml	210	18	£49,341.50	200	62	£252.99	£724.41	£22.43
Bisacodyl_Rectal Soln 2.74mg/ml	224	23	£26,142.72	100	52	£74.75	£292.25	£5.92
Captopril_Liq Spec 25mg/5ml	215	22	£41,052.53	95	71	£183.27	£759.63	£10.04
Chloral Hydrate_Liq Spec 500mg/5ml	630	41	£77,404.72	200	225	£112.57	£403.30	£11.49
Clobazam_Liq Spec 10mg/5ml	397	31	£99,760.67	100	71	£156.27	£439.99	£18.18
Clobazam_Liq Spec 5mg/5ml	638	38	£153,265.05	100	130	£160.77	£511.02	£14.38
Clonazepam_Liq Spec 500mcg/5ml	605	35	£116,193.41	150	203	£111.81	£440.77	£18.74
Cocaine_Mthwsh 5%	2	2	£4,868.58	500	1	£4,385.41	£4,385.41	£4,385.41
Co-Dydramol_Liq Spec 10mg/500mg/5ml	207	21	£36,298.90	150	58	£112.26	£342.86	£89.97
Colecal_Liq Spec 15,000u/5ml	114	15	£21,484.58	100	71	£150.63	£554.05	£47.69
Dantrolene Sod_Liq Spec 25mg/5ml	117	24	£30,087.80	300	17	£235.34	£571.74	£47.37
Diazepam_Oral Soln 10mg/5ml	188	24	£20,011.14	200	95	£95.35	£602.41	£7.17
Dipyridamole_Liq Spec 100mg/5ml	500	25	£151,484.47	300	99	£219.13	£534.71	£36.28
Doxazosin Mesil_Liq Spec 1mg/5ml	80	14	£21,916.15	100	18	£120.34	£209.32	£72.86
Ergocalciferol_Soln 3,000u/ml	328	28	£70,461.40	100	173	£199.46	£669.07	£49.44
Ferr Sulph_Liq Spec 60mg/5ml	183	18	£31,638.07	100	29	£128.72	£409.33	£7.89
Flecainide Acet_Liq Spec 25mg/5ml	142	14	£31,229.73	200	36	£157.25	£586.62	£33.15
Gabapentin Liq Spec 250mg/5ml	289	47	£90,046.59	470	118	£275.67	£828.00	£45.11
Gliclazide_Liq Spec 40mg/5ml	162	22	£31,697.21	300	30	£161.54	£460.01	£59.19
Glycopyrronium Brom_Liq Spec 1mg/5ml	321	24	£105,595.60	200	80	£265.59	£981.72	£55.23
Glycopyrronium Brom_Tab 1mg	460	35	£165,896.71	100	141	£312.55	£718.32	£25.79
Griseofulvin_Liq Spec 125mg/5ml	490	29	£130,662.77	100	138	£165.50	£466.22	£42.74
Hydrocort_Liq Spec 5mg/5ml	128	17	£24,124.96	200	35	£141.72	£404.72	£55.23
Hyoscine Hydrob_Liq Spec 500mcg/5ml	146	14	£32,269.72	300	26	£399.89	£1,181.04	£70.25
Hypromellose_Eye Dps 0.3% P/F	1,359	35	£120,999.81	40	487	£85.38	£428.15	£1.03

Ketamine_Liq Spec 50mg/5ml	180	23	£40,979.08	500	58	£274.39	£740.24	£106.51
Lisinopril_Liq Spec 5mg/5ml	373	22	£75,721.74	150	149	£160.16	£851.64	£13.72
Lorazepam_Liq Spec 500mcg/5ml	363	21	£65,801.62	150	143	£156.12	£851.64	£48.50
Mag Glycerophos_Liq Spec 1.25g/5ml	128	20	£39,740.73	350	54	£282.70	£1,694.97	£66.36
Mag Glycerophos_Tab 97.2mg	1,137	46	£162,395.68	100	242	£129.52	£762.22	£28.23
Mebeverine HCl_Oral Susp 50mg/5ml S/F	657	28	£86,826.71	300	430	£90.31	£147.69	£2.93
Melatonin_Cap 2mg	1,805	50	£164,121.81	60	899	£82.16	£225.38	£11.99
Melatonin_Liq Spec 5mg/5ml								
Total	1,221	46	£170,285.32	200	711	£158.38	£1,513.29	£2.38
Midazolam_Liq Spec 50mg/5ml	3,039	27	£622,397.73	5	1,902	£134.55	£385.74	£48.33
Olanzapine_Liq Spec 2.5mg/5ml	61	13	£25,588.76	150	162	£165.88	£706.00	£16.73
Omeprazole_Liq Spec 10mg/5ml	1,034	39	£215,895.27	150	188	£220.55	£812.62	£13.87
Omeprazole_Liq Spec 20mg/5ml	1,126	27	£263,215.21	150	655	£203.56	£393.32	£42.67
Paracet_Liq Spec 500mg/5ml	470	23	£62,359.76	500	268	£107.64	£493.67	£6.36
Phenobarb_Liq Spec 50mg/5ml	199	21	£39,292.20	100	28	£161.33	£326.40	£78.01
Phenytoin_Sod Liq Spec 90mg/5ml	425	32	£43,967.43	500	247	£120.83	£453.63	£3.96
Primidone_Oral Susp 50mg/5ml	162	22	£34,992.27	300	25	£253.28	£706.84	£5.85
Quetiapine_Liq Spec 12.5mg/5ml	549	43	£127,751.66	150	162	£165.88	£706.00	£16.73
Ramipril_Liq Spec 2.5mg/5ml	422	17	£76,428.49	150	131	£149.33	£986.78	£7.85
Sertraline HCl_Liq Spec 50mg/5ml	319	19	£87,315.79	150	97	£187.19	£586.51	£52.93
Sildenafil_Liq Spec 25mg/5ml	76	9	£32,701.01	200	43	£437.27	£1,063.45	£201.70
Simvastatin_Liq Spec 20mg/5ml	1,712	26	£378,483.17	150	729	£183.28	£570.00	£12.30
Simvastatin_Liq Spec 40mg/5ml	998	25	£242,975.30	140	625	£221.00	£557.73	£11.07
Sod Bicarb_Liq Spec 420mg/5ml	285	38	£81,817.45	100	36	£90.81	£215.02	£5.91
Sod Chlor_Eye Dps 5% P/F	281	14	£31,514.80	40	142	£126.42	£403.19	£9.04
Sod Chlor_Eye Oint 5%	662	15	£36,647.57	5	412	£46.52	£199.85	£2.33
Sod Chloride Neb Soln 7%	135	24	£54,836.91	30	24	£226.91	£578.23	£89.45
Spiroinol_Liq Spec 5mg/5ml	151	15	£30,007.21	125	84	£131.68	£389.06	£16.04
Tacrolimus_Liq Spec 2.5mg/5ml	77	10	£55,961.68	100	22	£382.37	£579.94	£177.85
Tacrolimus_Liq Spec 5mg/5ml	92	10	£61,948.67	100	35	£628.02	£1,269.74	£260.37
Terbinafine HCl_Liq Spec 250mg/5ml	115	15	£40,797.54	200	61	£400.87	£869.24	£145.02
Tizanidine HCl_Liq Spec 2mg/5ml	118	26	£43,798.73	300	15	£305.84	£1,189.69	£99.73
Topiramate_Liq Spec 25mg/5ml	106	21	£45,482.20	300	20	£276.23	£668.67	£5.19
Venlafaxine_Liq Spec 37.5mg/5ml	158	21	£35,070.85	300	41	£275.31	£1,213.79	£2.76
Zopiclone_Liq Spec 3.75mg/5ml	523	17	£81,823.34	150	243	£137.60	£452.06	£29.83

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- Processes involved in the route of a medicine - Adapted from the medicines act (lecture) by Dr David Wright

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