Contact numbers

Primary Care Pharmacy

Prescribing Support Team
Primary Care Pharmacy Office
Euro House, Wellgreen Place
Stirling
FK8 2DJ

Director of Pharmacy	Page 0796301824	01786 431200
Prescribing Support Team		01786 431200
Clerical/ Admin		01786 431200
Clinical and Community Services Office (Mental Health, Learning Disabilities & Vaccines) Pharmacy Department Falkirk & District Royal Infirmary Westburn Avenue Falkirk FK1 5SU		01324 624000 ext 8893
On-call service	contact Switchboard	01786 434000

Acute Services Hospitals

Opening hours	-	*8.30 am – 5.00 pm*	*Monday to Friday*
		10.00 am – 4:30 pm	*Saturday (SRI)*
		10.00 am – 2.30 pm	*Sunday (SRI)*

On-call service out-with these hours - Contact the pharmacist through the site on-call co-ordinator.

SRI 01786 434000 **FDRI** 01324 624000

	SRI	FDRI
Dispensary	4180	5728
Aseptic Dispensary	4787	
Medicines Information	4184	
Stores and Distribution	4221	5416
Clinical Pharmacists' Office	4185/4705	5423/5414/5417 Surgery/Medicine/Medicine
Principal Pharmacists' Office	4190	5412

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Introduction

The formulary is produced by the New Drugs Sub Group of the Forth Valley Area Drug and Therapeutics Committee (ADTC), and the contents reflect wide consultation with a range of practitioners in medicine and pharmacy.

Aims and objectives

The main aim of this formulary is to promote rational, safe, clinical- and cost-effective prescribing in both Primary and Secondary Care. The BNF contains several thousand medicines and is designed to be comprehensive. The Forth Valley Formulary is a list containing fewer medicines, which provide appropriate treatment for the vast majority of patients, are approved for use in hospital and general practice. The modest size of the list should enhance the quality of prescribing as familiarity with the limited range of medicines will be readily acquired. Clinical units, Community Health Partnerships (CHPs) and general medical practices may wish to use the complete Forth Valley Formulary or may restrict the number of items further to suit local circumstances.

Using the Formulary

Medicines are presented according to the BNF classification. This enables the formulary to be used in conjunction with the current BNF, which prescribers are asked to use as their primary reference source for information regarding dosages, contra-indications and adverse reactions. Generally, formulations and strengths of preparations have been omitted to allow flexibility of prescribing, except when a particular formulation is not approved. Drugs are referred to throughout by generic name, with some exceptions. Where proprietary names are given, this indicates either a compound product or a product with unique characteristics and no substitutions should be made. Some brief prescribing points have been added and have been reviewed by general practitioners and specialists working together.

The British Approved Name (BAN) has been replaced by the recommended International Non-proprietary Name (rINN) where there is no risk to public health. Where the new rINN could cause confusion or error, the BAN name has been retained with the rINN as the synonym, in common with the BNF.

A list of substances in common use for which the BAN has changed to the rINN (Appendix 1) has been included for information.

Formulary Management

The printed version of the formulary will be updated annually at the start of August to respond to changes in practice, the marketing of new products and the acceptance of new indications. Each newly marketed drug is subject to review by the New Drugs Sub Group of the ADTC.

This is quite separate from any licensing restriction which might apply, details of which can be found in the BNF or Summary of Product Characteristics. The final decision on the formulary status of a new drug is made by the ADTC. Throughout the year, ADTC decisions of formulary amendments will be routinely communicated to Drug and Therapeutics Committees and Prescribing Groups, CHPs and general practitioners via ADTC News bulletin.

There is an area wide process for requesting drugs for inclusion in the Forth Valley Formulary. This involves the requestor completing a New Drugs Proforma available within electronic versions of the Formulary at the following link. http://intranet.fv.scot.nhs.uk/web/FILES/Pharmacyfiles/requestorproforma2002.doc
Completed forms for Primary Care to be submitted to Primary Care Pharmacy Services and Acute forms submitted to Medicines Information, Stirling Royal Infirmary.

Scottish Medicines Consortium (SMC)

The remit of the Scottish Medicines Consortium (SMC) is to provide advice to the NHS Boards and their Area Drug and Therapeutics committees (ADTCs) across Scotland about the status of all newly licensed medicines, all new formulations of existing medicines and any major new indications for established products. Locally the process for considering SMC recommendations has been finalised and a summary can be found in Appendix 2. Prescribers will be updated via the ADTC News bulletin and the formulary web site.

The ADTC advises prescribers **not** to prescribe any drug that has been rejected by SMC or has not been considered by SMC **unless there is evidence to justify prescribing in the light of particular circumstances of an individual patient.**

Full details of all drugs that have been considered by the SMC can be found on their website http://www.scottishmedicines.org.uk/

NICE guidance

NHS Quality Improvement Scotland (NHS QIS) reviews NICE Multiple Technology Appraisal (MTA) and decides whether the recommendations should apply in Scotland where NHS QIS decides that an MTA should apply in Scotland, the NICE guidance supersedes SMC advice. Unlike the SMC process, MTAs examine a disease area or a class of drugs and usually contain new evidence gathered after the launch of drugs or new economic modelling.

SMC is the source of advice for Scotland on new drug therapies and the NICE Single technology Appraisal (STA) process therefore has no status in Scotland. If a NICE STA endorses a drug that was not recommended by the SMC, it is open to the manufacturers to resubmit the drug to SMC with new evidence.

This information is reviewed by the New Drugs Sub Group on a routine basis.

Paediatric Declaration

Children, and in particular neonates, differ from adults in their response to drugs. Pharmacokinetic changes in childhood are important and have a significant influence on drug absorption, distribution, metabolism and elimination and need to be considered when choosing an appropriate dosing regimen for a child. Where possible, children and neonatal medications should be prescribed within the terms of the product licence (market authorisation). However, many children may require medicines not specifically licensed for paediatric use.

Recommendations have been drawn up by the Standing Committee on Medicines, a joint committee of the RCPCH and the Neonatal and Paediatric Pharmacists Group on the use of medicines outwith their product licence. The recommendations are:

- Those who prescribe for a child should choose the medicine which offers the best prospect of benefit for that child, with due regard to cost
- The informed use of some unlicensed medicines or licensed medicines for unlicensed applications is necessary in paediatric practice
- Health professionals should have ready access to sound information on any medicine they prescribe, dispense or administer, and its availability
- In general, it is not necessary to take additional steps, beyond those taken when prescribing licensed medicines, to obtain the consent of parents, carers and child patients to prescribe or administer unlicensed medicines or licensed medicines for unlicensed applications
- NHS Forth Valley and Health Authorities should support therapeutic practices that are advocated by a respectable, responsible body of professional opinion

Forth Valley Formulary should not be used in isolation when prescribing medications for children/neonates. It is recommended that Medicines for Children (a Royal College of Paediatric & Child Health Publication) is used where possible or the Childrens BNF or BNF. For neonates e.g. in SCBU, the relevant formularies available on the ward should be used. Many of the drugs stated in the formulary will be used in paediatrics but not at the dosages stated.

In addition sugar free medicines should be used as much as possible when prescribing in children/neonates.

Web-Site

An acrobat version of the formulary can be found on the Forth Valley Primary Care Pharmacy Services intranet site at the following address:

http://intranet.fv.scot.nhs.uk/web/site/Depts/Pharmacy/Pharm_Joint_Formulary/pharm_formulary.asp

The web-based version of the formulary will be updated after each ADTC meeting and will be the most current version at any time.

Formulary Status

The formulary is intended for use across both primary and secondary care. The key for use has been agreed as follows:

✓	- Initiate and continue
⌖	- Continue where appropriate

GPs should not normally be expected to prescribe non-formulary drugs on the recommendation of hospital specialists unless sound clinical reasons are given in writing. If this does not happen, the GP can contact the specialist concerned. This requirement also extends to patients attending outpatient clinics.

Appeals

If a drug has been omitted from the formulary, and a consultant or GP maintains that such an omission could compromise patient care, the case for formulary inclusion can be reconsidered. Appeals against any formulary decisions should be made with full supporting evidence to the New Drugs Sub Group via the Medicines Information department at Stirling Royal Infirmary. Final decisions on appeals are taken by the ADTC.

Non-formulary drug supply

In exceptional clinical circumstances a non-formulary medicine may be required for a particular patient. For certain non-formulary drugs which are being continuously monitored and for recent non-formulary decision this will require completion of a non-formulary request form by the consultant or clinical pharmacist for all hospital initiated non-formulary drugs.

In CHPs, there is flexibility within the prescribing targets of the Medicines Management indicators of the Quality and Outcomes Framework of the GMS Contract to allow the prescribing of non-formulary medicines, although it would be expected that the majority of prescribing would be from formulary choices.

Non-formulary drug use is reviewed by Drug and Therapeutics Committees, and thereafter by the ADTC.

An example of the Non formulary request form has been included (Appendix 3). This is available within electronic version of the Formulary at the following link http://intranet.fv.scot.nhs.uk/home/Depts/PrimaryPharmacy/Pharm_Joint_Formulary/pharm_formulary.asp

Guidance on prescribing

Local and National Guidance

The appendices of this formulary include Primary, Secondary and area wide Forth Valley Guidelines. Where national guidance is applicable references to web addresses have been included (as links in the electronic version). Prescribers are reminded that the electronic document is a dynamic document, which will be updated after each New Drugs Sub Group meeting. Similarly local and national guidance is continually updated and may influence prescribing. Some useful web addresses are included below to provide access to the latest national guidelines:

British Hypertension Society	http://www.bhsoc.org/
British Thoracic Society	http://www.brit-thoracic.org.uk/
National Institute for Clinical Excellence	http://www.nice.org.uk/
Scottish Intercollegiate Guidelines Network	http://www.sign.ac.uk/

In hospitals

A Medicines Code of Practice is in existence within Forth Valley Acute Hospitals that gives guidance on the writing of prescriptions and the safe and secure handling of medicines.

Combination products

Please note: Whenever possible prescribe individual drug components rather than a fixed ratio combination as it allows flexibility of dosing and is usually more cost effective.

Unlicensed Medicines

The New Drugs Sub Group is aware of several preparations being used out-with their licenses, and some of these have been included within the formulary. Prescribers can still obtain unlicensed preparations in the same manner as they did prior to the launch of the Formulary.

In primary care, prescribers should note that if prescribing a preparation for an unlicensed indication, the liability for its use lies with the prescriber.

Therapeutic drug monitoring

Guidelines on therapeutic drug monitoring for antibiotics and other drugs can be found in Appendix 33.

Advice

Information and advice on medicine use is available from your local community pharmacist, Medicine Information Centre, Prescribing Support Team, practice or clinical pharmacist.

Feedback

The success of the formulary depends on feedback from the users and is most welcome. The formulary will be updated regularly.

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
1	***Gastro-intestinal System***			
1.1	**Dyspepsia and Gastro-oesophageal Reflux Disease**			
Comment	Forth Valley Dyspepsia Management Guidelines. (Appendix 4)			
1.1.1	*Aluminium and Magnesium containing antacids*			
	Aluminium Hydroxide	✓	✓	✓
	Co-magaldrox	✓	✓	✓
Comment	Maalox® is the contract product for supply in Secondary Care. Mucogel® has the same formulation and is more cost-effective in Primary care. Mucaine is available for consultant initiation only in specialist cases.			
1.1.2	*Other drugs for dyspepsia and GORD*			
	Gaviscon Advance®	✓	✓	✓
	Infant Gaviscon®	✓	✓	✓
1.2	**Antispasmodics and other drugs altering gut motility**			
	Hyoscine Butylbromide			✓
	Dicycloverine [Dicyclomine]	✓	✓	⌖
	Mebeverine (not MR preparation)	✓	✓	✓
	Peppermint Oil	✓	⌖	⌖
	Metoclopramide	✓	✓	✓
	Domperidone	✓	✓	✓
1.3	**Ulcer-healing Drugs**			
1.3.1	*H2-receptor antagonists*			
	Ranitidine	✓	✓	✓
1.3.3	*Chelates and complexes*			
	Sucralfate	⌖	⌖	✓
1.3.5	*Proton pump inhibitors*			
	Omeprazole Capsules **(1st line)**	✓	✓	✓
	Lansoprazole Capsules	✓	✓	✓
Comment	In NSAID associated ulcers both PPIs licensed but omeprazole at 20mg strength only.			
	Pantoprazole (I.V.)			✓
1.4	**Antidiarrhoeal Drugs**			
1.4.1	Methylcellulose Tablets (see section 1.6.1)	✓	✓	✓
1.4.2	*Antimotility drugs*			
	Codeine Phosphate	✓	✓	✓
	Loperamide	✓	✓	✓
Comment	Prevention of electrolyte depletion and replacement of electorlyte is 1st line treatment in acute diarrhoea. Oral rehydration therapy is listed in section 9.2. Codeine recommended only in short-term use due to CNS side effects and dependence.			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
1.5	**Treatment of Chronic Diarrhoeas and IBS**			
	Colestyramine [Cholestyramine]	⌖	⌖	✓
	Colifoam®	⌖	⌖	✓
	Mesalazine (Asacol®/Pentasa®)	⌖	⌖	✓
	Sulfasalazine [Sulphasalazine] (Salazopyrin®)	⌖	⌖	✓
Comment	Mesalazine and Sulphasalazine are MR products - prescribe by brand and do not interchange			
	Olsalazine	⌖	⌖	✓
Comment	Biologic therapies can only be prescribed by consultant gastroenterologist			
	Prednisolone (Predfoam®/Predenema®)	⌖	⌖	✓
Comment	Specialist recommendation.			
1.6	**Laxatives**			
Comment	**Please refer to the relevant Constipation Management Guidelines** Appendix 5 – Acute Services guidelines for Management and Prevention of Constipation in Adults.			
1.6.1	*Bulk-forming laxatives*			
	Ispaghula Husk	✓	✓	✓
	Methylcellulose Tablets (use in diarrhoea)	✓	✓	✓
1.6.2	*Stimulant laxatives*			
	Glycerol	✓	✓	✓
	Docusate Sodium (paediatric use only)	⌖		✓
	Senna	✓	✓	✓
	Co-danthramer (terminal care only)	✓	✓	✓
1.6.4	*Osmotic Laxatives*			
	Movicol®	✓	✓	✓
Comment	Prolonged use is not recommended.			
	Lactulose	✓	✓	✓
Comment	Lactulose may take up to 48 hours to act and is therefore unsuitable for relief of acute symptoms and for "prn" prescribing.			
	Phosphate enema	✓	✓	✓
	Sodium Citrate Enema (Micralax®)	✓	✓	✓
1.6.5	*Bowel cleansing solutions*			
	Klean-Prep®			✓
	Picolax®			✓
1.7	**Preparation for Haemorrhoids**			
	Anusol® Cream	✓	✓	✓
	Anusol® Suppositories	✓	✓	✓
	Anusol HC® Ointment	✓	⌖	⌖
	Xyloproct® Ointment	✓	⌖	⌖
	Lidocaine [lignocaine] Gel (see section 15.2)			✓
1.8	**Stoma Care**			
Comment	Specialist advice - contact Stoma Care Nurse.			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
1.9	**Drugs affecting intestinal secretions**			
1.9.1	*Drugs acting on the gall bladder*			
	Ursodeoxycholic Acid	⌖	⌖	✓
1.9.4	*Pancreatin*			
	Pancrex®	⌖	⌖	✓
	Pancrex V®	⌖	⌖	✓
	Creon®	⌖	⌖	✓
Comment	Specialist Consultant recommendation.			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
2	***Cardiovascular System***			
Comment	For Hypertension guidance, Please refer to Forth Valley Hypertension Guideline Flow charts (Appendix 6) and the British Hypertension Society www.bhsoc.org			
2.1	**Positive inotropic drugs**			
	Digoxin	✓	✓	✓
	Digibind®			✓
2.2	**Diuretics**			
2.2.1	*Thiazides and related diuretics*			
	Bendroflumethiazide [Bendrofluazide]	✓	✓	✓
	Metolazone	⌖	⌖	✓
2.2.2	*Loop Diuretics*			
	Furosemide [Frusemide] **(1st Line)**	✓	✓	✓
	Bumetanide (2nd line)	✓	✓	✓
Comment	Although the efficacy of bumetanide is the same as furosemide, it is much more expensive to prescribe in Primary Care. It should therefore be used 2nd line.			
2.2.3	*Potassium-sparing diuretics*			
	Amiloride	✓	✓	✓
	Spironolactone	✓	✓	✓
	Eplerenone	✓	✓	✓
2.2.4	*Potassium-sparing diuretics with other diuretics*			
	'Co-amilofruse'	✓	✓	✓
Comment	Please specify strength of Co-amilofruse.			
2.2.5	*Osmotic Diuretics*			
	Mannitol			✓
Comment	Diuretics should be prescribed separately except for patients with poor compliance, where combination products may be indicated. Potassium containing diuretic combinations: The majority of patients do not require potassium supplementation. For those patients who may require potassium supplements, potassium-sparing diuretics should be used. Potassium containing diuretics do not contain adequate amounts of potassium to match the patients' requirements and are therefore not advised for use.			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
2.3	**Anti-arrhythmic Drugs**			
	Verapamil (see section 2.6)	Cardiology recommendation		
	Amiodarone	Cardiology recommendation		
	Propafenone	Cardiology recommendation		
	Lidocaine [Lignocaine]			✓
	Disopyramide	Cardiology recommendation		
	Adenosine			✓
	Flecainide	Cardiology recommendation		
2.4	**Beta-Blockers**			
	Bisoprolol **(1st line)**	✓	✓	✓
	Nebivolol (2nd line)	Cardiology Recommendation		
	Propranolol (see section 4.1.2)	✓	✓	✓
	Atenolol	✓	✓	✓
	Carvedilol	Cardiology Recommendation		
	Esmolol (I.V. for arrythmia)			✓
	Labetalol	Cardiology Recommendation		
	Metoprolol	✓	⌖	✓
2.5	**Drugs affecting the renin-angiotensin system and some other antihypertensive drugs**			
2.5.1	*Vasodilator antihypertensive drugs*			
	Hydralazine	⌖	⌖	✓
2.5.2	*Centrally acting antihypertensive drugs*			
	Methyldopa	⌖	⌖	✓
2.5.4	*Alpha-adrenoceptor blocking drugs*			
	Doxazosin (not M/R)	✓	✓	✓
2.5.5.1	*Angiotensin-converting enzyme inhibitors*			
	Lisinopril	✓	✓	✓
	Ramipril	✓	✓	✓
	Perindopril	✓	✓	✓
2.5.5.2	*Angiotensin-II receptor antagonists*			
	Candesartan	✓	✓	✓
	Irbesartan	✓	✓	✓
	Losartan	✓	✓	✓
	Valsartan	✓	✓	✓
Comment	Evidence base is changing in this area and will be kept under review. Please refer to Referral Pathway for Acute Stroke/TIA (Appendix 7)			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
2.6	**Nitrates, Calcium channel blockers, and Potassium-channel activators**			
Comment	Products marked with an * are available as both standard release and sustained release preparations. Sustained release preparations may be produced by many different manufacturers and may not have the same bioavailabilities, therefore, these products should be prescribed by brand name (the locally recommended brands are specified). Standard release preparations may be prescribed generically.			
2.6.1	*Nitrates*			
	Glyceryl Trinitrate	✓	✓	✓
Comment	Patches not recommended due to tolerance problems			
	Isosorbide Mononitrate * (Isotard®)	✓	✓	✓
2.6.2	*Calcium-channel blockers*			
	Diltiazem * (Tildiem LA® & Retard®)	✓	✓	✓
	Nifedipine * (Coracten®)	Cardiology Recommendation		
Comment	Only use generic Nifedipine in Raynaud's. Not to be used sublingually			
	Verapamil *	✓	✓	✓
	Amlodipine	✓	✓	✓
	Felodipine	✓	✓	✓
2.6.3	*Potassium-channel activators*			
	Ivabradine (3rd line after beta-blockers & diltiazem)	✓	✓	✓
	Nicorandil	✓	✓	✓
2.6.4.1	*Peripheral vasodilators*			
	Naftidrofuryl	✓	✓	✓
Comment	Use as per SIGN Guideline 89			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
2.7	**Sympathomimetics**			
2.7.1	*Inotropic Sympathomimetics*			
	Dobutamine			✓
	Dopamine			✓
	Dopexamine			✓
2.7.2	*Vasoconstrictor sympathomimetics*			
	Noradrenaline [Norepinephrine]			✓
2.7.3	*Cardiopulmonary resuscitation*			
	Adrenaline[Epinephrine]	✓	✓	✓
2.8	**Anticoagulants and Protamine**			
2.8.1	*Parenteral anticoagulants*			
	Heparin			✓
	Enoxaparin			✓
	Fondaparinux sodium inj. (to be used with guidance)			✓
2.8.2	*Oral anticoagulants*			
	Warfarin	✓	✓	✓
	Phenindione			✓
2.8.3	Protamine			✓
2.9	**Antiplatelet Drugs**			
	Dipyridamole Retard (Persantin Retard®)	✓	✓	✓
	Aspirin	✓	✓	✓
	Clopidogrel	✓	✓	✓
	Eptafibatide			✓
	Tirofiban			✓
Comment	Refer to Forth Valley Clopidogrel Guidelines (Appendix 8) & Referral Pathway for Acute Stroke/TIA (Appendix 7)			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
2.10	**Fibrinolytics**			
	Streptokinase (For Life Threatening P.E.)			✓
	Alteplase (For Ischaemic Stroke)			✓
	Tenecteplase (For ST Elevation M.I.)			✓
2.11	**Antifibrinolytics**			
	Tranexamic Acid	✓	✓	✓
	Ethamsylate			✓
2.12	**Lipid-regulating Drugs**			
Comment	Ensure that statins and ezetimibe are prescribed in accordance with Forth Valley Lipid Lowering Guidelines (Appendix 9)			
	Bezafibrate	⌖	⌖	✓
	Fenofibrate (Lipantil®)	⌖	⌖	✓
	Atorvastatin	✓	✓	✓
	Rosuvastatin	✓	✓	✓
	Simvastatin	✓	✓	✓
	Ezetimibe	✓	✓	✓
	Omacor®	⌖	⌖	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
3	***Respiratory System***			
Comment	Local guidance is available from the Forth Valley Asthma Online Resource with links to national guidance at http://nww.fv.scot.nhs.uk/clineff/CE_Guidance.asp?topic=Asthma			
3.1	**Bronchodilators**			
3.1.1	*Adrenoceptor stimulants*			
	Salbutamol	✓	✓	✓
	Terbutaline	✓	✓	✓
	Salmeterol	✓	✓	✓
3.1.2	*Antimuscarinic bronchodilators*			
	Ipratropium Bromide	✓	✓	✓
	Tiotropium	✓	✓	✓
3.1.3	*Theophylline*			
	Aminophylline Injection			✓
	Uniphyllin®	✓	✓	✓
Comment	Different brands of theophylline modified release preparations have different bioavailabilities. As the products are NOT INTERCHANGEABLE, prescribers should specify the brand on which a patient is stabilised.			
3.1.4	*Combination bronchodilator preparations*			
	Combivent®	✓	✓	✓
3.1.5	*Peak flow meters, inhaler devices and nebulisers*			
	Peak Flow Meter (Mini-Wright® Adult & Paediatric)	✓	✓	✓
	Inhaler spacer device	✓	✓	✓
Comment	Spacer devices are recommended in preference to dry powder or breath actuated inhalers particularly in young children.			
	Emergency Drugs			
	Adrenaline [Epinephrine]	✓	✓	✓
	Specialist Products			
	Caffeine Citrate			✓
Comment	Caffeine Citrate is the oral xanthine of choice in neonates.			
3.2	**Corticosteroids**			
	Beclometasone Dipropionate **(1st line Clenil Modulite®)**	✓	✓	✓
	Budesonide	✓	✓	✓
	Fluticasone	✓	✓	✓
	Hydrocortisone IV (See section 6.3.2)			
	Prednisolone Oral (See section 6.3.2)			
	Other Compound Preparations			
	Seretide® (Seretide 500 accuhaler-licensed for COPD and cheaper than MDI which is unlicensed for COPD)	✓	✓	✓
	Symbicort®	✓	✓	✓
Comment	Refer to Guidance on Issuing Steroid Cards (Appendix 10).			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
3.3	**Cromoglicate, related therapy and leukotriene antagonists**			
3.3.2	*Leukotriene receptor antagonists*			
	Montelukast	✓	⌖	✓
3.4	**Allergic Disorders**			
3.4.1	*Antihistamines*			
	Cetirizine	✓	✓	✓
	Loratadine	✓	✓	✓
	Alimemazine [Trimeprazine] (Paediatrics)	✓		✓
	Chlorphenamine [Chlorpheniramine]	✓	✓	✓
	Promethazine (Paediatrics)	✓		✓
Comment	For drugs acting on the nose see section 12.2.			
3.4.2	*Allergen Immunotherapy*			
	Omalizumab	Respiratory Consultant Only		
3.4.3	*Allergic emergencies*			
	Epipen® (Prescribe by brand)	✓	✓	✓
3.5	**Respiratory Stimulants and Pulmonary Surfactants**			
3.5.2	*Pulmonary Surfactants*			
	Poractant alfa	✓		
3.6	**Oxygen**			
	Cylinders	✓	✓	✓
	Piped			✓
3.7	**Mucolytics**			
	Carbocisteine	✓	✓	✓
	Mecysteine Hydrochloride	✓	✓	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
4	***Central Nervous System***			
4.1	**Hypnotics & Anxiolytics**			
Comment	All sedative hypnotics and anxiolytic products are licensed for short term use only and should be reserved for short courses to alleviate acute conditions after causal factors have been established.			
4.1.1	*Hypnotics*			
	Temazepam	✓	✓	✓
	Zopiclone	✓	✓	✓
4.1.2	*Anxiolytics*			
	Diazepam	✓	✓	✓
	Chlordiazepoxide (use in alcohol addiction)	✓	✓	✓
Comment	Refer to Alcohol Dependance - In-Patient Management of Alcohol Withdrawal (Appendix 20), Alcohol Dependance - Maintenance of Abstinence (Appendix 21) & Alcohol Dependance – Community Management of Alcohol Withdrawl (Appendix 22)			
	Lorazepam		✓	✓
	Propranolol (see section 2.4)	✓	✓	✓
4.2	**Drugs in psychoses and related disorders**			
4.2.1	*Antipsychotic Drugs*			
Comment:	Refer to Prescribing Guidelines • Emergency Sedation Prescribing Guideline (Appendix 11) • Algorithm 2 Emergency Sedation – Adult Mental Health (Appendix 12) • Algorithm 3 Emergency Sedation – Elderly Mental Health (Appendix 13) • Algorithm 4 Emergency Sedation Protocol (Learning Disability Service) –**This is currently under review** • Regular Use of More Than One Antipsychotic (Appendix 14) • Monitoring Guidance for Patients Receiving Atypical Antipsychotic Therapy (Appendix 15) • The Use of High Dose Antipsychotics (Appendix 16) • Algorithm 1 Drug Treatment of Schizophrenia (Appendix 17) • Guidance on Atypical Antipsychotics Use in Elderly Dementia (Appendix 24)			
	Chlorpromazine	✓	✓	✓
	Haloperidol (Baseline ECG Required)	⌖	✓	✓
	Levomepromazine [Methotrimeprazine] **(Palliative Care)**	✓	✓	⌖
	Trifluoperazine	⌖	✓	⌖
	Zuclopenthixol Dihydrochloride (Clopixol® tabs)	⌖	✓	⌖
	Zuclopenthixol Acetate (Clopixol Acuphase®)		✓	⌖
	Amisulpride	⌖	✓	⌖
	Aripiprazole	⌖	✓	⌖
	Clozapine	⌖	✓	⌖
Comment	Clozapine used for treatment resistant schizophrenia only.			
	Olanzapine (See protocol for IM use)	⌖	✓	⌖
	Quetiapine	⌖	✓	⌖
	Risperidone	⌖	✓	⌖

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
4.2.2	*Antipsychotic Depot Injections*			
	Fluphenazine Decanoate Inj	⌖	✓	⌖
	Pipotiazine Palmitate Inj	⌖	✓	⌖
	Haloperidol Decanoate Inj	⌖	✓	⌖
	Risperidone	⌖	✓	⌖
	Zuclopenthixol Decanoate Inj	⌖	✓	⌖
	Flupentixol Decanoate Inj	⌖	✓	⌖
4.2.3	*Antimanic Drugs*			
	Carbamazepine	⌖	✓	⌖
	Valproate Semisodium (Depakote®)	⌖	✓	⌖
Comment	Valproate Semisodium (Depakote®) is licensed for the treatment of manic episodes associated with bipolar disorder but is not currently licensed for the maintenance treatment of bipolar affective disorder. It has been agreed by the Forth Valley New Drugs Sub Group that if prophylaxis is needed, following stabilisation of the episode of acute mania with Depakote® and prior to discharge, sodium valproate should be substituted.			
	Lithium	⌖	✓	⌖
Comment	Lithium products Priadel® and Camcolit® have different bioavailabilities, therefore brand must be specified when prescribing. Liquid preparations Priadel® and Li-Liquid® also have different bioavailabilities.			
4.3	**Antidepressants**			
Comment	Refer to Local Antidepressant Guideline – Appendix 18 & 19			
4.3.1	*Tricyclic and related Antidepressant Drugs*			
	Amitriptyline	✓	✓	✓
	Clomipramine	⌖	✓	⌖
	Lofepramine	✓	✓	✓
	Trazodone	✓	✓	✓
4.3.2	*Monoamine-oxidase Inhibitors*			
	Phenelzine (dietary / interaction advice required)	⌖	✓	⌖
	Moclobemide	⌖	✓	⌖
4.3.3	*Selective Serotonin Re-uptake Inhibitors*			
	Citalopram	✓	✓	✓
	Fluoxetine	✓	✓	✓
4.3.4	*Other Antidepressant Drugs*			
	Mirtazapine	✓	✓	✓
	Venlafaxine	⌖	✓	⌖
4.4	**Central nervous system stimulants**			
	Atomoxetine	⌖	✓	⌖
	Dexamfetamine (Not first line)	⌖	✓	⌖
	Methylphenidate	⌖	✓	⌖
Comment	Refer to SMC recommendation on sustained release methylphenidate and Atomoxetine preparations. http://www.scottishmedicines.org.uk/			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
4.5	**Drugs used in the treatment of obesity**			
	Orlistat	✓	⌖	✓
	Sibutramine	✓	⌖	✓
Comment	To be prescribed in conjunction with NICE guidelines.			
4.6	**Drugs used in Nausea & Vertigo**			
	Betahistine	✓	✓	✓
	Cinnarizine	✓	✓	✓
	Cyclizine Inj (oral use in paediatrics and adolescents in acute trust)	✓	✓	✓
	Domperidone	✓	✓	✓
	Hyoscine Hydrobromide	✓	✓	✓
	Haloperidol **(palliative care) (see section 4.2)**	⌖	⌖	✓
	Levomepromazine [Methotrimeprazine] **(palliative care) (see section 4.2)**	⌖	⌖	✓
	Metoclopramide	✓	✓	✓
	Prochlorperazine	✓	✓	✓
	Ondansetron (Restricted – oncology & anaesthetics)			✓
4.7	**Analgesics**			
4.7.1	*Non-opioid Analgesics*			
	Paracetamol	✓	✓	✓
	Co-codamol 8/500	✓		
	Co-codamol 30/500	✓	✓	✓
Comment	N.B. increased opioid side-effects and risk of dependence with co-codamol. Also, effervescent preparations of compound analgesics may contain high levels of sodium. For patients requiring low sodium intake please refer to individual Summary of Product Characteristics. Refer also to Primary Care Guidance on Use of Oral Analgesics (Appendix 25) and Acute Guidance (Appendix 26)			
4.7.2	*Opioid Analgesics*			
Comment	The evidence that **tramadol** offers advantage over compound analgesics in patients with moderate acute pain is **weak**; it should **not** be considered as a **first** choice analgesic. It should be reserved for patients in whom constipation poses a major threat (eg. after bowel surgery) or who experience unacceptable sedation or respiratory depression with other opioids.			
	Dihydrocodeine	✓	✓	✓
	Diamorphine	✓	✓	✓
	Morphine	✓	✓	✓
	Cyclimorph®	✓	✓	✓
	Fentanyl (Injection for Acute Services)	✓	✓	✓
	Oxycodone (Palliative care and specialist pain management only)	⌖	⌖	✓
	Pethidine	✓	✓	✓
Comment	Refer to Primary Care Guidance on Use of Oral Analgesics (Appendix 25) and also to Forth Valley Palliative Care Guidelines and Specialist Formulary			

Chapter/Section/Drug		Primary Care		Acute
		CHPs	Specialist	Services
4.7.3	*Neuropathic Pain*			
	Amitriptyline (see section 4.8)	✓	✓	✓
	Carbamazepine (see section 4.8)	✓	✓	✓
	Gabapentin (see section 4.8)	✓	✓	✓
	Epilim® (see section 4.8)	✓	✓	✓
4.7.4	*Antimigraine Drugs*			
	Rizatriptan	✓	⌖	⌖
	Sumatriptan	✓	✓	✓
	Pizotifen	✓	✓	✓
	Propranolol (for migraine - see section 2.4)	✓	✓	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
4.8	**Antiepileptics**			
Comment	Refer to NICE guideline No 76 "Newer Drugs for Epilepsy in Adults" and No 79 "Newer Drugs for Epilepsy in Children" for guidance on the use of oxcarbazepine, levetiracetam, tiagabine and topiramate and SIGN guideline No 70 "Diagnosis and Management of Epilepsy in Adults"			
4.8.1	*Control of Epilepsy*			
	Carbamazepine	⌖	✓	✓
	Gabapentin	⌖	✓	✓
	Pregabalin	⌖	✓	✓
	Zonisamide **(for specialist use only)**			✓
	Lamotrigine	⌖	✓	✓
	Levetiracetam	⌖	✓	✓
	Phenobarbital [Phenobarbitone] (Paediatrics)	⌖		✓
	Phenytoin	⌖	✓	✓
	Sodium Valproate	⌖	✓	✓
	Clobazam	⌖	⌖	✓
	Topiramate(under specialist supervision)	⌖	✓	✓
	Clonazepam	⌖	⌖	✓
Comment	Many antiepileptic products are available as generic products which may vary in bioavailability, therefore, are not interchangeable. It is recommended that prescribing should be by brand name to ensure continuity.			
4.8.2	*Drugs used in Status Epilepticus*			
	Diazepam (rectal)	✓	✓	✓
	Diazemuls®	✓	✓	✓
	Lorazepam I.V.			✓
	Phenytoin I.V.			✓
Comment	Refer to Acute Services Phenytoin Loading Guidleines for Status Epilepticus & Maintenance Therapy (Appendix 27)			
4.9	**Drugs used in Parkinsonism and related disorders**			
4.9.1	*Dopaminergic Drugs used in Parkinsonism*			
	Apomorphine	Specialist Consultant Recommendation		
	Entacapone	✓	✓	✓
	Madopar®	✓	✓	✓
	Pramipexol salt 0.125mg, 0.250mg, 1.0 mg tablets (Mirapexin®)	✓	✓	✓
	Ropinirole (Adartrel®)	✓	✓	✓
Comment	Ropinirole for the treatment of restless leg syndrome, use is restricted to patients with a baseline score of 24 points or more on the International Restless Legs Scale.			
	Rotigotine Patch	Specialist Initiation Only		
	Sinemet®	✓	✓	✓
	Selegiline	⌖	✓	✓
	Stalevo®	✓	✓	✓
Comment	Patients <60yrs should NOT be treated with levodopa prior to being referred to one of the Parkinson Disorder clinics.			
4.9.2	*Antimuscarinic Drugs used in Parkinsonism*			
	Orphenadrine	⌖	✓	✓
	Procyclidine	✓	✓	✓
4.9.3	*Drugs used in Essential Tremor, Chorea, Tics and Related Disorders*			
	Propranolol (see section 2.4)	✓	✓	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
4.10	**Drugs used In Substance Dependence**			
Comment	See Section 4.1.2 and Refer to Guidelines for Management of Alcohol Withdrawals (Appendix 20, Appendix 21, and Appendix 22.)			
	Acamprosate	✓	✓	✓
	Nicotine Products	✓	✓	✓
	Varenicline	✓	✓	✓
	Bupropion	✓	⌖	✓
Comment	Refer to FV Smoking Cessation Flow Charts (Appendix 28)			
	Disulfiram	✓	✓	⌖
	Buprenorphine (CADS, FV-TOX & GPwSP)	⌖	✓	⌖
	Buprenorphine/naloxone (CADS + FV-TOX) Suboxone®	⌖	✓	⌖
	Methadone (CADS + GPPS)	✓	✓	⌖
Comment	Refer to • Methadone Assisted Treatment Programme • Buprenorphine Assisted Treatment Programme • Guidance on the Management of Opioid Dependance: Buprenorphine detoxification (Appendix 23)			
	Naltrexone (CADS & FV-TOX)	⌖	✓	⌖
4.11	**Drugs for Dementia**			
	Donepezil		✓	
	Rivastigmine		✓	
	Galantamine		✓	

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
5	***Infections***			
Comment	Please refer to appropriate guidelines for specific indications • Primary Care Management of Infection Guidance (Appendix 29) • Acute Care Management of Infection Guidance (Appendix 30) • Acute Care Oral Antibiotic Switch Therapy Protocol (Appendix 31) • Antibiotic Dosage Guidelines Gentamicin / Vancomycin (Appendix 32) • Forth Valley GUM List (Appendix 34) • Patients receiving Chemotherapy Who Become Unwell – Guidance for Community Healthcare Practitioners (Appendix 41) • Acute Care Neutropenic Sepsis Antibiotic Policy (Appendix 42) • Potential Neutropenic Sepsis Flow Chart (Appendix 43) • British Lymphology Society – Consensus Document on the Management of Cellulitis in Lymphoedema http://www.lymphoedema.org/lsn			
5.1	**Antibacterial drugs**			
5.1.1	*Penicillins*			
	Benzylpenicillin	✓	✓	✓
	Penicillin V	✓	✓	✓
	Flucloxacillin	✓	✓	✓
	Amoxicillin	✓	✓	✓
	Co-amoxiclav	✓	✓	✓
	Piperacillin and tazobactam (Tazocin®)			✓
Comment	Tazocin® only to be used following microbiological advice.			
5.1.2	*Cephalosporins, cephamycins and other beta-lactams*			
	Cefalexin (for UTI)	✓	✓	✓
	Cefotaxime (I.V.)			✓
Comment	Cefotaxime I.V restricted for paediatrics / neonates.			
	Ceftazidime			✓
	Ceftriaxone		✓	✓
	Cefuroxime			✓
Comment	Cefuroxime for use in surgical prophylaxis only.			
	Imipenem with Cilastatin			✓
	Meropenem-Restricted use, seek microbiology advice			✓
Comment	Aztreonam, imipenem with cilastatin and meropenem used only following microbiological advice and aztreonam and imipenem with cilastatin in Cystic Fibrosis.			
5.1.3	*Tetracyclines*			
	Doxycycline	✓	✓	✓
	Lymecycline (2nd line in acne)	✓	✓	✓
	Oxytetracycline	✓	✓	✓
	Tetracycline	✓		
Comment	Oral Tetracycline in combination with other agents for MRSA infection only. Tetracycline Injection is an unlicensed preparation			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
5.1.4	*Aminoglycosides*			
	Gentamicin			✓
	Neomycin			✓
	Tobramycin- (Paediatric Cystic Fibrosis only)			✓
5.1.5	*Macrolides*			
	Erythromycin	✓	✓	✓
	Azithromycin			✓
Comment	Azithromycin restricted for paediatrics and GUM clinic (see Appendix 34). Tobramycin restricted to use in Cystic Fibrosis only.			
	Clarithromycin	✓	✓	✓
5.1.6	*Clindamycin*			
	Clindamycin			✓
Comment	Use only following microbiological advice			
5.1.7	*Some other antibacterials*			
	Chloramphenicol			✓
	Colistimethate [Colistin] - (Cystic Fibrosis only)			✓
	Linezolid (Restricted use, seek microbiology advice)			✓
	Sodium fusidate	✓	✓	✓
	Vancomycin			✓
	Teicoplanin (Restricted use – Haematology or on Microbiology advice)			✓
Comment	Above products only to be used following microbiological advice.			
5.1.8	*Sulphonamides and trimethoprim*			
	Trimethoprim	✓	✓	✓
	Co-Trimoxazole	✓	✓	✓
Comment	Co-trimoxazole to be restricted for treatment and prophylaxis of Pneumocystis Pneumonia, Stenotrophomonas multiphilia or following microbiological advice			
5.1.9	*Antituberculous drugs*			
	Ethambutol Hydrochloride	⌖	⌖	✓
	Isoniazid	⌖	⌖	✓
	Pyrazinamide	⌖	⌖	✓
	Rifampicin	⌖	⌖	✓
	Rifater®	⌖	⌖	✓
	Rifinah® 150 & 300	⌖	⌖	✓
	Streptomycin	⌖	⌖	✓
	Amikacin (see section 5.1.4)	⌖	⌖	✓
	Ciprofloxacin (see section 5.1.12)	⌖	⌖	✓
5.1.10	*Antileprotic drugs*			
	Dapsone	⌖	⌖	✓
5.1.11	*Metronidazole and tinidazole*			
	Metronidazole	✓	✓	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
5.1.12	*Quinolones*			
	Ciprofloxacin	✓	✓	✓
	Moxifloxacin			✓
	Norfloxacin (Spontaneous Bacterial Peritonitis prophylaxis)	✓	✓	✓
	Ofloxacin			✓
Comment	Moxifloxacin restricted to 2nd line treatment in Community Acquired Pneumonia and in exacerbations of COPD in penicillin allergic patients. Ofloxacin restricted to Orchitis, prostatitis and Pelvic Inflammatory Disease only. Norfloxacin for prostatitis and prophylaxis of infection in ascites.			
5.1.13	*Urinary-tract infections*			
	Nitrofurantoin	✓	✓	✓
Comment	Refer to Infection Guidance (Appendices 29 & 30)			
5.2	**Antifungal drugs**			
	Amphotericin (I.V.)			✓
	Fluconazole (IV & Oral)	✓	✓	✓
Comment	N.B. Not 1st line in oral thrush			
	Flucytosine (IV)			✓
	Itraconazole	✓	✓	✓
	Miconazole (Oral Gel)	✓	✓	✓
	Nystatin	✓	✓	✓
	Terbinafine	✓	✓	✓
	Voriconazole (IV & Oral)			✓
Comment	Voriconazole should only be used following microbiological advice			
5.3	**Antiviral drugs**			
5.3.1	*HIV Infection*			
Comment	See F.V. GUM list (Appendix 34)			
5.3.2	*Herpes virus infections*			
	Aciclovir **(1st line)**	✓	✓	✓
	Famciclovir (2nd line if compliance is a problem)	✓	✓	✓
5.3.3	*Viral Hepatitis*			
	Adefovir dipivoxil (Restricted use Follow West of Scotland Guidelines)			✓
5.3.5	Ribavarin (Rebetol®) 200mg Capsules- (In combination with Viraferon & Intron A)			✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
5.4	**Antiprotozoal drugs**			
5.4.1	*Antimalarials*			
Comment	Treatment of Malaria is prescribable on the NHS. Prophylaxis is not prescribable at NHS expense but private prescriptions can be provided.			
	Chloroquine	✓	⌖	✓
	Primaquine	✓	⌖	✓
	Proguanil Hydrochloride	✓	⌖	✓
	Pyrimethamine with Sulfadoxine (Fansidar®)	✓	⌖	✓
	Pyrimethamine with Dapsone (Maloprim®)	✓	⌖	✓
	Quinine Sulphate	✓	⌖	✓
	Hydroxychloroquine Sulphate (see section 10.1.3)	✓	⌖	✓
Comment	Prescribe following discussion with Infectious Diseases.			
5.4.2	*Amoebicides*			
	Diloxanide Furoate	✓	⌖	✓
	Metronidazole	✓	✓	✓
Comment	Prescribe following discussion with Infectious Diseases.			
5.5	**Anthelmintics**			
	Mebendazole	✓	✓	✓
	Piperazine	✓	✓	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
6	***Endocrine System***			
Comment	Please refer to Management of Adult Patients with Diabetes Undergoing Elective Surgery (Appendix 36), Recommendations for Blood Glucose Monitoring Guidelines in Type 1 Diabetes (Appendix 37) Initiation of oral agents in Type 2 Diabetics (Appendix 38) and Blood Glucose Meters-Formulary Choices (Appendix 39)			
6.1	**Drugs used in Diabetes**			
6.1.1	*Insulins* (Recommendation by Practitioner experienced in management of diabetes)	✓	✓	✓
6.1.2	*Oral Antidiabetic Drugs*			
6.1.2.1	*Sulphonylureas*			
	Gliclazide **(1st Line)**	✓	✓	✓
	Glipizide	✓	✓	✓
	Glimepiride (only if problems with compliance or polypharmacy)	✓	✓	✓
6.1.2.2	*Biguanides*			
	Metformin	✓	✓	✓
6.1.2.3	*Other Antidiabetics*			
	Pioglitazone **(1st Line)**	✓	✓	✓
	Rosiglitazone	✓	✓	✓
Comment	Rosiglitazone – avoid use if history of cardiovascular disease			
	Sitagliptin	⌖	⌖	✓
	Exenatide	⌖	⌖	✓
Comment	Sitagliptin and Exenatide restricted to prescribers experienced in the management of diabetes.			
6.1.4	*Treatment of Hypoglycaemia*			
	Glucagon	✓	✓	✓
	Glucose 50%	✓	✓	✓
6.2	**Thyroid and Antithyroid Drugs**			
6.2.1	*Thyroid Hormones*			
	Levothyroxine [Thyroxine] Sodium **(1st Line)**	✓	✓	✓
	Liothyronine Sodium			✓
6.2.2	*Antithyroid Drugs*			
	Carbimazole **(1st Line)**	✓	✓	✓
	Propylthiouracil	✓	✓	✓
	Potassium iodide			✓
	Propranolol	✓	✓	✓
6.3	**Corticosteroids**			
Comment	Please refer to Adult Adrenal Insufficiency Management Guidelines (Appendix 35)			
6.3.1	*Replacement Therapy*			
	Fludrocortisone Acetate	✓	✓	✓
6.3.2	*Glucocorticoid Therapy*			
	Hydrocortisone Tablets	⌖	⌖	✓
	Hydrocortisone Injection	✓	✓	✓
	Dexamethasone	✓	⌖	✓
	Methylprednisolone			✓
	Prednisolone	✓	✓	✓
Comment	Consider osteoporosis prevention treatment if corticosteroids used long term. Please refer to Forth Valley Osteoporosis Guidelines			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
6.4	**Sex Hormones**			
6.4.1	*Female Sex Hormones*			
6.4.1.1	*Oestrogens and HRT*			
Comment	Refer to FV HRT Flowchart (Appendix 40)			
	Tibolone	✓	✓	✓
With uterus	Premique® (Includes low dose)	✓	✓	✓
	Prempak-C®	✓	✓	✓
	Femoston®	✓	✓	✓
	FemSeven Conti®	✓	✓	✓
	FemSeven Sequi®	✓	✓	✓
	Elleste Duet®	✓	✓	✓
	Evorel (includes Conti)	✓	✓	✓
	Elleste Duet Conti®	✓	✓	✓
	Kliovance®	✓	✓	✓
Without uterus	Premarin®	✓	✓	✓
	Elleste Solo®	✓	✓	✓
	Estraderm MX®	✓	✓	✓
	Oestrogel®	✓	✓	✓
6.4.1.2	*Progestogens*			
	Progesterone (Cyclogest® for subfertility)			✓
	Dydrogesterone	✓	✓	✓
	Medroxyprogesterone	✓	✓	✓
	Norethisterone	✓	✓	✓
6.4.2	*Male Sex Hormones & Antagonists*			
	Testosterone	⌖	⌖	✓
	Cyproterone Acetate	⌖	✓	✓
	Finasteride	✓	⌖	✓
6.5	**Hypothalamic and pituitary hormones and anti-oestrogens**			
6.5.1	*Hypothalamic and anterior pituitary hormones and anti-oestrogens*			
	Clomifene Citrate			✓
	Chorionic Gonadotrophin (HCG)			✓
	Follicle Stimulating Hormone (FSH)			✓
	Gonadorelin (LH-RH)			✓
	Tetracosactrin ('Synacthen®')			✓
	Somatropin (Synthetic Human Growth Hormone) (Genotropin®)			✓
Comment	Specific recommendation from Dr McQueen. All products for assisted conception are funded centrally and **GPs should not prescribe.**			
6.5.2	*Posterior Pituitary Hormones and Antagonists*			
	Desmopressin	✓	⌖	✓
	Terlipressin (oesophageal varices)			✓
6.6	**Drugs affecting bone metabolism**			
6.6.1	*Calcitonin*			
	Parathyroid hormone 100mcg powder for injection			✓
	Salcatonin Nasal Spray			✓
	Teriparatide			✓
Comment	Teriparatide -restricted use refer to SMC Guidance			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
6.6.2	*Bisphosphonates*			
Comment	Please refer to Hypercalcaemia of Malignancy Treatment Guideline (Appendix 44) & Suspected Hypercalcaemia of Malignancy Guideline for Primary Care (Appendix 45)			
	Alendronic Acid **(1st Line)** (prophylaxis and treatment in men and women)	✓	✓	✓
	Risedronate Sodium (prophylaxis and treatment in women only)	✓	✓	✓
Comment	Risedronate 2nd Line if GI intolerance of alendronic acid. Recommended in G.I problems. Caution ensure correct strength is prescribed for indication.			
	Disodium Pamidronate(I.V.)- **(1st Line for hypercalcaemia)**			✓
	Zoledronic Acid Sol'n (2nd line)			✓
	Ibandronic Acid-(3rd Line)	✓		✓
Comment	IV Ibandronate for patients with osteoporosis who cannot tolerate oral bisphophonates			
	Stontium ranelate (Protelos®)	✓	✓	✓
Comment	Stontium ranelate 2nd Line to bisphosphonates for patients who cannot tolerate bisphosphonates			
	Raloxifene	✓	✓	✓
Comment	Rafoxifene may be used for patients where bisphosphonates and Stontium are contra indicated or not tolerated			
6.7	**Other endocrine drugs**			
6.7.1	*Bromocriptine and other dopamine-receptor stimulants*			
	Bromocriptine	✓	✓	✓
	Cabergoline	⌖	⌖	✓
	Quinagolide	⌖	⌖	✓
6.7.2	*Drugs affecting gonadotrophins*			
	Danazol	⌖	⌖	✓
	Naferelin	⌖	⌖	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
7	***Obstetrics, gynaecology and urinary tract disorders***			
7.1	**Drugs used in obstetrics**			
7.1.1	*Prostaglandins and oxytocics*			
	Carboprost			✓
	Dinoprostone			✓
	Ergometrine Maleate			✓
	Syntometrine®			✓
	Gemeprost			✓
	Oxytocin			✓
7.1.1.1	*Ductus arteriosus*			
	Alprostadil (restricted to paediatrics)			✓
7.1.2	*Mifepristone*			
	Mifepristone			✓
	Misoprostol (NB. Unlicensed indication)			✓
7.1.3	*Myometrial Relaxants*			
	Atosiban			✓
	Terbutaline			✓
7.2	**Treatment of vaginal and vulval conditions**			
Comment	See also Forth Valley GUM List (Appendix 34)			
7.2.1	*Preparations for vaginal atrophy*			
	Conjugated oestrogens (Premarin® cream)	✓	✓	✓
	Estradiol [Oestradiol] (Vagifem®, Estring®)	✓	✓	✓
	Estriol [Oestriol] (Ovestin®)	✓	✓	✓
7.2.2	*Anti-infective drugs*			
	Clotrimazole	✓	✓	✓
	Miconazole	✓	✓	✓
	Clindamycin			✓
	Povidone Iodine (Betadine®)	✓	✓	✓
7.3	**Contraceptives**			
7.3.1	*Combined oral contraceptives*			
	Loestrin20®	✓	✓	✓
	Logynon®	✓	✓	✓
	Microgynon30®	✓	✓	✓
	Marvelon®	✓	✓	✓
	Mercilon®	✓	✓	✓
	Femodene®	✓	✓	✓
	Cilest®	✓	✓	✓
	Emergency contraception			
	Levonelle®1500	✓	✓	✓
Comment	Only effective if taken within 72 hours. Taking the dose as soon as possible increases efficacy.			
7.3.2.1	*Oral Progestogen-only contraceptives*			
	Cerazette® (use 2nd line-follow SMC advice)	✓	✓	✓
	Femulen®	✓	✓	✓
	Norethisterone	✓	✓	✓
7.3.2.2	*Parenteral Progestogen-only contraceptives*			
	Medroxyprogesterone acetate (Depo-provera®)	✓	✓	✓
	Implanon®			✓

Chapter/Section/Drug		Primary Care		Acute
		CHPs	Specialist	Services
7.3.2.3	*Intra-uterine progestogen-only contaceptive*			
	Mirena® (not 1st line)	✓		✓
7.3.4	*Contraceptive devices*			
	Nova-T ® 380	✓	✓	✓
	Multiload ® Cu375	✓	✓	✓
	T-Safe® CU 380A	✓	✓	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
7.4	**Drugs for genito-urinary disorders**			
7.4.1	*Drugs for urinary retention*			
	Distigmine	⌖	⌖	✓
	Tamsulosin	✓	⌖	✓
	Alfuzosin	⌖	⌖	✓
Comment	Alfuzosin is available as both standard release and M/R formulations. If prescribing M/R preparation, please prescribe by brand.			
7.4.2	*Drugs for urinary frequency, enuresis and incontinence*			
	Duloxetine (restricted use refer to SMC Guidance)	⌖	⌖	✓
	Propiverine	✓	✓	✓
	Oxybutinin	✓	✓	✓
	Tolterodine	✓	✓	✓
	Trospium Choride (2nd line)	✓	✓	✓
	Solifenacin Succinate (Vesicare®)	✓	✓	✓
	Desmopressin (see section 6.5.2)	✓	✓	✓
Comment	Desmopressin **Spray** is no longer indicated for nocturnal enuresis unless treatment is associated with multiple sclerosis			
7.4.3	*Drugs used in urological pain*			
	Potassium citrate (Effercitrate®)	✓	✓	✓
7.4.4	*Bladder instillations and urological surgery*			
	Sodium chloride	✓	✓	✓
	Dimethyl sulphoxide			✓
	Mitomycin-C			✓
	Epirubicin			✓
7.4.5	*Drugs for impotence*			
Comment	National guidance for prescribing drugs for erectile dysfunction (and other schedule 11 drugs) is available at the following web link http://www.show.scot.nhs.uk/sehd/pca/pca1999(m)9(p)3.htm			
	Alprostadil (Caverject®, Muse®)	✓	✓	✓
	Sildenafil	✓	✓	✓
	Papaverine			✓
	Phentolamine Injection			✓
	Tadalafil	✓	✓	✓
	Vardenafil	✓	✓	✓
Comment	Papaverine and Phentolamine are both unlicensed for this indication.			

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
8	***Malignant disease and immunosuppression***			
Comment	Please refer to Superior Vena Cava Obstruction Treatment Guideline for Acute Services (Appendix 46), Superior Vena Cava Obstruction Guideline for Primary Care (Appendix 47), Malignant Spinal Cord Compression Guideline for Seconday Care (Appendix 48) & Malignant Spinal Cord Compression Guideline for Primary Care (Appendix 49)			
8.1	**Cytotoxic drugs**			
8.1.1	*Alkylating drugs*			
	Chlorambucil			✓
	Cyclophosphamide	⌖		✓
	Ifosfamide			✓
	Melphalan			✓
	Busulfan	To be prescribed only by West of Scotland haemopoietic stem cell transplant team with HSCT protocols		
	Mesna (urothelial toxicity)			✓
	Treosulfan			✓
8.1.2	*Cytotoxic antibiotics*			
	Bleomycin			✓
	Doxorubicin			✓
	Epirubicin			✓
	Idarubicin			✓
	Mitomycin-C			✓
	Mitozantrone			✓
	Daunorubicin			✓
8.1.3	*Antimetabolites*			
	Cytarabine			✓
	Fludarabine Phosphate			✓
	5-Fluorouracil (cream - in liaison with Dermatologist)	⌖		✓
	Capecitabine			✓
	Nelarabine		Restricted use West of Scotland Oncology Unit	
	Gemcitabine 200mg and 1g powder for infustion (Gemzar®)		Restricted use West of Scotland Oncology Unit	
	Methotrexate	⌖	⌖	✓
Comment	For patients, who are receiving S/C Methotrexate for Rheumatoid Arthritis, administer in liaison with Acute Pharmacy Services.			
	Mercaptopurine			✓
	Thioguanine			✓
	Folinic acid (Folate rescue)			✓
8.1.4	*Vinca alkaloids and etoposide*			
	Etoposide			✓
	Vinblastine			✓
	Vincristine			✓
	Vinorelbine			✓
8.1.5	*Other antineoplastic drugs*			
	Bortezomib			✓
	Carboplatin			✓
	Cisplatin			✓

Chapter/Section/Drug		Primary Care		Acute
		CHPs	Specialist	Services
8.1.5	Hydroxyurea	⌖	⌖	✓
	Procarbazine		✓	
	Amsacrine			✓
	Dacarbazine			✓
	Oxaliplatin 50mg,100mg powder For IV Infusion (Eloxatin®)		Restricted Use West of Scotland Oncology Unit	
	Dasatinib		Restricted Use West of Scotland Oncology Unit	
	Trastuzumab 150mg vial (Herceptin®)		Restricted Use West of Scotland Oncology Unit	
	Docetaxel		Restricted Use West of Scotland Oncology Unit	
	Temozolomide 5, 20,100 and 250mg Capsules (Temodal®)		Restricted Use West of Scotland Oncology Unit	
	Erlotinib 25, 100 and 150 f/c tablets (Tarceva®)		Restricted Use West of Scotland Oncology Unit	
8.2	**Drugs affecting the immune response**			
8.2.1	*Antiproliferative immunosuppressants*			
	Azathioprine	⌖	⌖	✓
	Mycophenolic acid	⌖	⌖	✓
8.2.2	*Corticosteroids and other immunosuppressants*			
	Ciclosporin [Cyclosporin]	⌖	⌖	✓
	Prednisolone	✓	✓	✓
	Methylprednisolone	⌖	⌖	✓
	Tacrolimus	⌖	⌖	✓
8.2.3	*Rituximab and alemtuzumab*			
	Rituximab 10mg/ml Concentrate for infusion (MabThera®)			✓
8.2.4	*Interferons*			
	Natalizumab (Specialist Initiation)			✓
	Interferon-alfa (Haematology use only)	⌖		✓
	Interferon alfa 2b (Viraferon & Intron A) 18 million IU. Solution For injection, multidose pen in Combination with ribavarin (Rebetol®) capsules 200mg			✓
	Viraferon® (Hepatitis B)			✓
	Others			
	BCG bladder instillation			✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
8.3	**Sex hormones and hormone antagonists in malignant disease**			
8.3.1	*Oestrogens*			
	Ethinylestradiol [Ethinyloestradiol]	⌖	⌖	✓
8.3.2	*Progestogens*			
	Medroxyprogesterone acetate	✓	✓	✓
	Megestrol acetate	✓	✓	✓
	Norethisterone	✓	✓	✓
8.3.4	*Hormone antagonists*			
	Tamoxifen	⌖	⌖	✓
	Anastrozole	Restricted use West of Scotland Oncology Unit		
	Letrozole	⌖	⌖	✓
	Cyproterone acetate	⌖	⌖	✓
	Flutamide	⌖	⌖	✓
	Bicalutamide	⌖	⌖	✓
	Goserelin	⌖	⌖	✓
	Leuprorelin	⌖	⌖	✓
	Exemestane	Restricted Use West of Scotland Oncology Unit		
	Triptorelin (Decapeptyl SR ®)	✓	✓	✓
	Octreotide	⌖	⌖	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
9	***Nutrition and Blood***			
9.1	**Anaemias and some other blood disorders**			
9.1.1	*Iron-deficiency anaemias*			
9.1.1.1	*Oral Iron*			
	Ferrous sulphate	✓	✓	✓
	Ferrous fumarate (syrup)	✓	✓	✓
	Ferrous gluconate	✓	✓	✓
	Sodium Feredetate	✓	✓	✓
9.1.1.2	*Parenteral Iron*			
	Iron dextran injection			✓
	Iron sorbitol injection			✓
9.1.2	*Drugs used in megaloblastic anaemias*			
	Folic Acid	✓	✓	✓
	Hydroxocobalamin	✓	✓	✓
Comment	Giving vitamin B12 without further investigation, due to macrocytic anaemia, can prevent subsequent accurate diagnosis. Intrinsic factor antibody test cannot be interpreted in the presence of high levels of B12 (serum B12 levels are not relevant after B12 has been given). If there is clinical suspicion of sub-acute combined degeneration, treatment should be initiated immediately after generous samples for analysis are taken.			
9.1.3	*Drugs used in hypoplastic, haemolytic, and renal anaemias*			
	Darbepoetin Alfa	⌖	⌖	✓
	Epoetin delta	⌖	⌖	✓
	Epoetin alfa	⌖	⌖	✓
	Epoetin beta	⌖	⌖	✓
Comment	Epoetin for renal unit/shared care use only.			
9.1.4	*Drugs used in platelet disorders*			
	Anagrelide		Restricted use West of Scotland Oncology Unit only	
9.1.6	*Drugs used in neutropenia*			
	Filgrastim (restricted - haematology/oncology use only)			✓
9.2	**Fluids and electrolytes**			
9.2.1	*Oral preparations for fluid and electrolyte imbalance*			
	Potassium chloride (Sando-K®, Kay-Cee-L syrup®)	✓	✓	✓
	Calcium polystyrene sulphonate (Calcium resonium®)			✓
	Sodium polystyrene sulphonate (Resonium A®)			✓
	Oral rehydration salts	✓	✓	✓
	Sodium bicarbonate	⌖	⌖	✓
9.2.2	*Parenteral preparations for fluid and electrolyte imbalance*			
9.2.2.1	*Electrolytes and water*			
	Sodium chloride		✓	✓
	Sodium chloride/glucose			✓
	Sodium chloride with Potassium		✓	✓
	Glucose		✓	✓
	Glucose with Potassium		✓	✓
	Potassium chloride strong solution			✓
	Sodium bicarbonate			✓
9.2.2.2	*Plasma and plasma substitutes*			
	Haemaccel®			✓
	HAES-steril®			✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
9.4	**Oral Nutrition** Dietetic recommendation			
9.5	**Minerals**			
Comment	Refer to Hypomagnesaemia in Adults Guideline (Appendix 50) and Hypophosphataemia in Adults Guideline (Appendix 51)			
9.5.1	*Calcium and magnesium* Sandocal®	✓	✓	✓
	Calcium-Sandoz® syrup	✓	✓	✓
	Titralac® (see section 9.6.4)			✓
	Calcium Gluconate Injection			✓
	Magnesuim sulphate injection			✓
9.5.2 *9.5.2.2*	*Phosphorus* *Phosphorus binding agents* Aluminium hydroxide			✓
	Lanthanum	✓	✓	✓
9.5.4	*Zinc* Zinc sulphate (Solvazinc®)			✓
9.6	**Vitamins**			
9.6.1	*Vitamin A* Vitamins A and D	✓		
	Vitamins A C and D	✓	✓	✓
9.6.2	*Vitamin B* Thiamine (Vit B1)	✓	✓	✓
	Pyridoxine (Vit B6)	✓	✓	✓
	Nicotinamide	✓	✓	✓
	Vitamin B Co Strong	✓		✓
	Vitamins B and C IV/HP (Pabrinex®)		✓	✓
9.6.3	*Vitamin C* Ascorbic acid	✓	✓	✓
9.6.4	*Vitamin D* Ergocalciferol (readily available as calcium and ergocalciferol)	✓	✓	✓
	Calcium and colecalciferol (Adcal-D3® & Calfovit D3®)	✓	✓	✓
	Alfacalcidol	⌖	⌖	✓
9.6.6	*Vitamin K* Phytomenadione	✓	✓	✓
	Menadiol sodium phosphate	⌖		✓
	Konakion MM®	⌖		✓
	Konakion MM Paediatric®	✓		✓
9.6.7	*Multivitamin preparations* Vitamin A, B group, C,and D (Abidec® & Dalivit®)	✓	✓	✓
	Forceval ®(+/-junior) Capsules	✓	✓	✓
	Vitamin Capsules BPC	✓	✓	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
10	***Musculoskeletal and joint diseases***			
10.1	**Drugs used in rheumatic diseases and gout**			
Comment	See also FV GUM List (Appendix 34)			
10.1.1	*Non-steroidal anti-inflammatory drugs*			
	Ibuprofen	✓	✓	✓
	Diclofenac sodium (not M/R product)	✓	✓	✓
	Diclofenac 75mg/2ml Sol'n for intravenous injection (Dyloject®) – **(Restricted use for post operative pain)**			✓
	Naproxen	✓	✓	✓
	Celecoxib (not 1st line) (As per SMC Advice)	✓	✓	✓
	Etoricoxib (Alternative to Celeboxib)	✓	✓	✓
10.1.2	*Corticosteroids*			
	Triamcinolone hexacetanide	✓		✓
	Methylprednisolone acetate	✓		✓
	Hydrocortisone acetate	✓		✓
10.1.3	*Drugs which suppress the rheumatic disease process*			
	Sodium aurothiomalate	⌖	⌖	✓
	Auranofin	⌖	⌖	✓
	Penicillamine	⌖	⌖	✓
	Hydroxychloroquine sulphate	⌖	⌖	✓
	Cyclophosphamide	⌖	⌖	✓
	Methotrexate	⌖	⌖	✓
	Azathioprine	⌖	⌖	✓
	Sulphasalazine (EC formulation)	⌖	⌖	✓
	Adalimumab			✓
	Ciclosporin (Prescribe by brand)	⌖	⌖	✓
Comment	Due to differences in bioavailability ciclosporin brand should be specified.			
	Mycophenylate	Specialist recommendation by rheumoatology expert for SLE only		
	Leflunomide	Rheumatology recommendation only		
	Adalimumab	Rheumatology recommendation only		
	Etanercept	Rheumatology recommendation only		
	Infliximab	Rheumatology recommendation only		
	Rituximab (Acute use only)			✓
10.1.4	*Drugs for treatment of gout*			
	Colchicine (acute attack)	✓	✓	✓
Comment	Caution with course length/total dose of colchicine - refer to BNF.			
	Allopurinol (prophylaxis)	✓	✓	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
10.2	**Drugs used for neuromuscular disorders**			
10.2.1	*Drugs which enhance neuromuscular transmission*			
	Neostigmine	⌖	⌖	✓
	Distigmine (see section 7.4.1)	⌖	⌖	✓
	Edrophonium chloride	⌖	⌖	✓
	Pyridostigmine bromide	⌖	⌖	✓
10.2.2	*Skeletal muscle relaxants*			
	Baclofen	⌖	✓	✓
	Dantrolene	⌖	⌖	✓
	Diazepam (short term use)	✓	✓	✓
	Quinine Sulphate (300mg)	✓	⌖	✓
10.3	**Drugs for the relief of soft-tissue inflammation**			
	Hyaluronidase			✓
	Capsaicin 0.075% cream (Axsain®)	✓	⌖	✓
	Movelat® gel/cream	✓		

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
11	***Eye***			
11.3	**Anti-infective eye preparations**			
11.3.1	*Antibacterials*			
	Chloramphenicol	✓	✓	✓
Comment	Chloramphenicol eye drops are well tolerated and the recommendation that they should be avoided because of increased risk of aplastic anaemia is not well founded.			
	Fusidic acid	✓	✓	✓
	Gentamicin	✓	✓	✓
	Ofloxacin	⌖	⌖	✓
	Brolene® & Chlorhexidine (for acanthamoeba)	Ophthalmologist use only		
11.3.3	*Antivirals*			
	Aciclovir (on advice from secondary care)	⌖	⌖	✓
11.4	**Corticosteroids and other anti-infalmmatory preparations**			
11.4.1	*Corticosteroids*			
Comment	Ophthalmologist recommendations - GPs should not initiate corticosteroids without advice.			
	Betamethasone (Betnesol® Drops & Oint, Betnesol-N® Drops)	⌖	⌖	✓
	Dexamethasone (Maxidex® Drops, Maxitrol® Oint)	⌖	⌖	✓
	Dexamethasone (Minims® Dexamethasone)	Ophthalmologist use only		
	Fluorometholone	Ophthalmologist use only		
	Prednisolone (Pred Forte® Drops, Predsol® Drops, Predsol-N® Drops)	⌖	⌖	✓
	Prednisolone (Minims®)			✓
	Prednisolone (Predsol® 0.1% & Predsol® 0.03% Drops)	Ophthalmologist use only		
	Rimexolone			✓
11.4.2	*Other anti-inflammatory preparations*			
	Olopatadine (Optanol®)	✓	✓	✓
	Antazoline (Otrivine-Antistin®)	✓		
Comment	Otrivine-Antistin® also contains the sympathomimetic xylometazoline. It should be avoided in angle-closure glaucoma.			
	Azelastine	⌖	⌖	✓
	Levocabastine	⌖	⌖	✓
	Lodoxamide	⌖	⌖	✓
	Nedocromil (2nd line)	✓	✓	✓
	Sodium Cromoglicate	✓	✓	✓
11.5	**Mydriatics and cycloplegics**			
	Atropine 1% (Drops & Minims®)	⌖	⌖	✓
	Cyclopentolate (Drops & Minims®)	⌖	⌖	✓
	Tropicamide 1% (Drops & Minims®)	✓	⌖	✓
	Phenylephrine (Drops & Minims®)	⌖	⌖	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
11.6	**Treatment of glaucoma**			
	Pilocarpine (0.5%, 1%, 2% Drops, Occusert® 20 & 40)	⌖	⌖	✓
	Bimatoprost	⌖	⌖	✓
	Bimatoprost with timolol (Ganfort®)	⌖	⌖	✓
	Brimonidine Tartrate with timolol (Combigan®)	⌖	⌖	✓
	Brimonidine	⌖	⌖	✓
	Dipivefrine	⌖	⌖	✓
	Betaxolol	⌖	⌖	✓
	Timolol (including LA product)	⌖	⌖	✓
	Timolol 0.5% unpreserved			✓
Comment	Please refer to CSM guidance on Beta-blocker use			
	Acetazolamide	⌖	⌖	✓
Comment	Acetazolamide can be initiated in Primary Care under ophthalmologist advice			
	Dorzolamide (Trusopt®, Cosopt®)	⌖	⌖	✓
	Latanoprost	⌖	⌖	✓
	Latanoprost with timolol	⌖	⌖	✓
	Travoprost with timolol	⌖	⌖	✓
	Travoprost **(in accordance with SMC restrictions)**	⌖	⌖	✓
11.7	**Local anaesthetics**			
	Proxymetacaine Minims® (less stinging than others)	✓		✓
	Proxymetacaine and Fluorescein Minims®			✓
	Oxybupricaine Minims®			✓
	Tetracaine [Amethocaine] 1% Minims®			✓
	Lidocaine 0.5% & 1% preservative free			✓
	Lidocaine 0.5% & 1% with epinephrine preservative free			✓
	Marcaine 0.25% & 0.5% preservative free			✓
	Marcaine 0.25% & 0.5% with epinephrine preservative free			✓
	Cocaine 4% drops & 10% paste			✓
11.8	**Miscellaneous ophthalmic preparations**			
11.8.1	*Tear deficiency, ocular lubricants and astringents*			
	Acetylcysteine	⌖	⌖	✓
	Carbomer 0.2% (Viscotears®)	✓	✓	✓
	Carbomer 980 0.2% Drops preservative free	⌖	⌖	✓
	Carbomer 0.25% (Liquivisc®)	✓	✓	✓
	Hydroxyethylcellulose (Minims® Artificial Tears)	✓		
Comment	Preservative free for use in patients with allergy to preservatives.			
	Hypromellose 0.3%	✓	✓	✓
	Hypromellose 0.3% preservative free	⌖	⌖	✓
	Liquid paraffin (Lacri-Lube®)	✓	✓	✓
	Polyvinyl alcohol 1.4% (Liquifilm Tears®)	✓	✓	✓
	Polyvinyl alcohol 1.4% preservative free	⌖	⌖	✓
	Clerz® Eye drops			✓

Chapter/Section/Drug		Primary Care		Acute
		CHPs	Specialist	Services
11.8.2	*Ocular diagnostic and peri-operative preparations and photodynamic treatment*			
	Fluorescein sodium (Minims®)	✓	✓	✓
	Fluorescein sodium (Strips)	✓	✓	✓
	Rose Bengal (Minims®)			✓
	Acetylcholine (Miochol®)			✓
	Apraclonidine (Iopidine® 0.5% drops & 1% 0.25ml units)			✓
	Diclofenac Sodium 0.1%			✓
	Flurbiprofen 0.3%			✓
	Ketorolac 0.5%			✓
	EDTA Eye Drops (for corneal burns N.B. Unlicensed)			✓
	Trifluorothimidine eye drops (2nd line after Aciclovir)			✓
	Cefuroxime 5% eye drops (severe keratitis - 2nd line after ofloxacin)			✓
	Penicillin eye drops (severe keratitis - 2nd line after ofloxacin)			✓
	Teicoplanin eye drops (severe keratitis - 2nd line after ofloxacin)			✓
	Gentamycin Forte (severe keratitis - 2nd line after ofloxacin)			✓
	Natamycin (to be available - fungal keratitis)(rarely used but should have known source)			✓
	Ketoconazole (to be available - fungal keratitis)(rarely used but should have known source)			✓
	Povidone-iodine Minims (Pre-op use - available soon)			✓
	Intravetrial/sub-conjunctival preparations			✓
	Vancomycin (endophthalmitis) IV injection diluted to prepare this			✓
	Amikacin (endophthalmitis) IV injection diluted to prepare this			✓
	Ceftazidime (endophthalmitis) IV injection diluted to prepare this			✓
	Amphoteracin B (endophthalmitis) IV injection diluted to prepare this			✓
	Ranibizumab (Specialist Use Only)			✓
	Gentamycin (endophthalmitis) IV injection diluted to prepare this			✓
	Dexamethasone sodium injection preservative free			✓
	Others			
	Ciclosporin 2% eye drops in oil or 0.5% aqueous (have source available)			✓
	Hyalase® 1500 units			✓
	Healon/Healon GV			✓
	Vision Blue			✓
	Vitamin C 10%			✓
	Hydroxyamphetamine eye drops (for pupil testing)			✓
	Fluorescein IV 20%			✓
	Pilocarpine 5mg tablet			✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
12	***Ear, Nose and Oropharynx***			
12.1	**Drugs acting on the ear**			
12.1.1	*Otitis externa*			
	Betamethasone sodium phosphate (Betnesol®)	✓	✓	✓
	Betnesol-N®	✓	✓	✓
	Flumetasone Pivalate (Locorten-Vioform®)	✓	✓	✓
	Gentisone HC®	✓	✓	✓
	Prednisolone (Predsol®)	✓	✓	✓
	Predsol-N®	✓	✓	✓
	Gentamicin (Genticin®, Garamycin®)	✓	✓	✓
	Gentisone HC®	✓	✓	✓
	Triadcortyl-Otic®			✓
12.1.3	*Removal of ear wax*			
	Cerumol®	✓	✓	✓
	Sodium bicarbonate 5%	✓	✓	✓
12.2	**Drugs acting on the nose**			
12.2.1	*Drugs used in nasal allergy*			
	Azelastine Hydrochloride (Rhinalast®)	✓	✓	✓
	Beclometasone Dipropionate	✓	✓	✓
	Betamethasone sodium phosphate (Betnesol®)	✓	✓	✓
	Budesonide	✓	✓	✓
	Fluticasone Propionate (2nd line)	✓	✓	✓
	Mometasone Furoate (Nasonex®) (2nd line)	✓	✓	✓
	Sodium Cromoglicate	✓		
12.2.2	*Topical nasal decongestants*			
	Ephedrine Hydrochloride (under 12 year olds)	✓	✓	✓
	Sodium Chloride 0.9% (for infants)	✓	✓	✓
	Xylometazoline Hydrochloride	✓	✓	✓
	Ipratropium Bromide (Rinatec®)	✓	✓	✓
12.2.3	*Nasal preparations for infection and epistaxis*			
	Mupirocin (Bactoban Nasal®)	✓	✓	✓
	Naseptin®	✓	✓	✓
12.3	**Drugs acting on the oropharynx**			
12.3.1	*Drugs for oral ulceration and inflammation*			
	Benzydamine Hydrochloride	✓	✓	✓
	Adcortyl in Orabase®	✓	✓	✓
	Hydrocortisone pellets (Corlan®)	✓	✓	✓
	Choline salicylate dental gel BP (Bonjela®, Teejel®)	✓	✓	✓
12.3.2	*Orophanyngeal anti-infective drugs*			
	Amphotericin	✓	✓	✓
	Miconazole	✓	✓	✓
	Nystatin	✓	✓	✓
12.3.3	*Lozenges and sprays*			
	Benzalkonium chloride (Bradasol®)	✓	✓	✓

Chapter/Section/Drug		Primary Care		Acute
		CHPs	Specialist	Services
12.3.4	*Mouthwashes, gargles and dentifrices*			
	Chlorhexidine gluconate	✓	✓	✓
	Povidone-Iodine	✓	✓	✓
	Thymol	✓	✓	✓
12.3.5	*Treatment of dry mouth*			
	AS Saliva Orthana®	✓		
	Glandosane®	✓		
	Oralbalance Gel®		✓	✓

Chapter/Section/Drug	Primary Care CHPs	Primary Care Specialist	Acute Services
Comment	General Practitioners with special interest (GPSIs) are based in primary care but may prescribe or make recommendations on behalf of Acute Services		
Comment	See also FV GUM List Appendix 35		
13	***Skin***		
13.2	**Emollient and barrier preparations**		
Comment	Please refer to Forth Valley Dermatology Guidelines		
13.2.1	*Emollients*		
	Aqueous Cream	✓	✓	✓
	Emulsifying Ointment	✓	✓	✓
	White soft paraffin	✓	✓	✓
	50:50 Ointment (Liq paraffin/White soft paraffin)	✓	✓	✓
	Cetraben® (2nd line – alternative for patients unable to use an oily product)	✓	✓	✓
	Diprobase® cream	✓	✓	✓
	Doublebase® gel & showergel	✓	✓	✓
	E45® (2nd line)	✓	✓	✓
	Epaderm®	✓	✓	✓
	Oilatum®	✓	✓	✓
	Oilatum Plus®	✓	✓	✓
	Calmurid® cream (2nd line)	✓	✓	✓
	Balneum Plus® **(1st line)**	✓	✓	✓
	Dermol ®	✓	✓	✓
	Eucerin® cream and lotion	✓	✓	✓
13.2.2	*Barrier preparations*			
	Metanium® (2nd line)	✓	✓	✓
Comment	Barrier preparations are not appropriate for use in the treatment of eczema			
	Conotrane	✓	✓	✓
13.3	**Topical local anaesthetics and antipruritics**			
	Calamine oily lotion	✓	✓	✓
Comment	The oily lotion gives a more prolonged effect, but contains peanut oil.			
	Crotamiton (Eurax®)	✓		✓
	Doxepin Hydrochloride	⌖	⌖	✓
13.4	**Topical corticosteroids**			
	Hydrocortisone - cream/oint	✓	✓	✓
	Nystaform-HC ® (peri-oral use)	⌖	⌖	✓
	Betnovate® - cream/oint	✓	✓	✓
	Betacap®	⌖	⌖	✓
	Betamousse®	⌖	⌖	✓
	Clarelux®	✓	✓	✓
	Dermovate® - cream/oint	✓	✓	✓
	Eumovate® - cream/oint	✓	✓	✓
	Diprosone® - cream/oint (2nd line)	✓	✓	✓
	Diprosalic® - oint/scalp application	✓	✓	✓
	Lotriderm ® (2nd line)	⌖	⌖	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
	Nerisone Forte® (2nd line)	⌖	⌖	✓
	Haelan ® Tape	⌖	⌖	✓
	Elocon® (Once daily application)	✓	⌖	✓
	Synalar® gel - for scalp use	✓	✓	✓
	Trimovate®	✓	✓	✓
	Canesten HC®	✓	✓	✓
	Daktakort®	✓	✓	✓
	Fucibet®	✓	✓	✓
	Fucidin H®	✓	✓	✓
	Timodine®	✓	✓	✓
	Betnovate C®	⌖	⌖	✓
13.5	**Preparations for eczema and psoriasis**			
Comment	Extemporaneous preparations of "nostrums" containing Ichthammol, Coal Tar or Salicylic acid are no longer "cheap" options. It is highly likely that these will require to be produced by a "Specials" manufacturer at very high cost (upwards of 10 times the expected cost). Therefore, wherever possible prescribe proprietary preparations which correspond the closest to the formulation and strength required.			
13.5.1	*Preparations for eczema*			
	Ichthammol ointment	✓	⌖	✓
	Zinc paste and ichthammol bandage	⌖	⌖	✓
13.5.2	*Preparations for psoriasis*			
	Calcipotriol	✓	✓	✓
	Calcitriol Ointment **(in accordance with SMC guidance)**	✓	✓	✓
	Coal tar **(Extemporaneous coal tar products Acute Service use only)**	✓	✓	✓
	Carbodome	✓	✓	✓
	Alphosyl HC	⌖	⌖	✓
	Exorex® - lotion (2nd line)	⌖	⌖	✓
	Dovobet® **(Use in accordance with SMC guidance)**	⌖	⌖	✓
	Dithranol	✓	✓	✓
	Salicylic acid (as part of extemporaneous preparation)	✓	✓	✓
	Acetretin			✓
	Ciclosporin	⌖	⌖	✓
	Methotrexate	⌖	⌖	✓
13.5.3	*Drugs affecting the immune response*			
	Tacrolimus - ointment **(in accordance with SMC guidance)**	⌖	⌖	✓
13.6	**Acne and rosacea**			
13.6.1	*Topical preparations for acne*			
	Benzoyl peroxide (Panoxyl®)	✓	✓	✓
	Benzoyl peroxide and clindamycin gel (Duac®)	✓	⌖	✓
	Benzoyl peroxide and erythromycin gel (Benzamycin®)	✓	⌖	✓
	Azelaic acid (2nd line)	✓	⌖	✓
	Clindamycin (Dalacin T®)	✓	✓	
	Erythromycin (Topical)	✓		
	Zineryt® lotion **(in guidance with Forth Valley Dermatology Guidelines)**	⌖	⌖	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
13.6.1	Adapalene (Differin®) (less irritant than tretinoin)	✓		
	Isotrex® gel	⌖	⌖	✓
	Isotrexin® gel	⌖	⌖	✓
13.6.2	*Oral preparations for acne* Isotretinoin (specialist use only)			✓
	Dianette®	✓	✓	✓
13.7	**Preparations for warts and callouses** Salicylic acid (Salactol®, Occlusal®) *(Verrugon® - for plantar warts only)*	✓	✓	✓
	Imiquimod			✓
Comment	Imiquimod - Where surgery is not appropriate or in patients unresponsive to conventional therapy			
	Podophyllotoxin - Cream & Solution (Warticon®)		⌖	✓
13.8	**Sunscreens and camouflagers**			
13.8.1	*Sunscreens* E45 Sun®	⌖	⌖	✓
	Sunsense® Ultra	⌖	⌖	✓
	SpectraBan®	⌖	⌖	✓
	Uvistat® SPF30	✓	✓	✓
	Solaraze®	✓	✓	✓
13.9	**Shampoos and other scalp preparations** Capasal®	✓	✓	✓
	Dermax®	✓	✓	✓
	Ketoconazole shampoo (Nizoral®)	✓	✓	✓
	Polytar®	✓	✓	✓
	Sebco®	✓	✓	✓
	T/Gel®	✓	✓	✓
	Vaniqa® **(Restricted use in accordance with SMC Guidance)**	✓	✓	✓
13.10	**Anti-infective skin preparations**			
13.10.1	*Antibacterial preparations* Mupirocin (Bactroban®) - restrict for MRSA	✓	✓	✓
	Silver sulfadiazine (for burns)	✓	✓	✓
	Fusidic acid	✓	✓	✓
	Metronidazole	⌖	⌖	✓
13.10.2	*Antifungal preparations* Amorolfine (for fungal nail infections)	✓	✓	✓
	Clotrimazole	✓	✓	✓
	Ketoconazole cream (Nizoral®)	⌖	⌖	✓
Comment	Nizoral® cream is only prescribable for seborrhoeic dermatitis and pityriasis versicolor and must be endorsed "SLS".			
	Terbinafine	✓	✓	✓
13.10.3	*Antiviral preparations* Aciclovir	✓	✓	✓
	Penciclovir (2nd line in cold sores)	✓	✓	✓
13.10.4	*Paracitical preparations* Malathion	✓	✓	✓
	Permethrin	✓	✓	✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
13.10.4	Phenothrin	✓	✓	✓
Comment	Refer to Forth Valley Headlice Policy			
13.10.5	*Preparations for minor cuts and abrasions*			
	Histoacryl®	✓	✓	✓
13.11	**Disinfectants and cleansers**			
13.11.1	*Alcohols and saline*			
	Industrial Methylated Spirit	✓	✓	✓
	Sodium Chloride 0.9%	✓	✓	✓
13.11.2	*Chlorhexidine salts*			
	Chlorhexidine	✓	✓	✓
13.11.4	*Chlorine and iodine*			
	Povidone-iodine	✓	✓	✓
13.11.5	*Phenolics*			
	Triclosan		✓	✓
13.11.6	*Oxidisers and dyes*			
	Crystacide® (2nd line, only for use if resistance developes)	✓	✓	✓
	Potassium permanganate	✓	✓	✓
13.12	**Antiperspirants**			
	Aluminium Salts	✓		

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
14	***Immunological products and vaccines***			
Comment	Refer to Forth Valley Vaccine Handling Guidelines These include a down-loadable temperature recording chart for refrigerators			
14.4	**Vaccines and antisera**			
	BCG vaccines intradermal			✓
	Tuberculin PPD RT 23 SSI 2T.U/0.1ml Solution for Injection			✓
	Tuberculin PPD RT 23 SSI 10T.U/0.1ml Soution for Injection			✓
	Diphtheria, Tetanus, Pertussis, Polio, Hib, Pediacel, Infanrix IPV + Hib	✓		✓
	Diphtheria, Tetanus, Pertussis Polio (Repevax®, Infanrix IPV)	✓		✓
	Menitorix (combined Hib & MenC)	✓		✓
	Hepatitis A vaccine	✓		
	Hepatitis A/B vaccine (Twinrix®)	✓		
	Hepatitis A and Typhoid vaccine (Hepatyrix®)	✓		
	Hepatitis B vaccine (synthetic)	✓		✓
	Human Papilloma Virus Vaccine (Gardasil®, Cervarix®)	✓		✓
	Influenza vaccine	✓	✓	✓
	MMR vaccine	✓		✓
	Meningococcal Group C Conjugate Vaccine	✓		
	Meningococcal Polysaccharide A, C, W135 and Y vaccine	✓		
	Pneumococcal Polysaccharide (23-valent) Vaccine	✓	✓	✓
	Pneumococcal Polysaccharide (7-valent) Conjugated Vaccine (Prevenar®)	✓	✓	✓
	Polio (inactivated) Vaccine	✓		
	Rabies vaccine	✓		
	Diphtheria (low dose), Tetanus and Inactivated Poliomyelitis Vaccine (Revaxis®)	✓	✓	✓
	Typhoid vaccine	✓		
	Yellow Fever vaccine	✓		
	Varicella – zoster vaccine	✓		
	Botulinum A Toxin (Haemagglutanin complex see BNF section 4.9.3)			✓
14.5	**Immunoglobulins** Please contact the Consultant Haematologist			

Chapter/Section/Drug	Primary Care CHPs	Primary Care Specialist	Acute Services
15 Anaesthesia			
15.1 General anaesthesia			
15.1.1 Intravenous anaesthetics			
Thiopental Sodium			✓
Etomidate			✓
Ketamine			✓
Propofol		✓	✓
15.1.2 Inhalational anaesthetics			
Desflurane			✓
Enflurane			✓
Halothane			✓
Isoflurane			✓
Sevoflurane			✓
Nitrous oxide			✓
Entonox®/Equanox®			✓
Oxygen (refer to section 3.6)			✓
15.1.3 Antimuscarinic drugs			
Atropine sulphate			✓
Glycopyronium bromide			✓
15.1.4 Sedative and analgesic peri-operative drugs			
15.1.4.1 Anxiolytics and neuroleptics			
Diazepam			✓
Midazolam			✓
Temazepam			✓
Alimemazine [Trimeprazine] (see section 3.4.1)			✓
15.1.4.2 Non-opioid analgesics			
Diclofenac (See section 10.1)			✓
Ibuprofen (See section 10.1)			✓
Tenoxicam Injection (See section 10.1)			✓
Co-codamol (see section 4.7.1)			✓
15.1.4.3 Opioid analgesic			
Alfentanil			✓
Fentanyl			✓
Remifentanil			✓
Morphine (See section 4.7.2)			✓
Pethidine (See section 4.7.2)			✓
Tramadol (Post-op pain - 2nd line)(See section 4.7.2)			✓
15.1.5 Muscle relaxants			
Atracurium besilate			✓
Cisatracurium			✓
Mivacurium			✓
Rocuronium bromide			✓
Vercuronium bromide			✓
Suxamethonium chloride			✓
15.1.6 Anticholinesterases used in anaesthesia			
Edrophonium chloride			✓
Neostigmine metilsulfate			✓
Robinul-Neostigmine®			✓
15.1.7 Antagonists for central and respiratory depression			
Doxapram hydrochloride			✓
Flumazenil			✓
Naloxone hydrochloride			✓

Chapter/Section/Drug		Primary Care CHPs	Primary Care Specialist	Acute Services
15.1.8	*Drugs for malignant hyperthermia*			
	Dantrolene sodium			✓
15.2	**Local anaesthesia**			
	Lidocaine [Lignocaine] HCl			✓
	Lidocaine [Lignocaine] and Epinephrine [Adrenaline]	✓		✓
	Lidocaine [Lignocaine] and Prilocaine (Emla®)	✓		✓
	Bupivacaine HCl			✓
	Bupivacaine and Glucose			✓
	Bupivacaine and Epinephrine [Adrenaline]			✓
	Bupivacaine and Fentanyl			✓
	Levobupivacaine			✓
	Prilocaine HCl			✓
	Ropivacaine HCl			✓
	Tetracaine [Amethocaine]			✓

Appendix 1

Changes In The Names Of Medicines

The following list shows those substances in common use for which the BAN has changed to the rINN. A complete list of name changes is available at www.mhra.gov.uk.

Former BAN	New BAN (riNN)
Acrosoxacin	Rosoxacin
Amethocaine	Tetracaine
Amoxycillin	Amoxicillin
Amylobarbitone	Amobarbital
Amylobarbitone sodium	Amobarbital sodium
Beclomethasone	Beclometasone
Bendrofluazide	Bendroflumethiazide
Benorylate	Benorilate
Benzhexol	Trihexyphenidyl
Benztropine	Benzatropine
Busulphan	Busulfan
Butobarbitone	Butobarbital
Carticaine	Articaine
Cephalexin	Cefalexin
Cephamandole Nafate	Cefamandole Nafate
Cephazolin	Cefazolin
Cephradine	Cefradine
Chloral betaine	Cloral betaine
Chlorbutol	Chlorobutanol
Chlormethiazole	Clomethiazole
Chlorpheniramine	Chlorphenamine
Chlorthalidone	Chlortalidone
Cholecalciferol	Colecalciferol
Cholestyramine	Colestyramine
Clomiphene	Clomifene
Colistin Sulphomethate Sodium	Colistimethate Sodium
Corticotrophin	Corticotropin
Cyclosporin	Ciclosporin
Cysteamine	Mercaptamine
Danthron	Dantron
Desoxymethasone	Desoximetasone
Dexamphetamine	Dexamfetamine

Appendix 1

Former BAN	New BAN (riNN)
Dibromopropamidine	Dibrompropamidine
Dicyclomine	Dicycloverine
Dienoestrol	Dienestrol
Dimethicone(s)	Dimeticone
Dimethyl sulphoxide	Dimethyl sulfoxide
Dothiepin	Dosulepin
Doxycycline Hydrochloride (Hemihydrate Hemiethanolate)	Doxycycline Hyclate
Eformoterol	Formoterol
Ethamsylate	Etamsylate
Ethinyloestradiol	Ethinylestradiol
Ethynodiol	Etynodiol
Flumethasone	Flumetasone
Flupenthixol	Flupentixol
Flurandrenolone	Fludroxycortide
Frusemide	Furosemide
Gestronol	Gestonorone
Guaiphenesin	Guaifenesin
Hexachlorophane	Hexachlorophene
Hexamine Hippurate	Methenamine Hippurate
Hydroxyurea	Hydroxycarbamide
Indomethacin	Indometacin
Lignocaine	Lidocaine
Lysuride	Lisuride
Methimazole	Thiamazole
Methotrimeprazine	Levomepromazine
Methyl Cysteine	Mecysteine
Methylene Blue	Methylthioninium Chloride
Mitozantrone	Mitoxantrone
Mustine	Chlormethine
Nicoumalone	Acenocoumarol
Oestradiol	Estradiol
Oestriol	Estriol
Oestrone	Estrone
Oxpentifylline	Pentoxifylline
Phenobarbitone	Phenobarbital

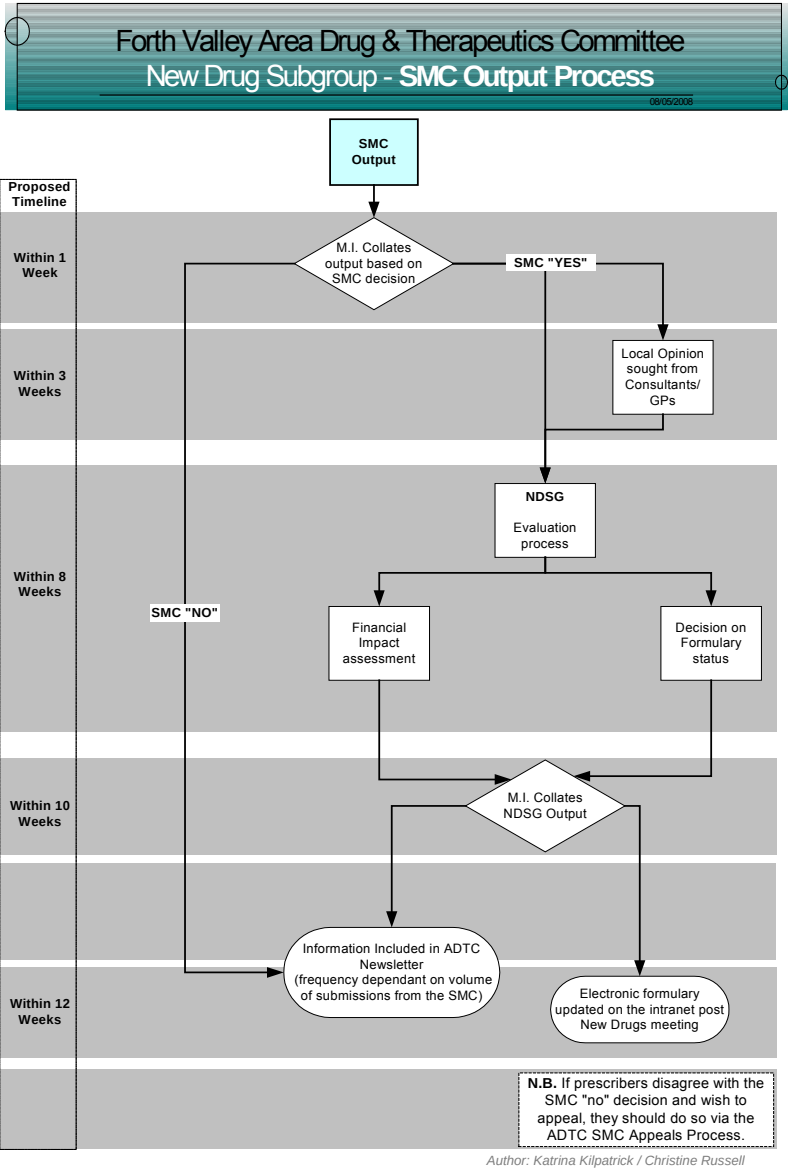
Appendix 1

Former BAN	New BAN (riNN)
Pipothiazine	Pipotiazine
Polyhexanide	Polihexanide
Potassium Clorazepate	Dipotassium Clorazepate
Pramoxine	Pramocaine
Procaine Penicillin	Procaine Benzylpenicillin
Prothionamide	Protionamide
Quinalbarbitone	Secobarbital
Riboflavine	Riboflavin
Salcatonin	Calcitonin (salmon)
Sodium Calciumedetate	Sodium Calcium Edetate
Sodium Cromoglycate	Sodium Cromoglicate
Sodium Ironedetate	Sodium Feredetate
Sodium Picosulphate	Sodium Picosulfate
Sorbitan Monostearate	Sorbitan Stearate
Stibocaptate Sodium	Stibocaptate
Stilboestrol	Diethylstilbestrol
Sulphacetamide	Sulfacetamide
Sulphadiazine	Sulfadiazine
Sulphamethoxazole	Sulfamethoxazole
Sulphapyridine	Sulfapyridine
Sulphasalazine	Sulfasalazine
Sulphathiazole	Sulfathiazole
Sulphinpyrazone	Sulfinpyrazone
Tetracosactrin	Tetracosactide
Thiabendazole	Tiabendazole
Thioguanine	Tioguanine
Thiopentone	Thiopental
Thymoxamine	Moxisylyte
Thyroxine Sodium	Levothyroxine Sodium
Tribavirin	Ribavirin
Trimeprazine	Alimemazine
Urofollitrophin	Urofollitropin

Lead:Heather Wilson

Appendix 2

New Drug Subgroup – SMC Output Process Flowchart



Author: Katrina Kilpatrick / Christine Russell

Appendix 3

FORTH VALLEY ACUTE HOSPITALS	WS-S-712 Issue Date:Mar04
PHARMACY SERVICES	Review Date:Oct 2010
REQUEST FOR A NON-FORMULARY DRUG	

This form should be completed by the PRESCRIBER for initiation of a non-formulary drug if the drug is prescribed for this patient for the first time in this hospital. The form should then be forwarded to the responsible CONSULTANT for counter signature. The completed form should then be returned to the ward pharmacist who will file it in the pharmacy department.

Part A: Patient Details	
Patient Name/Details:	Reason for admission:
	Consultant:
Ward:	Clinical pharmacist:

Part B : Drug Details		
Name(generic and proprietary):		
Form:	Strength:	Dose:
Indication:		

Part C : Reason Formulary Product is not suitable
No equivalent Drug:
No equivalent Form of Administration:
More Effective:
Less Side Effects, Specifically…….
Other:

Prescriber (printed):…….
Signature:……Date:……
Consultant (printed):…….
Signature:……Date:……

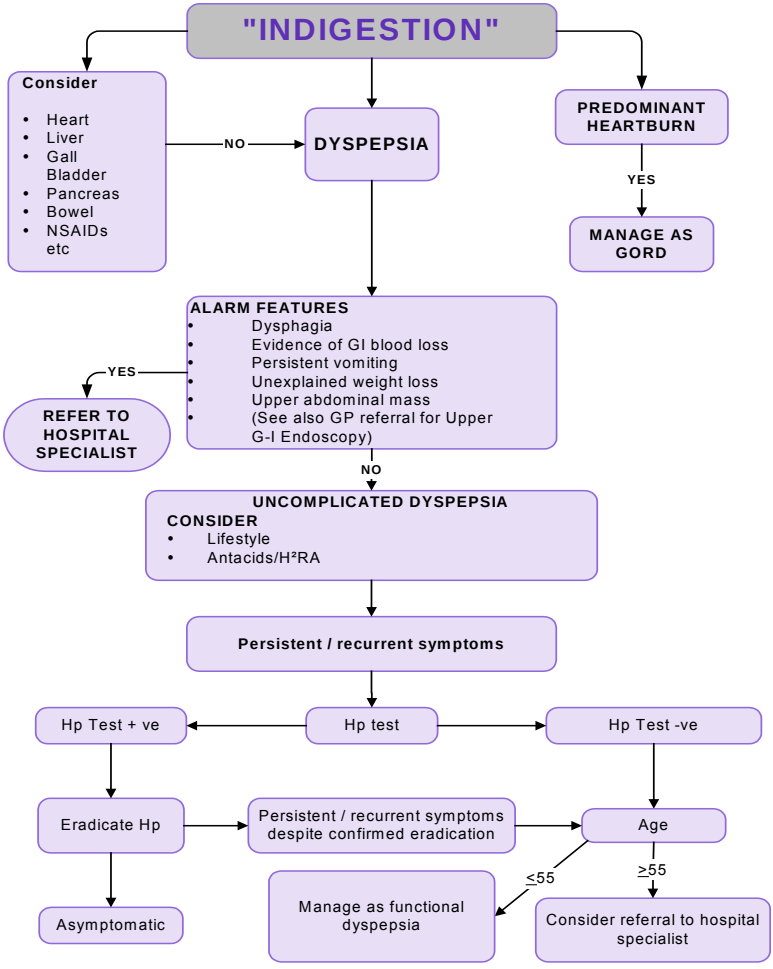
Part D: Pharmacy Use
Price (include VAT) - per packsize: - per daily dose
Comment:
Clinical Pharmacist (printed):
Signature:

File:Druginfo:Mastdoc:non formulary form *Pharmacist Lead: Gail Healey*

Appendix 4

Treatment Algorithm for Dyspepsia Guidance

This algorithm should be used in conjunction with written guidance. Forth Valley Guidelines on management of patients with Dyspepsia and GORD are available at http://intranet.fv.scot.nhs.uk/home/Depts/PrimaryPharmacy/Pharm_Clinical_Documentation/pharm_clin_doc.asp



**If a patient is causing concern but does not fit into this treament algorithm, or further advice is necessary, please contact on call gastroenterologist of the week (0:900 to 17:00 Mon-Fri) via the GI unit secretaries.

Pharmacist Lead:Pauline Morrison

Appendix 5

Forth Valley Acute Hospitals Services

Guidelines For The Prevention Of Constipation In Adults

Reassure

Determine normal pattern of bowel movements for individual.

Identify the cause

The following factors may be responsible for the development of constipation:

- poor diet/change in diet
- underlying disease e.g. hypothyroidism, hypercalcaemia
- change of environment
- immobility
- pregnancy

Medication review

The following drugs may exacerbate constipation. Where possible these drugs should be reviewed if constipation develops.

- Opioid analgesics
- Antacids containing aluminium
- Anticholinergics e.g. oxybutinin, procyclidine
- Antihistamines e.g. chlorpheniramine
- Calcium channel blockers e.g. verapamil
- Diuretics
- Iron salts
- Antidepressants and antipsychotics

Educate

Advise patient on the following:

- adequate dietary fibre intake e.g. Weetabix®, pulses, fruit - refer to Dietician if necessary
- adequate fluid intake - 8 to 10 cups per day
- increase mobility - refer to physiotherapist if necessary

If necessary - prescribe a laxative

Appendix 5

Forth Valley Acute Hospitals Services

Guidelines For The Management Of Constipation In Adults

	Mode of action	Preparation/Dose	Time to effect	Price per day(£)	Additional info.
Acute constipation Hard impaction	Osmotic	Micro-enema 1 at night	15-30mins	0.41	Step 1
	Osmotic	Phosphate enema 1 in the morning	15-30mins	0.46	Step 2
	Osmotic	Movicol 8 sachets in 1litre water over 6 hours		1.85	Elderly pts. Max 3 days therapy
	Stimulant	Sodium picosulphate (Picolax) Half to one sachet as required	3 hours	1.98	Stat dose to restore normal bowel function. Repeat as necessary
Soft impaction	Stimulant	Senna 2-4 tablets at night Max 3 times a week	8-12 hours	0.03-0.06	7 day course to restore normal bowel function
Chronic constipation	Bulk former	Fybogel 1 sachet twice a day	1 -2 days	0.14	Mix with 1/4 pint of water and take after meals. Avoid in immobile, chronically ill and disabled patients
	Stimulant	Senna 2-4 tablets at night Max 3 times a week	8-12 hours	0.03-0.06	Adjust to response.
	Osmotic	Movicol 1 sachet 2-3 times a day (elderly once daily)		0.47-0.70	Patients unable to tolerate Fybogel/senna Review after 2 weeks treatment. Can be continued in resistant cases. Maintenance dose: 1sachet per day or alternate days.
	Osmotic	Lactulose 10mls BD	24-48 hours	0.28	
Opioid-induced constipation	Softener and stimulant	Co-danthramer suspension 5-10ml at night	6-12 hours	0.19-0.38	Palliative care patients only
	Stimulant	Senna 2-4 tablets at night	8-12 hours	0.03-0.06	Non-palliative care patients

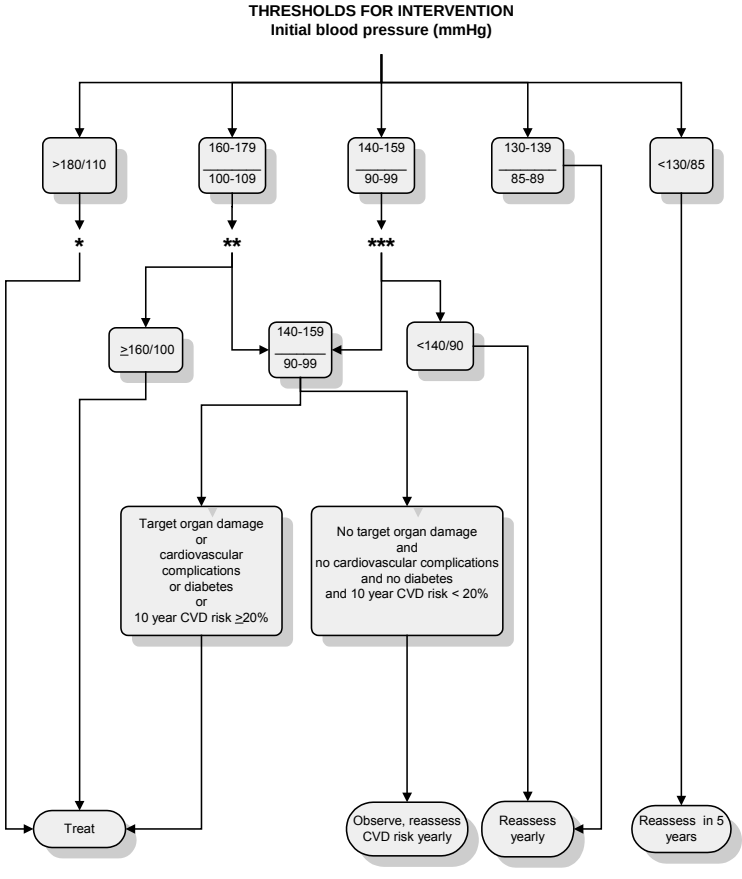
Refer to specialist in cases of chronic unresponsive constipation.

Pharmaicst Lead: Pauline Morrison

Appendix 6

Hypertension Guidelines Flowcharts

The following flowcharts and tables are from the Forth Valley Hypertension Guidelines. A full copy of the Guidelines is available on the Pharmacy Intranet pages at http://intranet.fv.scot.nhs.uk/home/Depts/PrimaryPharmacy/Pharm_Clinical_Documentation/pharm_clin_doc.asp



* Unless malignant phase of hypertensive emergency confirm over 1-2 weeks then treat.

** If cardiovascular complications, target organ damage or diabetes is present, confirm over 3-4 weeks then treat. If absent, re-measure weekly and treat if blood pressure persists at these levels over 4-12 weeks.

*** If cardiovascular complications, target organ damage or diabetes is present, confirm over 12 weeks then treat. If absent, re-measure monthly and treat if these levels are maintained and if estimated 10 year CVD risk is ≥20%.

If B.P. > 220/120 treat immediately.

Appendix 6

TARGET BLOOD PRESSURE

	Diabetic or CKD*	*Non-diabetic*
Optimal	<130/<80	<140/<85
Acceptable	<140/<80	<150/<90

- For Type 1 diabetes with nephropathy lower targets apply (120/70) and specialist care may be appropriate.
  CKD = Chronic Kidney Disease

Complications of Hypertension/Target Organ Damage

- Ischaemic heart disease
- Cerebrovascular disease
- Heart Failure.
- Peripheral Vascular Disease
- Fundal haemorrhages or exudates / papillodema
- Proteinuria
- Chronic renal failure

Appendix 6

Table 1: Choice of Treatment

Class of drug	*Compelling indications*	*Possible indications*	*Cautions*	*Compelling contraindications*
Alpha-blocker	Benign prostatic hypertrophy		Postural hypotension, heart failure[a]	Urinary incontinence
ACE Inhibitors	Heart failure, LV dysfunction, post MI or established CHD, type I diabetic nephropathy, 2° stroke prevention[e]	Chronic renal disease,[b] Type II diabetic nephropathy, proteinuric renal disease,atrial fibrillation;left ventricular hypertrophy	Renal impairment[b] PVD[c]	Pregnancy Renal artery stenosis[d]
ARBs	ACE inhibitor intolerance, type II diabetic nephropathy, hypertension with LVH, heart failure in ACE-intolerant patients, post MI	LV dysfunction post MI, atrial fibrillation; left ventricular hypertrophy intolerance of other antihypertensive drugs, proteinuric renal disease, heart failure[b]	Renal impairment[b] PVD[c]	Pregnancy Renal artery stenosis[d]
Beta-blockers	Myocardial infarction, Angina ; Heart failure[f]		Heart failure[f] PVD, diabetes (except with CHD);	Asthma, Heart block
CCBs (dihydropyridine) CCBs (rate limiting)	Elderly, Angina	Elderly, Angina ISH MI	- Combination with beta-blockade	- Heart block, heart failure
Thiazides/thiazide-like diuretics		Elderly, ISH, heart failure, 2° stroke prevention	Diabetes mellitus Esp when used in conjunction with B-blockers. Metabolic	Gout[g]

CCB = calcium channet blocker
ISH = isolated systolic hypertension
PVD = peripheral vascular disease
MI = myocardial infarction
LVH = left ventricular hypertrophy
ACE = angiotensin-converting enzyme
ARBs = angiotensin II receptor blockers

a. HF when used as monotherapy.

b. ACE inhibitors or ARBs may be beneficial in chronic renal failure but should only be used with caution, close supervision and specialist advice when there is established and significant renal impairment.

c. Caution with ACE inhibitors and ARBs in peripheral vascular disease because of association with renovascular disease.

d. ACE inhibitors and ARBs are sometimes used in patients with renovascular disease under specialist supervision.

e. In combination with a thiazide/thiazide-like diuretic.

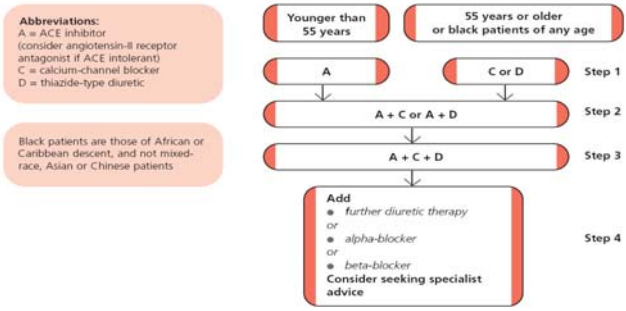
f. Beta blockers are increasingly being used to treat stable heart failure. However, beta blockers may worsen heart failure.

g. Thiazide and thiazide-like diuretics may sometimes be necessary to control BP in people with a history of gout, ideally used in combination with allopurinol.

When none of the special considerations listed in table 2 apply initial drug selection should follow step 1 of the A/CD algorithm

Appendix 6
BHS/NICE Guidance on medication choice

Choosing drugs for patients newly diagnosed with hypertension



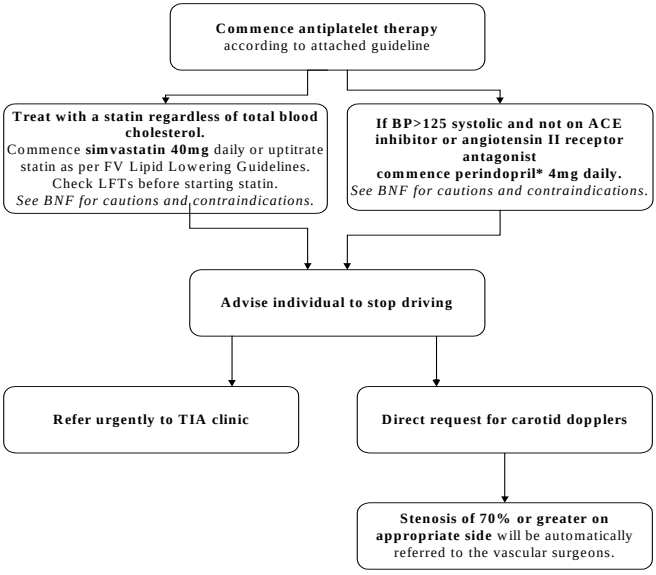
Beta-blockers

- Beta-blockers are no longer preferred as a routine initial therapy for hypertension.
- But consider them for younger people, particularly:
  - women of childbearing potential
  - patients with evidence of increased sympathetic drive
  - patients with intolerance of or contraindications to ACE inhibitors and angiotensin-II receptor antagonists.
- If a patient taking a beta-blocker needs a second drug, add a calcium-channel blocker rather than a thiazide-type diuretic, to reduce the patient's risk of developing diabetes.
- If a patient's blood pressure is not controlled by a regimen that includes a beta-blocker (that is, it is still above 140/90 mmHg), change their treatment by following the flow chart above.
- If a patient's blood pressure is well controlled (that is,140/90 mmHg or less) by a regimen that includes a beta-blocker, consider long-term management at their routine review. There is no absolute need to replace the beta-blocker in this case.
- When withdrawing a beta-blocker, step down the dose gradually.
- Beta-blockers should not usually be withdrawn if a patient has a compelling indication for being treated with one, such as symptomatic angina or a previous myocardial infarction.

Appendix 7

Referral Pathway for Acute Stroke/TIA- July 2006

Carotid Territory TIA Pathway



*2mg should be initiated where an individual may have a strongly activated reninangiotensin system e.g. renovascular hypertension, salt or volume depletion, cardiac decompensation or severe hypertension.

Appendix 7

GUIDELINE FOR ANTIPLATELET THERAPY AFTER CEREBRAL INFARCTION OR TIA

Following recent publication of new evidence[1] supporting the combination of aspirin and dipyridamole in cerebral infarction, the Forth Valley guidance for antiplatelet therapy following cerebral infarction or TIA has been updated as follows.

Where there is no definite contraindication, first line choice is

a combination of aspirin and dipyridamole
See BNF for contraindications and cautions.

Aspirin

Where patients have not been taking aspirin regularly, this should be given as

- initial **300mg loading dose** followed by
- **75mg daily aspirin dispersible daily**

Dipyridamole

Dipyridamole should be given as a modified release preparation.

- **Persantin retard® 200mg twice daily**

Dipyridamole may be contraindicated in patients with clinically significant ischaemic heart disease as it can exacerbate angina (it is used in myocardial perfusion stress tests).

For patients who are already on aspirin at the time of their event dipyridamole should be added.

There is no evidence that dipyridamole alone is an effective single agent in stroke.

Where aspirin is contraindicated or the combination of aspirin/dipyridamole is not preventing cerebrovascular ischaemic events, **clopidogrel** can be instituted as a single agent. **A loading dose of clopidogrel 300mg is followed by 75mg daily**.

There is no benefit from an aspirin/clopidogrel combination compared to clopidogrel alone for the prevention of ischaemic stroke and may actually increase the risk of haemorrhagic stroke. Similarly there is no current evidence supporting the use of clopidogrel and dipyridamole in combination.

1. The Lancet, 367, 1665, Referral Pathway for Acute Stroke/TIA July 2006

Lead Dr. R. Lenton & Dr. S. Grant

Appendix 8

FORTH VALLEY USE OF CLOPIDOGREL IN CARDIOVASCULAR DISEASE GUIDELINE APRIL 2008

This guideline applies to people over 16 years of age. This guideline is not intended to serve as a standard of medical care or be applicable in every situation. Decisions regarding the treatment of individual patients must be made by the clinician in light of that patient's presenting clinical condition and with reference to current good medical practice.

Date	April 2008
Date of Review	April 2010
Author	J Spratt

Stirling Royal Infirmary
Livilands
Stirling
FK8 2AU
Tel. (01786) 434000

Appendix 8

Acute Coronary Syndromes (ACS)

Dynamic ST segment change on ECG and/or raised Troponin and including Non ST segment Elevation MI [NSTEMI]

ACS +/- angiography/PCI +/- any stent

- Clopidogrel 300mg single loading dose (in hospital)
- Continue on clopidogrel 75mg od for 12 months[1]

ACS - ST Elevation Myocardial Infarction (STEMI)

STEMI +/- angiography/PCI

- Clopidogrel 600mg single loading dose (in hospital)
- Continue on clopidogrel 75mg od for the following durations
  - Conservatively treated[2] patients – 12 months
  - Bare Metal Stent - 3 months
  - Drug Eluting Stent - At least 12 months

Stable Coronary Artery Disease (stable angina)

Clopidogrel is not indicated in the absence of coronary artery stenting except in cases of proven aspirin hypersensitivity or severe low-dose aspirin dyspepsia – see below.

Stable angina +PCI + Bare Metal Stent

- Pre-treat with clopidogrel 75mg od for at least 5 days (supplied via pre-admission clinic)
- Continue on clopidogrel 75mg od for 3 months

Stable angina +PCI + Drug Eluting Stent

- Pre-treat with clopidogrel 75mg od for at least 5 days (supplied via pre-admission clinic)
- Continue for at least 12 months

[1] Consideration should be given to a 600mg loading dose if urgent transfer for coronary angiography is being considered.

[2] Patients where urgent transfer for revascularisation is not being considered

NOTE: All of the above patients should be prescribed aspirin 75mg lifelong.

Aspirin Hypersensitivity

In patients where there is a history of proven aspirin hypersensitivity or severe dyspepsia induced by aspirin 75mg, aspirin should be replaced by clopidogrel.

In cases of mild/moderate dyspepsia addition of a proton pump inhibitor (PPI) to aspirin 75mg is recommended. Current PPI formulary choices are lansoprazole and omeprazole.

Stop Dates

The Primary Care Prescribing Group recommends that all practices have a procedure in place to clearly identify stop dates at the end of a recommended duration of treatment. It is important to appreciate that indefinate dual anti-platelet therapy will have been recommended in some cases.

References 1. Sabatine et al, N Engl J Med. 2005 Mar 24;352(12):1179-89 2. Muller I, Seyfarth M, Rudiger S, et al: Effect of a high loading dose of clopidogrel on platelet function in patients undergoing coronary stent placement. Heart 85:92, 2001. 3. Neumann FJ, Kastrati A, Pogatsa-Murray G, et al: Evaluation of prolonged antithrombotic pretreatment ("cooling-off" strategy) before intervention in patients with unstable coronary syndromes: A randomized controlled trial. JAMA 290:1593, 2003.4. Neumann F: Intracoronary Stenting and Antithrombotic Regimen Rapid Early Action for Coronary Treatment (ISAR REACT). In: American College of Cardiology Scientific Sessions; 2003.

Appendix 9

Forth Valley Lipid Lowering Guidelines v3 May 2008

This guideline applies to people over 16 years of age. This guideline is not intended to serve as a standard of medical care or be applicable in every situation. Decisions regarding the treatment of individual patients must be made by the clinician in light of that patient's presenting clinical condition and with reference to current good medical practice.

Date May 2008
Date of Review May 2010
Author L Cruickshank

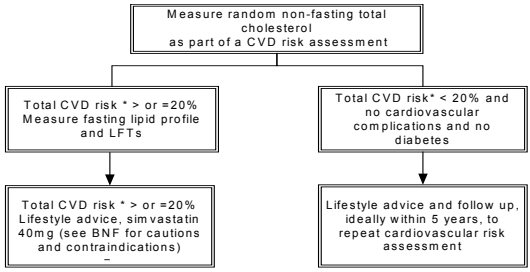
Falkirk Community Health Partnership
Acute Services Headquarters
Westburn Avenue
Falkirk FK1 5SD
Tel. (01324) 614651

Appendix 9

PRIMARY PREVENTION OF CARDIOVASCULAR DISEASE

SIGN 97 recommends that the following individulas should have their cholesterol measured as part of an assessment of cardiovascular risk at least every 5 years

- All adults aged 40 years or above
- Individuals of any age with a first degree relative who has pre-mature (men <55 years, women <65 years) atherosclerotic CVD or familial dyslipidaemia
- Certain individuals are considered as high risk and should be treated regardless of initial cholesterol level – Page 5



Consider secondary and familial hyperlipidaemia if cholesterol > 8.0mmol/L. Discuss with lipid clinic if in doubt.

PREVENTION OF ATHEROSCLEROTIC ARTERIAL DISEASE REQUIRES CONTROL OF ALL RISK FACTORS. NO SINGLE RISK FACTOR, INCLUDING CHOLESTEROL, SHOULD BE VIEWED IN ISOLATION.

- All other risk factors (e.g. smoking, hypertension, diabetic control) should be addressed.
- Dietary and other lifestyle advice (e.g. alcohol, obesity, physical activity) should be given.

ASSESSMENT TOOL

While there is agreement between guidelines from the Joint British Societies, SIGN and NICE that intervention for primary prevention should take place when there is an estimated 10 year Cardiovascular risk of ≥ 20% there is currently no agreement on the risk assessment tool that should be used.

The Joint British Societies advice from December 2005 recommends the Framingham based assessment that appears in the charts at the back of the BNF. This is based on event rates in a predominantly white US community in the 70s and does not consider factors such as obesity, family history and social status. Because of this and with declining CHD rates this assessment tool overestimates risk in low and medium risk groups and underestimates risk for other groups. However, the most recent NICE guidance (May 2008) recommends continued use of this assessment tool until further evaluation of ASSIGN and QRISK has been completed.

Appendix 9

SIGN guideline 97, "Risk estimation and the prevention of cardiovascular disease", from February 2007 recommends the ASSIGN (**AS**sessing CV risk using **SIGN** guidelines). ASSIGN is based on the Scottish Heart Health Extended Cohort and MONICA study (Total study population approximately 18,000). These both comprise a largely West of Scotland population. ASSIGN includes family history and social deprivation (Scottish Index of Multiple Deprivation). ASSIGN will be the recommended assessment tool in the forthcoming revised CHD strategy for Scotland.

NICE has recently recommended QRISK. This is based on the QRESEARCH database – 1.28 million patients aged 35-74 from 318 UK practices enrolled between 1.1.95 and 1.4.07 and free of diabetes and existing CV disease at entry. Weighted factors are –

- Age
- Sex
- Smoking Status
- Systolic BP
- TC/HDL ratio
- BMI
- FH 1st degree relative <60
- Area measure of deprivation
- Existing Rx for hypertension

Developers of QRISK estimate that Framingham over-predicts 10 year CVD risk by 35%, ASSIGN by 36% and QRISK by 0.4%.
(BMJ,doi:10.1136/bmj.39261.471806.55**)**

An electronic version of the QRISK assessment tool is available at
http://www.qrisk.org/CalculateRisk_Step1.aspx

NICE have recommended further evaluation before adoption of QRISK.

TREATMENT FOR PRIMARY PREVENTION

The 2006 FV lipid-lowering guideline followed the 2005 Joint British Societies' guidance that primary prevention should be as aggressively treated as secondary prevention with the same treatment algorithm and targets.

This guidance has subsequently been widely criticized as lacking an evidence-base and not being cost-effective. SIGN and NICE both recommend a "treat and forget" approach to primary prevention rather than a "treat to target" approach. This involves prescribing a standard dose of a statin to those at risk without further testing or dose adjustment, ie **no** target cholesterol level. This follows the evidence, as none of the large statin trials used a treat to target strategy.

SIGN recommends use of simvastatin 40mg, NICE recommends use of a statin with low acquisition cost.

Recommended treatment for primary prevention in Forth Valley in the absence of contra-indications or adverse effects is –

SIMVASTATIN 40mg daily*

* See BNF for cautions and contraindications.

Statins should be used with caution in those with a history of liver disease or with a high alcohol intake. Use should be avoided in active liver disease. Liver Function

Appendix 9

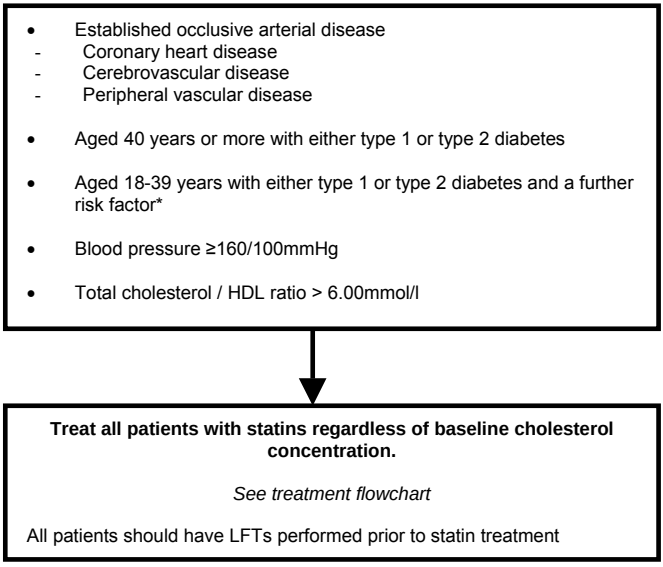
Tests should be performed before starting simvastatin, 2 months after initiation and yearly thereafter.

See also later sections on –

- Cytochrome P450 interactions
- Liver Function Tests
- Myopathy and rhabdomyolysis

SECONDARY PREVENTION OF HIGH RISK CASES

The following patients should be regarded as at high risk and treated with a statin, **regardless** of total blood cholesterol.



*Further risk factors

- Retinopathy (preproliferative, proliferative, maculopathy)
- Nephropathy, including persistent microalbuminuria
- Poor glycaemic control (HbA1c>9%)
- Elevated blood pressure requiring antihypertensive therapy
- Raised total cholesterol (≥6.00 mmol/l)
- Features of metabolic syndrome (central obesity; fasting triglycerides >1.7 mmol/l [non-fasting >2.0 mmol/l] and/or HDL cholesterol <1.0 mmol/l in men or <1.2 mmol/l in women; impaired glucose tolerance).
- Family history of premature CVD in a first degree relative.

Appendix 9

ATHEROSCLEROTIC ARTERIAL DISEASE IS OF MULTIFACTORIAL ORIGIN. NO SINGLE RISK FACTOR, INCLUDING CHOLESTEROL CONCENTRATION, SHOULD BE VIEWED IN ISOLATION.

- Encourage smoking cessation with structured support
- All other risk factors hypertension, diabetic control, should be addressed (see separate guidelines)
- An antiplatelet agent (see separate guideline) should be taken by all those with occlusive arterial disease in the absence of contraindications (active peptic ulceration, a bleeding disorder, or true hypersensitivity)
- Treat with ACE-inhibitors unless contraindicated
- Consider β-blockers, and ensure attendance at a rehabilitation programme, for patients after MI
- Dietary and other lifestyle advice e.g. alcohol, obesity, physical activity, should be given.

GOALS OF TREATMENT

For secondary prevention the following target is recommended.

Total cholesterol concentration <4.00mmol/l

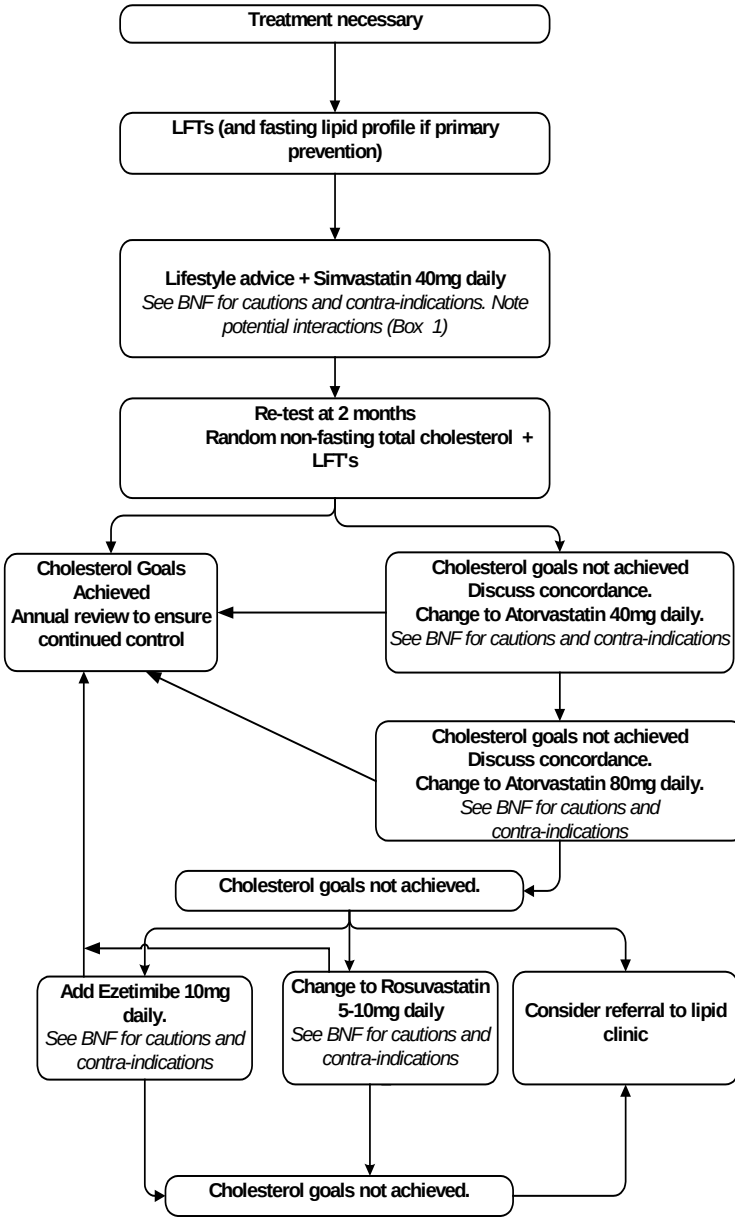
or

25% reduction in total cholesterol

whichever results in the lowest absolute level.

Appendix 9

SECONDARY PREVENTION TREATMENT FLOWCHART



Appendix 9

Cytochrome P450 Interactions

Simvastatin and atorvastatin are metabolized by cytochrome P450 CYP3A4 and co-administration of potent inhibitors of this enzyme increases the risk of side effects including rhabdomyolysis. The Medicines and Healthcare products Regulatory Agency (Previously Committee on Safety of Medicines) released updated advice in January 2008.

Interacting drug or food	Simvastatin prescribing advice	Atorvastatin prescribing advice
Potent CYP3A4 inhibitors, including itraconazole, ketoconazole, erythromycin, clarithromycin, telithromycin and HIV protease inhibitors	All are contraindicated with simvastatin	Avoid if possible: consider temporary suspension of atorvastatin if interacting drug is taken for short period. **Itraconazole:** do not exceed 40mg atorvastatin daily **Clarithromycin:** do not exceed 20mg atorvastatin daily **HIV protease inhibitors:** monitor lipid levels to ensure lowest necessary dose of atorvastatin is used
Ciclosporin*	Do not exceed 10mg simvastatin daily	Do not exceed 10mg atorvastatin daily
Danazol	Do not exceed 10mg simvastatin daily	No restriction in Summary of Product Characteristics
Verapamil, amiodarone	Do not exceed 20mg simvastatin daily	Monitor lipid levels to ensure lowest necessary dose of atorvastatin is used
Diltiazem	Do not exceed 40mg simvastatin daily	Monitor lipid levels to ensure lowest necessary dose of atorvastatin is used
Grapefruit juice	Avoid grapefruit juice	Limit intake of grapefruit juice to very small quantities (or avoid altogether)
Warfarin/courmarins+	Monitor INR before starting treatment and regularly during treatment, especially with dose changes	Monitor INR before starting treatment and regularly during treatment, especially with dose changes
Fibrates+	Increased risk of myopathy when used with fibrates; do not exceed 10mg simvastatin daily (except with fenofibrate); gemfibrozil increases systemic exposure to simvastatin	Increased risk of myopathy when used with fibrates; gemfibrozil increases systemic exposure to atorvastatin
Ezetemibe+	Additive risk of myopathy cannot be ruled out	Additive risk of myopathy cannot be ruled out

***Ciclosporin** – Ciclosporin interacts with all statins and is contraindicated with rosuvastatin.

+ Important interactions to consider with all statins

- **Warfarin/ Coumarins**

Statins may affect coumarin anticoagulation and increase the frequency of haemmorhagic events. Patients who are receiving warfarin should have INR monitoring before starting statin therapy and regularly throughout treatment, especially with statin dose changes. For pravastatin, which is not metabolized by cytochrome P450, warfarin interaction is less of a concern.

Appendix 9

- **Fibrates**
  The use of fibrates alone is associated with myopathy; use with statins may increase this risk. Furthermore, gemfibrozil increases systemic exposure to simvastin, atorvastatin and rosuvastatin. Careful monitoring is therefore needed, and maximum dose of simvastatin is 10mg daily when used with a fibrates (except fenofibrate). For rosuvastatin, start with 5mg and do not exceed 20mg daily. **The routine use of additional lipid-lowering treatment with fibrates is not recommended without specialist advice.**

- **Ezetemibe**
  Ezetemibe has no pharmacokinetic interaction with statins. However, ezetemibe alone is associated with a risk of myopthy and an additive risk with statins cannot be ruled out.

The FV antimicrobial guideline gives further advice on alternatives to macrolide antibiotics for various clinical indications. If an interacting drug, which would result in MHRA advice to avoid simvastatin/atorvastatin is deemed essential, an assessment should be made of the individual's immediate cardiac risk. The PRISM trial suggests that stopping a statin in those suffering an acute coronary syndrome is associated with a significantly increased risk of death and non-fatal myocardial infarction within the first 30 days. In case of doubt seek specialist advice.

Starting Dose – If co-prescription with a drug that increases systematic exposure to statins is unavoidable it is particularly important to start on the lowest statin dose. For simvastatin and atorvastatin this is 10mg daily.

Liver Function Tests (LFTs)

Statins should be used with caution in those with a history of liver disease or with a high alcohol intake. Use should be avoided in active liver disease. LFTs should be performed before starting a statin and 2 months after initiation or dose change and yearly thereafter.

If transaminase concentrations reach 3 times the upper limit of normal, levels should be rechecked after a minimum 2 week period (a large percentage will return to normal with no intervention). If still elevated, reduce or stop statin. When transaminases return to normal a statin from a different class may be tried i.e. rosuvastatin (hydrophilc) if previously on simvastatin/atorvastatin (lipophilic).

Myopathy and Rhabdomyolysis

Myopathy and rhabdomyolysis are rare but clinically important adverse effects of statins. The exact mechanism by which statins cause rhabdomyolysis remains unclear, but the risk appears to be dose related. Risk factors include:

- Underlying muscle disorders, renal impairment, untreated hypothyroidism, alcohol abuse and age >70 years.
- Concomitant use of other lipid lowering agents i.e. gemfibrozil, fenofibrate, other fibrates or nicotinic acid.
- A history of myopathy with any lipid-lowering treatment.
- Interactions (e.g. drugs inhibiting cytochrome P450 CYP3A4) see table above.

Prescribers are reminded of the need to adjust doses of statins in accordance with the recommendations of each Summary of Product Characteristics.

Appendix 9

Patients receiving any statin should be asked to report muscle pain, weakness or cramps immediately. If symptoms are severe or if creatine kinase is greater than 5 times the upper limit of normal, treatment should be withheld.

Rosuvastatin

Rosuvastatin is not associated with cytochrome P450 interactions. Ciclosporin is contraindicated with rosuvastatin. HIV protease inhibitors strongly increase exposure to rosuvastatin through an unknown mechanism and are not recommended for combined use. Antacids reduce rosuvastain plasma levels.

All patients must start as an initial dose of **no more than 10mg** rosuvastatin once daily and should only be titrated to 20mg if considered necessary after a 4-week trial of 10mg daily. A 5mg initial dose should be used for the elderly and those of asian descent.

The 40mg dose is contraindicated in patients with predisposing risk factors for muscular toxicity and specialist supervision is recommended if the 40mg dose is initiated.

Fibrates

Fibrates act mainly by decreasing serum triglycerides; they have variable effects on cholesterol. All can cause a myositis-like syndrome, especially in those with impaired renal function. Combining a fibrate with a statin increases the risk of muscle effects (especially rhabdomyolysis) and should be used with caution and after specialist advice. Bezafibrate and fenofibrate are current FV formulary choice fibrates.

The routine use of additional lipid-lowering treatment with fibrates, resins or niacin is not recommended without specialist advice.

Acute Coronary Syndrome

All patients suffering acute coronary syndrome in Forth Valley, who have no contraindication, will be commenced on or changed to atorvastatin 80mg daily whilst an inpatient. However, up to 1 in 3 patients may not tolerate initiation at this dose.
Please note: there is not evidence to recommend changing all those with previous acute coronary syndrome to atorvastatin 80mg daily. Initiation of this dose without following the treatment flowchart should only be at the time of acute coronary syndrome.

Intolerance of higher dose atorvastatin

For those not tolerating higher dose atorvastatin, two possible pathways are suggested.

- Reduce atorvastatin to maximum tolerated dose and add ezetemibe, if required to attain target.

Or

- Substitute rosuvastatin for atorvastatin. All patients must start on an initial dose of **no more than 10mg** rosuvastatin daily (See above).

Secondary prevention and high risk individuals already on a statin

For those currently treated as high risk (see page 5) or for secondary prevention and achieving recommended targets on low dose or non formulary statins no change to treatment is recommended. Those not treated to recommended targets should be treated as per the treatment flowchart.

Appendix 10

Pharmacy Services

Guidance on Issuing Steroid Cards

This advice has been produced by the Forth Valley Airways Group

Inhaled Steroids

Steroid Cards should be issued to the following patients[1,2,3]

	Inhaled Steroid	Threshold Dose (per day)
Adults	Beclometasone	Dose > 1000mcg[4]
	Budesonide	Dose > 800mcg[4]
	Fluticasone	Dose > 500mcg[4]
	Mometasone *(Non – Formulary)*	Dose > 800mcg[4]
	Ciclesonide *(Non – Formulary)*	Dose > 320mcg[4] **Unlicensed dose**
Children	Beclometasone	Dose > 400mcg[1] (age not stated)
	Budesonide	Dose > 800mcg[1] (12 years and under)
	Fluticasone	Dose > 400mcg[1] (4-16 years)
	Mometasone *(Non – Formulary)*	Dose > 800mcg[1] (12-16 years)
	Ciclesonide *(Non – Formulary)*	Dose > 320mcg[4] (12-16 years) **Unlicensed dose**

Systemic Steroids

Steroid Cards should be issued to the following patients[1,2,3]

Adults

- Receiving repeated courses, 2-3 courses per year (particularly if taken for longer than 3 weeks)
- Taking a short course within 1 year of stopping long-term therapy
- Receiving more than 40mg prednisolone daily (or equivalent)
- Receiving repeated doses in the evening
- Receiving more than 3 weeks treatment
- Patients with other possible causes of adrenal suppression

Children

- As above except[5]:
  - Receiving more than 20mg prednisolone daily for children < 5 years
  - Receiving more than 30mg prednisolone daily for children > 5 years

These patients are at risk of disease relapse and/or hypoadrenalism if treatment is withdrawn rapidly[2]

Chemotherapy Patients – Acute Pharmacy Services

Pharmacists providing clinical check on chemotherapy prescriptions will endorse any prescription that requires a steroid card to be given

References:*1. CSM. Current problem in pharmacovigilance. May 2006; 31:5 2. Scottish Executive. Steroid treatment cards. SEHD/CMO (2006) 10. 26th July 2006 3. BNF 52. BMJ/RPS. September 2006 4. GINA Guideline 2006 5. Personal correspondance. Dr. McFadyen. Consultant Paediatrician. Stirling Royal Infirmary. 27.10.2006. Lead Pharmacsit Clare Colligan*

Appendix 11

Primary Care Services

Primary Care Drug & Therapeutics

Emergency Sedation Prescribing Guidelines

This guidance should be used in combination with Algorithm 2 for Adult Mental Health, Algorithm 3 for Elderly Services and Algorithm 4 for Learning Disabilities.

Aims: To quickly calm the patient to reduce psychological suffering.

To reduce the risk of imminent violence for the patient and others

The aim is not to induce sleep or unconsciousness

Good Practice Points:

- Obtain as much of the patient's history, including diagnosis, before medication is prescribed.
- Always explore non-pharmacological interventions first. The patient should only be treated with medication (algorithm 2, 3 & 4) after a risk assessment establishes that the risk of not doing so is greater than the risk of acute pharmacological treatment.
- If unknown or no history of antipsychotic medication, review physical health status and current medication. Consider age, weight, presence of cardiac & respiratory disease. Also consider any benzodiazepines and illicit substances recently taken.
- If recent history or existing cardiac disease, use benzodiazepines alone. Also consider current medication likely to affect ECG e.g. tricyclics
- Avoid *clopixol acuphase*® in neuroleptic naïve patients and use with caution in struggling patients.
- Caution in patients on clozapine
- Haloperidol has been reported to cause QT-interval prolongation. A baseline ECG is recommended before treatment with haloperidol begins. If not possible, proceed with caution.
- Lorazepam: use weight to calculate intramuscular dose whenever possible. 0.025 – 0.03mg/kg For an average 70kg man: 1.75 – 2.1mg. Caution in renal and hepatic impairment and the elderly.
- Antipsychotic polypharmacy should be avoided where possible.
- Refer to High Dose Guidelines, if 24 hour dose of antipsychotic exceeds 100%
- Use zuclopenthixol acetate with caution, only when other measures have failed as indicated on algorithm 2.
- If in any doubt, seek advice from the consultant psychiatrist.

Appendix 11

- Continue to review physical and mental health status, during first 24 hours as agreed with the clinical team and record progress.
- Review patient daily including 'as required' medication and record progress.
- If patient detained under the Mental Health Act and Form T2 or T3 applicable, consult Form T2 or T3 treatment plan and utilise Form T4 if appropriate.

Monitoring Parameters:

- Whenever possible, check FBC, U+E's, LFT's and QTC. Seek advice if these are abnormal.
- Monitor pulse, respiration and temperature every 5 minutes for 1 hour after injections are administered. Measure blood pressure 30 & 60 minutes after each injection. This monitoring (or alternative as determined by the clinical team) must be performed and recorded in patient notes.

Management Problems:

- Procyclidine 5-10mg can be given intramuscularly for acute dystonia. Repeat after 20 minutes if necessary. Maximum dose: 20mg daily. Lower doses may be advisable in the elderly.
- Flumazenil should be given if respiratory rate drops below 10/min due to lorazepam administration (caution in elderly). Give 200microgram IV over 15 seconds. If desired level of consciousness is not obtained within 60 seconds, a further 100microgram can be administered and repeated at 60 second intervals to a maximum total dose of 1mg (1000microgram) in 24 hours (initial + 8 additional doses). Monitor respiration rate continuously until it returns to baseline. **NB**. Effect of flumazenil may wear off and respiratory depression return – monitoring must continue beyond initial recovery of respiration.

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3. The National Audit of The Prescribing of Anti-psychotic Medication 1998

4. The Maudsley Prescribing Guidelines, 6th Edition, 2001, 38

5. Atakan Z, Davies T. ABC of Mental Health emergencies BMJ 1997; 314: 1740-42

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Appendix 12

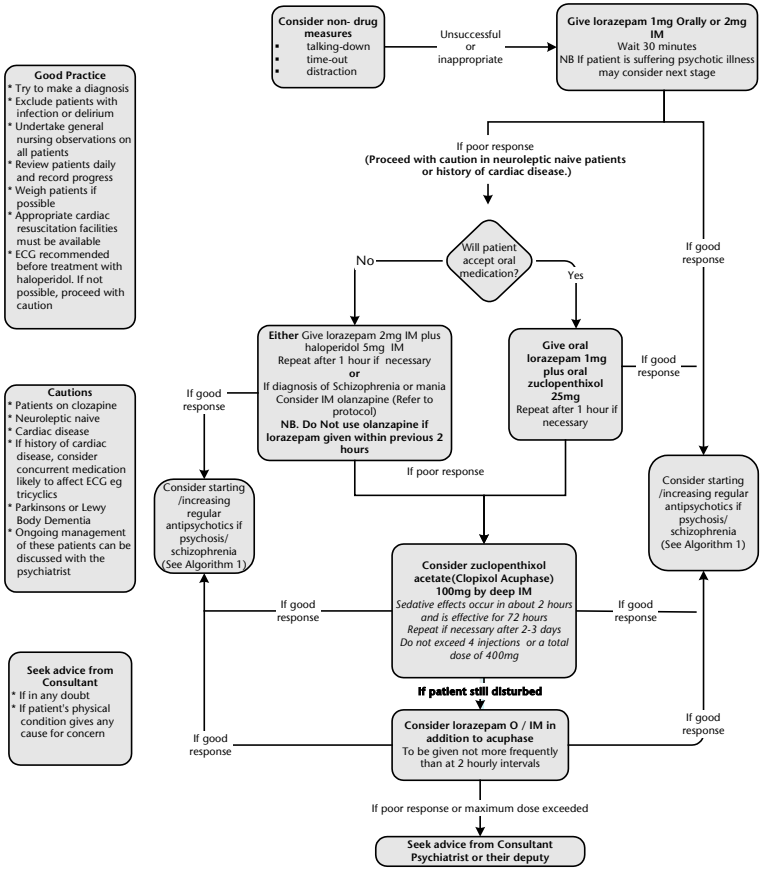
Algorithm 2 Emergency Sedation

Forth Valley Primary Care Services

Algorithm 2 - Emergency Sedation : Adult Mental Health

Please use this algorithm along with the Prescribing Guidelines.

Emergency sedation is broadly defined as the giving of psychotropic medication to control disturbed behaviour. This is a description of good practice but is not intended to be construed or to serve as a standard of medical care. The psychiatrist will make the final judgement, regarding the treatment plan, based on individual patient's clinical data and the diagnostic and treatment options available.



Version 4 April 2008

Pharmacist Lead : Lynn Morrison

For elderly or physically debilitated patients refer to Algorithm 3- Emergency Sedation: Elderly.
For patients with a learning disability refer to Algorithm 4 Emergency Sedation: Learning Disabilities

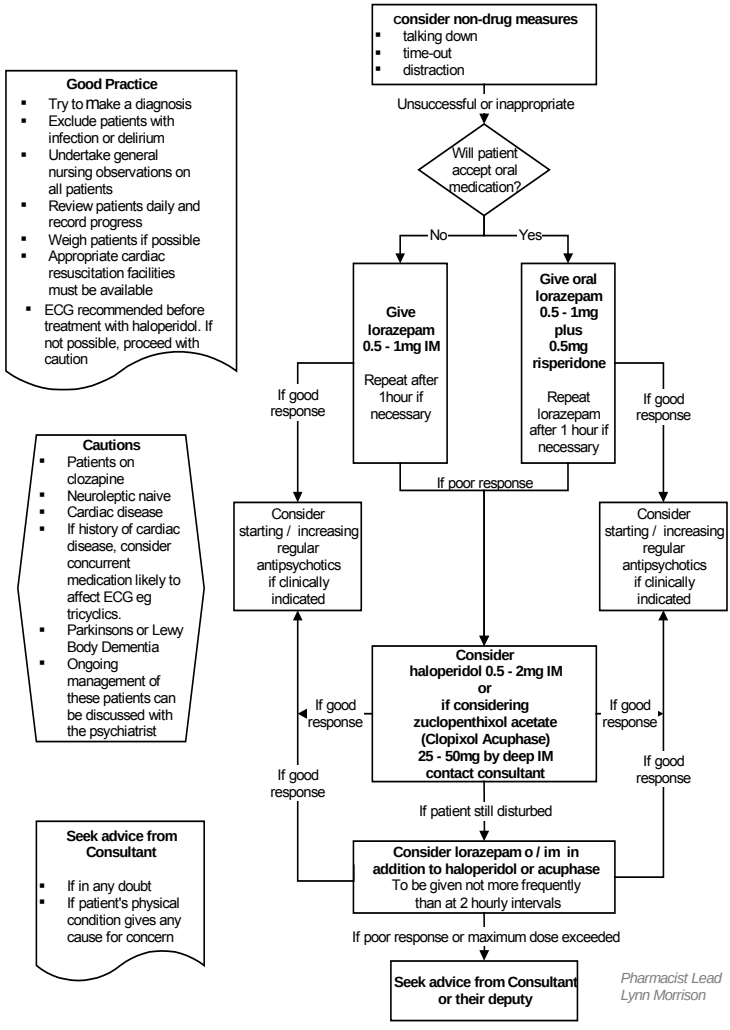
Appendix 13

Algorithm 3- Emergency Sedation (Elderly Mental Health)

NHS Forth Valley

Please use this algorithm along with the Prescribing Guidelines.

This is a description of good practice but is not intended to be construed or to serve as a standard of medical care. The treatment plan will be based on individual patient's clinical data and the diagnostic and treatment options available.



Pharmacist Lead
Lynn Morrison

Appendix 14

Forth Valley Primary Care Services
Primary Care Drug & Therapeutics

Prescribing Guidelines

Regular Use Of More Than One Antipsychotic

"Prescribing of more than one antipsychotic at the same time is **not** recommended; it may constitute a hazard and there is no significant evidence that the side effects are minimised[1*].

The Primary Care Drug & Therapeutics Committee have agreed the following guidance by considering current evidence[2] and the standards set by The Royal College of Psychiatrists' Research Unit national audit[3]:

Prescribing of more than one antipsychotic should only be given as part of a considered treatment plan, with the rationale and outcome clearly documented. It may be appropriate only where the following criteria apply:

- During a switch from one antipsychotic to another
- As a temporary measure during a period of acute exacerbation of illness (Refer to Algorithm 2)
- For patients with Treatment Resistant schizophrenia where:
  - Failure to respond to clozapine [2]
  - Failure to tolerate clozapine
  - Patient refuses clozapine
  - Clozapine is contra-indicated
  - Partial response to clozapine, as augmentation[4,5,6]

Inappropriate reasons for the prescribing of more than one antipsychotic include:

- Failure to wait adequate length of time for first medicine to have antipsychotic effect
- Where clinical improvement occurs before a switch is completed
- Where inadequate resources and environment result in higher doses of medication being utilised
- Confusing sedative effect with antipsychotic effect

References

1 *The British National Formulary (March 2001) 41, section 4.2.1,175*
2 *Canales PL et al (1999) Current Opinion: Role of Antipsychotic Polypharmacy in the Treatment of Schizophrenia. CNS Drugs,12, 179-188*
3 *The National Audit of The Prescribing of Anti-psychotic Medication 1998*
4 *Shiloh R et al (1997) Sulpiride augmentation in people with schizophrenia partially responsive to clozapine. British Journal of Psychiatry, 171, 569-573*
5 *Morera A et al (1999) Risperidone and clozapine combination for the treatment of refractory schizophrenia. Acta Psych Scan 99, 305-307*
6 *The Maudsley Prescribing Guidelines, 6th Edition, 2001, 38*

Lead Pharmacist Lynn Morrison

Appendix 15

Monitoring Guidance for Patients receiving Atypical Antipsychotic Therapy

	Clozapine	Olanzapine	Risperidone	Quetiapine	Amisulpride	Aripiprazole
Weight & BMI	Baseline at one month then three monthly	Baseline, after one month, then three monthly				
Fasting Lipids	Baseline then three monthly in first year thereafter annually if no abnormalities	Baseline, then three monthly in first year, thereafter annually				
Blood Glucose *See over page	Baseline then three monthly in first year thereafter annually if no abnormalities	Baseline, then three monthly in first year, thereafter annually				
LFT's	Baseline, at one month, thereafter annually	Baseline, after one month, thereafter annually				
ECG	Baseline for patients at risk then after 1-2 months	Baseline for antipsychotic naive patients then repeated after one month				
U & E's	Baseline then annually	Baseline then annually				
FBC	Baseline[9,2,34] then as per SPC	Baseline then three monthly				
TFT's				Baseline[9,13] then six monthly in those with compromised thyroid function[13]		
Bp and Pulse	On initiation and during treatment as per SPC[20]	On initiation and during titration in the elderly[19]	On initiation and during titration[18]	On initiation and during titration[14]	On initiation in the elderly[21]	Frequently during initiation[9]
NB.	All monitoring to be undertaken by Specialist Mental Health Services unless agreement in exceptional circumstance	Baseline tests to completed by the initial prescriber and communicated with the GP and/or Consultant Psychiatrist				

Appendix 15

Monitoring Guidance for Patients receiving Atypical Antipsychotic Therapy

ABNORMAL RESULTS:

TEST	ACTION
Fasting Lipids	Repeat test, refer to Lipid Lowering Guidelines, discuss with lipid clinic if appropriate
Blood Glucose	Repeat test, refer to Diabetic Protocol, and discuss with diabetic clinic if appropriate
LFT's	Repeat test, investigate cause, review dose / therapy if appropriate, if transaminases >3x limit, discuss with Specialist
ECG	**QTc <440ms(men) or <470ms (women):** no action **QTc >440ms (men) or >470ms (women) but <500ms**: consider dose reduction or switch to drug of lesser effect. **QTc > 500ms**: stop causative drug(s) ± switch to drug of lesser effect ± refer to cardiologist. If **Abnormal T-wave morphology**: review treatment indications. Consider switch to drug of lesser effect ± refer to cardiologist. (advice from Dr James Spratt, Consultant Cardiologist)
FBC	Repeat test, investigate cause, review dose / therapy if appropriate
TFT's	Repeat test, investigate cause, review dose / therapy if appropriate

*Advice from Dr John Doig suggested regular screening of patients on Atypical Antipsychotics. Random Blood glucose, though if result is > 6.00mmol/L a fasting sample should be checked. If fasting confirmed > 6.00mmol/l then OGTT should be considered. If patients have osmotic symptoms they should also be screened randomly.

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Lead Pharmacist Lynn Morrison

Appendix 16

Forth Valley Primary Care Services
Primary Care Drug & Therapeutics

Prescribing Guidelines

The Use of High Dose Antipsychotics

This information is issued to clinicians for guidance only and should be reviewed as scientific knowledge evolves. Treatment decisions will be based on the clinical data available for an individual. Deviation from this guidance does not in itself constitute bad practice as long as the reasoning behind it is detailed in the case notes.

Refer to the *Royal College of Psychiatrists' Consensus Statement on the Use of High Dose Antipsychotic Medication* for detailed information.

1. A decision to exceed the usual recommended dose of a single antipsychotic, or combination of more than one, rests with the patient's Consultant Psychiatrist. Where possible, discuss the decision with the multidisciplinary team, the patient, or carer, and obtain valid consent. Record details in the patient's case notes.

2. Bear in mind risk factors such as:
   - cardiac disorder (particularly MI and arrhythmias)
   - old age
   - hepatic/renal impairment
   - obesity
   - heavy drinking or smoking

3. Consider drug interactions and avoid concomitant use with:
   - terfenadine and astemizole
   - diuretics (risk of fluid and electrolyte imbalance)
   - tricyclic antidepressants
   - anti-arrythmics
   - anti-hypertensives

4. Where possible carry out an ECG to exclude long QT syndromes. Repeat every 1-3 months while dose remains high. Review treatment if a prolonged QT interval develops. If you decide to continue treatment, record the reason for doing so in the patient's case notes.
   (The "corrected QT interval" (QTc) should be calculated - see overleaf.)

5. Increase dose slowly i.e. weekly.

6. Regularly check pulse, blood pressure and temperature, hydration status and urea and electrolytes.

7. Review progress regularly and reduce dose if no improvement is seen after three months.

Appendix 16

Measurement of QTc Interval

The QT interval is measured from the beginning of the QRS complex to the end of the T wave. This measurement is complicated as the QT interval varies with heart rate.

The corrected QT interval (QTc) can be calculated by measuring the QT interval and dividing by the square root of the RR interval. The normal range for a male is less than 0.39seconds and for a female is less than 0.44 seconds[2].

$$QTc \quad \frac{QT\,interval}{\sqrt{RR\,interval}}$$

Prolongation of the QT interval predisposes to ventricular arrhythmia, in particular a type of tachycardia known as *torsades de pointes*. This is associated with recurrent dizziness and syncope and may be self limiting. However, it may progress to ventricular fibrillation and sudden death. Patients who develop *torsades de pointes* which may be drug related should be referred for urgent specialist assessment and the relevant drug stopped immediately. Electrolyte abnormalities should be corrected promptly. Although *torasdes de pointes* is unlikely to occur until the QTc exceeds 500 milliseconds, the relationship between the degree of prolongation and risk of serious arrhythmia is unpredictable. Specialist advice should always be sought when there is uncertainty[3].

Guidance on defining High Dose

- Single antipsychotic prescribed at a daily dose, which exceeds the advisory upper limit in the BNF, or Summary of Product Characteristics.

- If more than one antipsychotic is prescribed concurrently, where the percentages of the maximum dose for each antipsychotic when added together equal or exceed 100%.
  For example: zuclopenthixol decanoate 300mg weekly + olanzapine 15mg daily
  *Sum of percentages = 50% + 75% (>100% therefore **high dose)***

- If 'as required' antipsychotics are being administered, this must be included in the high dose calculation

Appendix 16

British National Formulary Advisory Maximum Daily Doses[1]

Oral antipsychotics: maximum daily dose		Depot antipsychotics: maximum weekly dose	
Amisulpride	1200mg	Flupenthixol decanoate	400mg
Aripiprazole	30mg	Fluphenazine decanoate	100mg (every 2 weeks)
Chlorpromazine	1000mg	Haloperidol decanoate	300mg (every 4 weeks)
Clozapine	900mg	Pipothiazine palmitate	200mg (every 4 weeks)
Flupenthixol	18mg	Risperidone	50mg (every 2 weeks)
Fluphenazine	20mg	Zuclopenthixol decanoate	600mg
Haloperidol	30mg		
Methotrimeprazine	1000mg		
Olanzapine	20mg		
Pericyazine	300mg		
Perphenazine	24mg		
Pimozide	20mg		
Promazine	800mg		
Quetiapine	750mg		
Risperidone	16mg		
Sulpiride	2400mg		
Thioridazine (hospital)	600mg		
Trifluoperazine	not stated		
Zuclopenthixol (oral)	150mg		
Zuclopenthixol acetate (im)	400mg per course		

References

1. The British National Formulary (March 2004) 47, section 4.2.1
2. QTc information was kindly provided ina letter from Dr A Hargreaves, consultant Physician and Cardiologist, FDRI
3. Committee on Safety of Medicines & Medicines Control Agency. Current Problems in Pharmacovigilance Volume 22 March 1996

Pharmacist Lead:Lynn Morrison

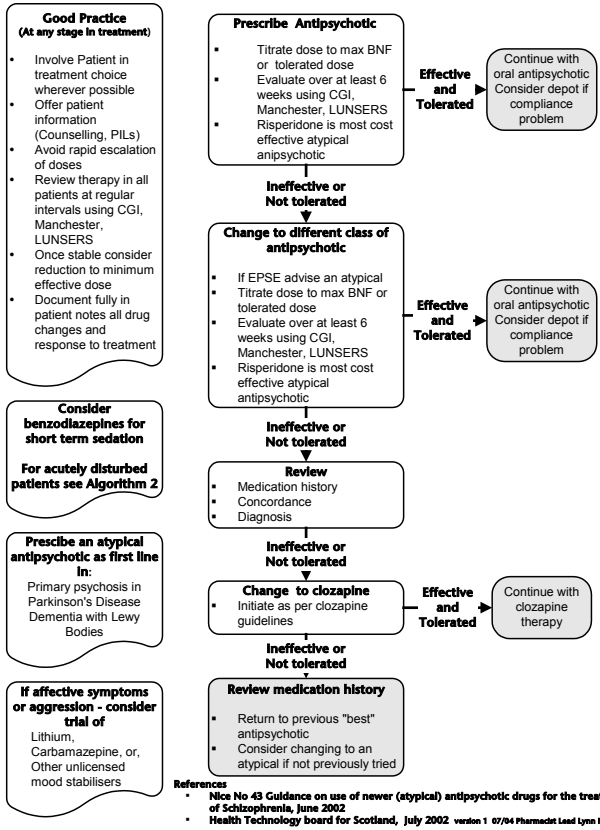
Appendix 17

Algorithm 1 Drug Treatment Of Schizophrenia

Forth Valley Primary Care Services

(The Consultant Psychiatrist will make the final judgement, regarding the treatment plan, based on individual patient's clinical data and the diagnostic and treatment options available.)

- **This algorithm represents an evidence based approach to the treatment of schizophrenia**
- **There is no real evidence that atypical antipsychotics are more effective or better tolerated than typical drugs, but they have lower incidence of extrapyramidal side effects.**
- **There is no firm evidence that any drug except clozapine is effective in refractory schizophrenia.**
- **There is some evidence that the longer the duration of poorly treated illness, the worse the prognosis.**
- **This is recommended followed by supplementary prescribers who will have a role in dose adjustment**



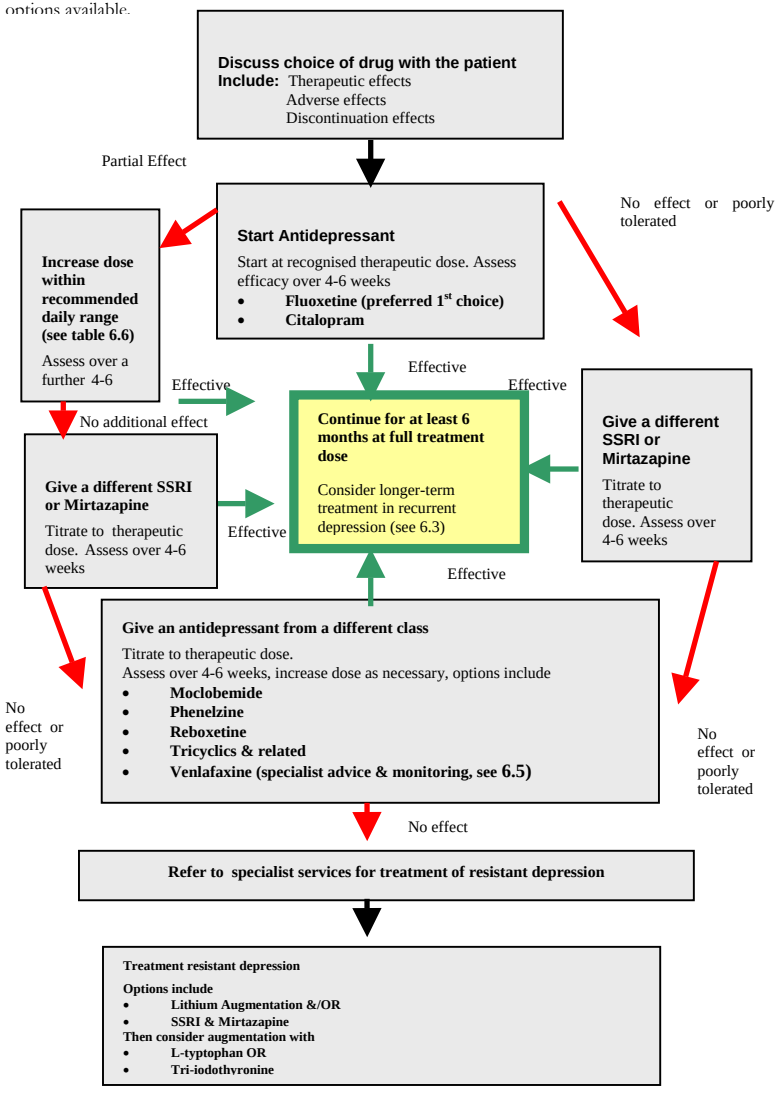
References

- **Nice No 43 Guidance on use of newer (atypical) antipsychotic drugs for the treatment of Schizophrenia, June 2002**
- **Health Technology board for Scotland, July 2002 version 1 07/04 Pharmacist Lead Lynn Morrison**

Appendix 19

Drug Treatment of Depression 18- 65 Yrs

This statement should be considered as a guideline only. The doctor will make the final judgement regarding the treatment plan, based on individual patient's clinical data, and the diagnostic and treatment options available.

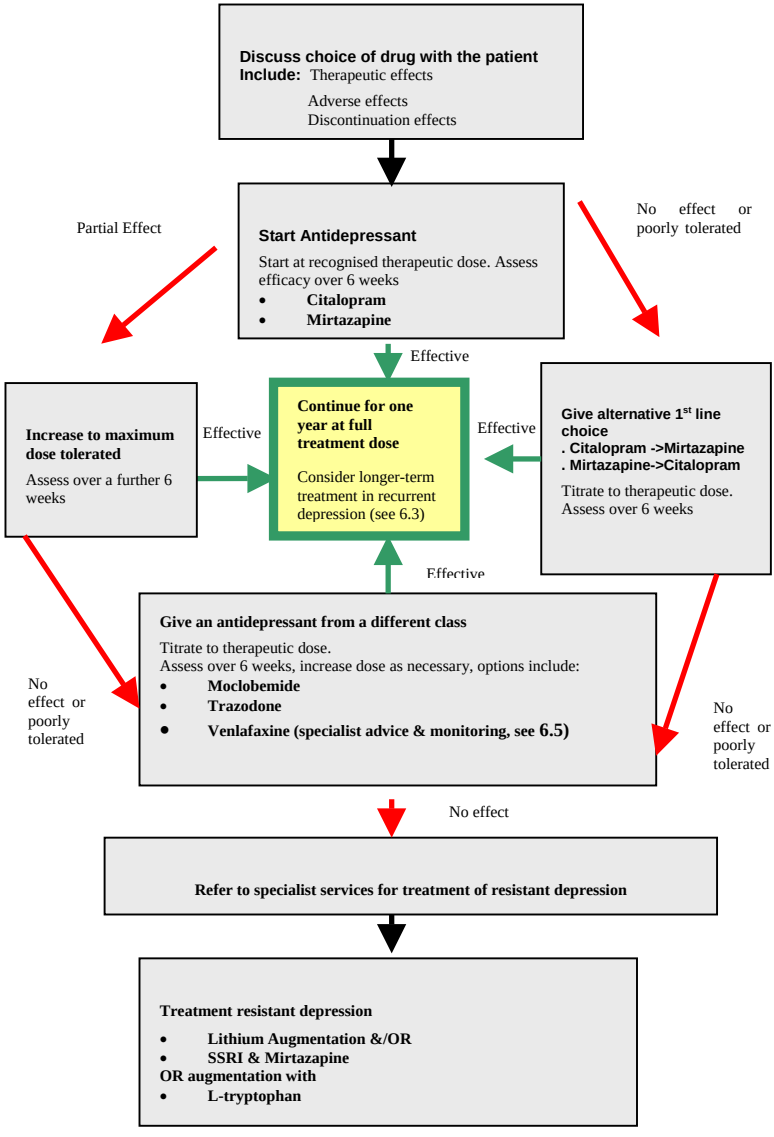


Key Points: - CBT & Antidepressant combination has been shown to be effective
- For patients with psychotic depression, consider augmentation of the current treatment plan with antipsychotic medication
*Amitriptyline;Clomipramine;Lofepramine(least cardiotoxic); Trazodone; (NB **exclude** Dosulepin)
**Taken from NHS FV"Guidelines for Drug Treatment of Depression" (January 2006) Refer to full guidelines for referenced tables.

Pharmacist Lead: Catherine MacKenzie

Appendix 19

This statement should be considered as a guideline only. The doctor will make the final judgement regarding the treatment plan, based on individual patient's clinical data, and the diagnostic and treatment options available.



Key Points:

- Psychological and pharmacological combination therapy has been shown to be effective
- For patients with psychotic depression, consider augmentation of the current treatment plan with antipsychotic medication

Pharmacist Lead: Catherine MacKenzie

Appendix 20
Guidance on Alcohol Dependence

Alcohol Dependence:
In-patient Management of Alcohol Withdrawal

In alcohol-dependent drinkers withdrawal symptoms can start from 6 to 24 hours after the last alcoholic drink and usually last 5 – 7 days, occasionally longer. Early symptoms include tremor, sweating, anorexia, nausea, insomnia and anxiety. It is vital to detect symptoms early; having a high level of suspicion and taking a comprehensive history helps.

Between 10 and 60 hours from cessation, withdrawal seizures are a risk. They may precede or accompany life threatening Delirium Tremens, which may develop after 72 hours if withdrawal symptoms persist. Predisposing factors include hypoglycaemia, hypokalaemia, hypomagnesaemia or hypocalcaemia.

Where possible, patients should be managed in an environment with adequate lighting, cool ambient temperature, good ventilation and supportive nursing care.

1. Assessment

It is critical to take an alcohol history from all people admitted to an inpatient setting.

This should include:

- History of alcohol consumption from patient or other informant in units of alcohol per week; withdrawal seizures; pattern of dependent drinking using AUDIT (Alcohol Use Disorders Identification Test) - **Appendix 1**.
  It is also important to enquire about other substances of misuse
- Physical examination.
- Laboratory investigations: Blood Alcohol Concentration (BAC), FBC, U&E, LFT, γGT, Glucose, Magnesium, Calcium and urine drug screen.

It is important to refer promptly for further specialist help and advice. In the General Hospital setting a referral should be made to the Liaison Psychiatry service, for the attention of the Alcohol Liaison Nurse. In the psychiatric setting the Community Alcohol Team at CADS should be contacted.

Mild symptoms
- Tense
- Irritable
- Poor concentration

Moderate symptoms
- Tachycardia
- Nausea
- Tremor
- Sweats
- Anxiety
- Irritability
- Headache
- Flu-like symptoms
- Seizures

Severe symptoms
- Confusion
- Visual/auditory hallucinations
- Irrational thoughts/fears
- Seizures
- Bizarre, aggressive, uncooperative behaviour.

See Algorithm – **Appendix 2**.

Appendix 20
Guidance on Alcohol Dependence

2. Recognition of Wernicke's Korsakoff Syndrome

Wernicke's encephalopathy is a reversible biochemical lesion of the CNS caused by overwhelming metabolic demands being made upon depleted B-vitamin reserves, in particular thiamine. Wernicke's encephalopathy is most common in chronic alcohol misusers.

Wernicke's encephalopathy is an acute illness, precipitated by alcohol withdrawal, which is often under treated or missed. It should be suspected and treated in any patients undergoing alcohol detoxification who develop confusion, memory problems or difficulties with their gait or co-ordination.

A presumptive diagnosis of Wernicke's Encephalopathy should be made in patients with **a history of alcohol abuse and one or more of the following** otherwise unexplained symptoms:

- Acute confusion
- Opthalmoplegia / nystagmus
- Ataxia/unsteadiness
- Memory disturbance
- Decreased consciousness level including unconsciousness / coma
- Unexplained hypotension with hypothermia

Korsakoff's psychosis is described as an amnesic syndrome with impaired recent memory, and relatively intact intellectual function. It occurs after one or more inadequately treated episodes of Wernicke's encephalopathy. Patients rarely have a discrete deficit in forming new memories and often present with more global deficits along a spectrum of severity.

Korsakoff's psychosis is a preventable dementia, by prompt treatment where Wernicke's is suspected, with high dose parenteral vitamin preparations.

It is also important to elucidate, from a careful history, patients who are at risk of developing Wernicke-Korsakoff syndrome. These would include patients who have physical illness, weight loss, poor diet, diarrhoea and vomiting. These patients should also be treated with parenteral vitamins, as indicated on the prescription sheet in **Appendix 3**.

Appendix 20
Guidance on Alcohol Dependence

2.1 Patients at risk of Wernicke's Encephalopathy

All in-patients presenting in alcohol withdrawal should be considered at risk of developing Wernicke's encephalopathy and should be prescribed prophylactic parenteral vitamins as follows:

Prophylaxis

↓

Administer **ONE pair of IV or IM PABRINEX Ampoules**
(High Potency Parenteral B-Complex Vitamins)
ONCE DAILY for 3 days.
(IV: Mix No 1 and No 2 amps with 100ml of normal saline or 5% glucose and infuse over 30 minutes.)

It should be noted, as per CSM advice, that there is a small risk of anaphylactic reactions with parenteral vitamin preparations. Facilities for treatment of anaphylaxis should be available.

2.2 Patients with symptoms of Wernicke's Encephalopathy

Treatment

↓

Administer **2 pairs of IV PABRINEX Ampoules** (High Potency Parenteral B-Complex Vitamins) **THREE TIMES DAILY for 2 DAYS**.
Mix No 1 and No 2 amps with 100ml of normal saline or 5% glucose and infuse over 30 minutes.

↓	↓
No Response Discontinue supplementation unless comatose/unconscious or Wernicke's encephalopathy confirmed by other means.	**Response** 1 pair IV or IM Pabrinex amps ONCE daily for 5 DAYS In patients with ataxia, polyneuritis, memory disturbance - continue treatment until clinical improvement ceases.

Oral preparations of thiamine are poorly absorbed in alcohol misusers, and will not adequately replace depleted thiamine stores. They should not be used as a substitute for parenteral preparations. Patients who have a chronic alcohol problem and whose diet may be deficient, should be given oral thiamine indefinitely **after** parenteral (SIGN 74). For this group a dose of thiamine 100mg three times daily is recommended.

Appendix 20
Guidance on Alcohol Dependence

3. Replacement of Alcohol with an Alternative CNS Depressant
In Forth Valley, chlordiazepoxide is the agreed medicine of choice in the management of alcohol withdrawal symptoms. Chlordiazepoxide is a suitable medication in the majority of cases and the 'Standard Chlordiazepoxide Reducing Schedule' (**appendix 3**) should be completed and signed by the prescriber. **NB.** This regimen differs from the example quoted in SIGN 74 but has been agreed by the Forth Valley Alcohol Guideline Implementation Group.

Benzodiazepines have sedative, anxiolytic and anticonvulsant properties. They show cross-tolerance with alcohol, which is necessary in detoxification. It is important to obtain a clear history of alcohol intake or assess the patient for signs of withdrawal prior to starting therapy.
More severe cases may need a larger starting dose which may be annotated on the standard chlordiazepoxide reducing schedule at day zero (**appendix 3**).

The metabolism of benzodiazepines may be reduced in severe liver damage. For the small number of patients with severely impaired liver function, a short-acting benzodiazepine (e.g. lorazepam) or lower dose chlordiazepoxide (e.g. starting at 15mg instead of 20mg) should be considered to avoid build up of metabolites and over sedation. In the frail or elderly a lower starting dose should be considered where appropriate (e.g. 10mg instead of 20mg).
An "as required" dose of 10 - 20mg chlordiazepoxide, up to six doses in 24 hours should also be prescribed (**appendix 3**).
Patients with severe symptoms of withdrawal or at risk of withdrawal seizures must be prescribed rectal diazepam 10mg 'as required'.

4. Management of Patients with Complex Needs
4.1 It is essential to ensure that patients are given adequate, early benzodiazepine treatment. Most cases of “difficult to manage” patients are avoidable. Where difficulties are arising, it should first be checked that adequate chlordiazepoxide has been given.
Mild perceptual disturbances usually respond to chlordiazepoxide but psychotic symptoms such as hallucinations warrant referral to Liaison Psychiatry. Alternatively consider oral or IM Haloperidol 5-10mg, in discussion with the Consultant Psychiatrist.
Refer to relevant Emergency Sedation guidance for:
Primary Care Adult Mental Health (**Appendix 4**)
Acute Services (**Appendix 6)**

4.2 Management of Older People with Complex Needs
Older people often have complex morbidities including pre-existing dementia, mobility problems, and cerebrovascular disease, which further add to the difficulty in recognising the problems of alcohol abuse in this age group, and may complicate management. Lower doses of medications may be indicated and **Appendix 5** contains the Emergency Sedation guidance from Primary Care Elderly Services.

5. Monitoring
Undertake routine checks on serum urea and electrolytes. Severity of withdrawal symptom checklist should be used daily during detoxification: see **Appendix 7**.Encourage an adequate oral fluid intake ie 2-2.5litres/day

6. Discharge Planning
The need for inpatient alcohol detoxification means that the patient has a dependency on alcohol, and by definition a severe alcohol problem. It is important that all avenues to prevent relapse are explored, and that patients are offered pharmacological, psychological and social help for their dependence.

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Guidance on Alcohol Dependence

6.1 Pharmacological Interventions
Patients should be given no more that eight days chlordiazepoxide in total. If patients undergo a planned discharge, they should complete their detoxification at home. Care must be taken that patients are not given an open ended benzodiazepine script; this will not aid their alcohol problem. For patients who take their own discharge out with the recommended treatment plan, the risk of under-treated delirium tremens must be carefully considered. The decision to continue the chlordiazepoxide reducing prescription must be taken cautiously by the clinician for each individual case.

If it is felt that patients will continue to drink, it may be appropriate to send them home with a prescription for thiamine at a dose of 50-100mg three times per day. This is not necessary if the patient is eating a normal diet. Patients who have a chronic alcohol problem and whose diet may be deficient should be given oral thiamine indefinitely.

There are a number of medications which can aid maintenance of abstinence, such as acamprosate, disulfiram and naltrexone. These are detailed in separate guidance, and advice can again be gained from the Psychiatric Liaison Service, about prescribing these medications.

6.2 Psychological and Social help
There are a number of agencies in Forth Valley who offer counselling and support to substance users. These include Alcoholics Anonymous (AA), Alcohol Support Counselling (ASC) and Alcohol Link.
For further details, refer to the NHS Forth Valley Guidance, Alcohol Dependence: Maintenance of Abstinence

7. References
The Alcohol Management Group consulted the following national guidelines and references which support this local guidance:

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2. Lingford-Hughes A.R., Welch S., Nutt D.J., Evidence-based guidelines for the pharmacological management of substance misuse, addiction and comorbidity: recommendations from the British Association for Psychopharmacology. *Journal of Psychopharmacology 2004 18(3); 293-335*
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7. Slattery, J., Chick, J., et al Prevention of relapse in alcohol dependence, *Health Technology Assessment Report 3, 2003, NHS-QIS*
8. Thomson A.D., Marshall E.J., The natural history and pathophysiology of Wernicke's Encephalopathy and Korsakoff's Psychosis. *Alcohol & Alcoholism 2006 41, No 2, 151-158*
9. Thomson A.D., Marshall E.J., The treatment of patients at risk of developing Wernicke's Encephalopathy in the community, *Alcohol & Alcoholism 2006 41, No 2, 159-167*

Lead Jean Logan

Appendix 20
Guidance on Alcohol Dependence

Appendix 1

AUDIT (Alcohol Use Disorders Identification Test)
Circle the number that comes closest to the patient's answer

1. How often do you have a drink containing alcohol?
(0) never (1) monthly or less (2) 2-4 times a month (3) 2-3 times a week (4) 4 or more times a week

2. How many drinks containing alcohol do you have on a typical day when you are drinking?
(0) 1 or 2 (1) 3 or 4 (2) 5 or 6 (3) 7 - 9 (4) 10 or more

3. How often do you have six or more drinks on one occasion?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you had started?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

5. How often during the last year have you failed to do what was normally expected from you because of drinking?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

7. How often during the last year have you had a feeling of guilt or remorse after drinking?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

9. Have you or someone else been injured as a result of your drinking?
(0) no (2) yes, but not in the last year (4) yes, during the last year

10. Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?
(0) no (2) yes, but not in the last year (4) yes, during the last year

CUMULATIVE SCORE [ ]

The minimum score (for non-drinkers) is zero and the maximum possible score is 40. A score of 8 or more may indicate a strong likelihood of hazardous or harmful alcohol consumption.

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Guidance on Alcohol Dependence

Appendix 2 Management of Alcohol Withdrawal Algorithm

Where possible, patients should be nursed in a well-ventilated and adequately lit area.

CAUTION WITH DIAGNOSIS OF DECOMPENSATED LIVER

GREEN ZONE **AMBER ZONE** **RED ZONE**

MILD SYMPTOMS
i.e. tense, irritable, poor concentration.
If suspicion of withdrawal– review regularly.

MODERATE/SEVERE SYMPTOMS
i.e. tachycardia, systolic hypertension, nausea, vomiting,
loss of appetite, retching, tremor, sweats, fever, insomnia, anxious, headache, irritable, flu-like symptoms.

i.e.
and in addition – confusion, disorientation, visual / auditory hallucinations, irrational thoughts/delusions, seizures. Bizarre, aggressive or un-cooperative behaviour.

Determine alcohol intake over last 7 days.

>10 units for women per day,
>15 units for men per day and/or
historv of alcohol withdraw

TO GAIN CONTROL
More severe cases may require a larger starting dose. Day 0 – as per Standard Chlordiazepoxide Reducing Schedule.
An 'as required' dose of 10 – 20mgs Chlordiazepoxide should also be prescribed – up to 6 doses in 24hrs.
(**max. of 240mg in 24 hrs**).

Adjunctive therapy
Refer to appropriate "Emergency Sedation" Protocol.
Consider Haloperidol 5-10mg oral or IM if psychosis noted. Discuss treatment options with Psychiatrist.

< 10 - 15 units per day with no history of withdrawal.

Assess level of risk and if indicated commence on reducing regime of oral Chlordiazepoxide as per **Standard Chlordiazepoxide Reducing Schedule**(Day 1)
i.e. 20 mgs Q.I.D. ↓

Monitor BP, pulse and withdrawal symptoms.

IF NO IMPROVEMENT GO TO RED ZONE

Encourage fluids.

Continue to observe.
IF NO IMPROVEMENT GO TO AMBER ZONE

VITAMIN SUPPLEMENTATION
ALL in-patients with alcohol dependency must be prescribed parenteral vitamins. Prophylaxis treatment is incorporated within Standard Chlordiazepoxide Reducing Schedule.

Treatment of Wernicke's Encephalopathy :

2 pairs of IV PABRINEX Ampoules – THREE TIMES DAILY for 2 DAYS.

If response noted continue with:
1 pair of IV or IM PABRINEX Ampoules – ONCE DAILY for 5 DAYS.
Refer to Forth Valley Guideline.

CSM ADVICE – Small risk of anaphylaxis.

No medication on discharge.

Offer brief intervention and self-help leaflet.

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Guidance on Alcohol Dependence

Appendix 3 Standard Chlordiazepoxide Reducing Schedule

Name of Patient	Age/ D.O.B.	Weight (kg)	CHI Number	Consultant	Hospital & Ward

- To be used for detoxification from alcohol and clinical review is essential. If another dose regimen is appropriate, prescribe directly on the prescription sheet.
- Prescribe on regular & 'as required' section of the prescription sheet: 'Standard Chlordiazepoxide Reducing Schedule '
- *** Prescriber must complete starting dose of chlordiazepoxide on 'day 0' for morning, lunch, evening & night as appropriate**
- ****If neurological signs or cognitive problems are evident, prescribe Pabrinex IV 2 pairs of amps three times daily as per guideline.**
- Administering nurse will record and initial the time when dose is administered in the 'Time/ Given by' box. Omit prescribed dose if patient is drowsy.
- Give PRN for symptoms of alcohol withdrawal ONLY: review chart with doctor if more than two PRN doses are needed daily

			Regular Medication								PRN Medication		
Day	Date	Drug	Morning dose	Time/ Given by	Lunch time dose	Time/ Given by	Evening dose	Time/ Given by	Night time dose	Time/ Given by	PRN Dose	Time/ Given by	Time/ Given by
0		Chlordiazepoxide oral	*		*		*		*		20mg		
1		Chlordiazepoxide oral	20mg		20mg		20mg		20mg		20mg		
1		Pabrinex IV/IM**	1 pair										
2		Chlordiazepoxide oral	15mg		15mg		15mg		15mg		20mg		
2		Pabrinex IV/IM**	1 pair										
3		Chlordiazepoxide oral	15mg				15mg		15mg		15mg		
3		Pabrinex IV/IM**	1 pair										
4		Chlordiazepoxide oral	10mg				10mg		10mg		10mg		
5		Chlordiazepoxide oral	5mg				5mg		5mg		5mg		
6		Chlordiazepoxide oral	5mg						5mg		5mg		
7		Chlordiazepoxide oral							5mg		5mg		
		Diazepam rectal									10mg		
			Doctors Signature:								Date:		

Alcohol Dependence: In-patient Management of Alcohol Withdrawal Approved by AD&TC Sept 2007
Version 1.12, Prepared by CADS & Liaison Psychiatry Review Date: Sept 2008

Appendix 20
Guidance on Alcohol Dependence

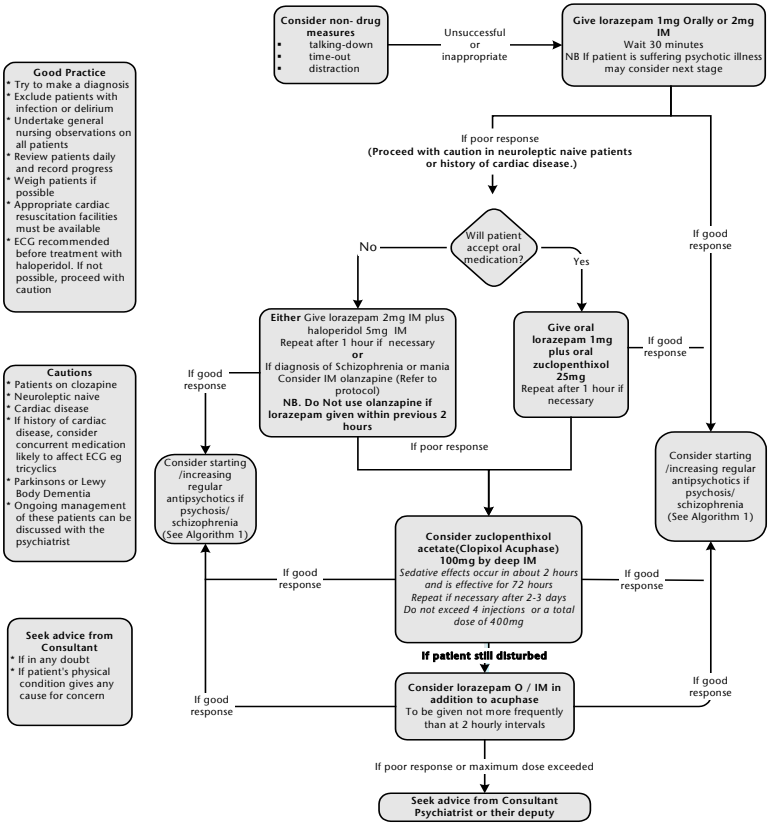
Forth Valley Primary Care Services

Algorithm 2 - Emergency Sedation : Adult Mental Health

Please use this algorithm along with the Prescribing Guidelines.

Appendix 4

Emergency sedation is broadly defined as the giving of psychotropic medication to control disturbed behaviour. This is a description of good practice but is not intended to be construed or to serve as a standard of medical care. The psychiatrist will make the final judgement, regarding the treatment plan, based on individual patient's clinical data and the diagnostic and treatment options available.



For elderly or physically debilitated patients refer to Algorithm 3- Emergency Sedation: Elderly.
For patients with a learning disability refer to Algorithm 4 Emergency Sedation: Learning Disabilities

Version 4 April 2008

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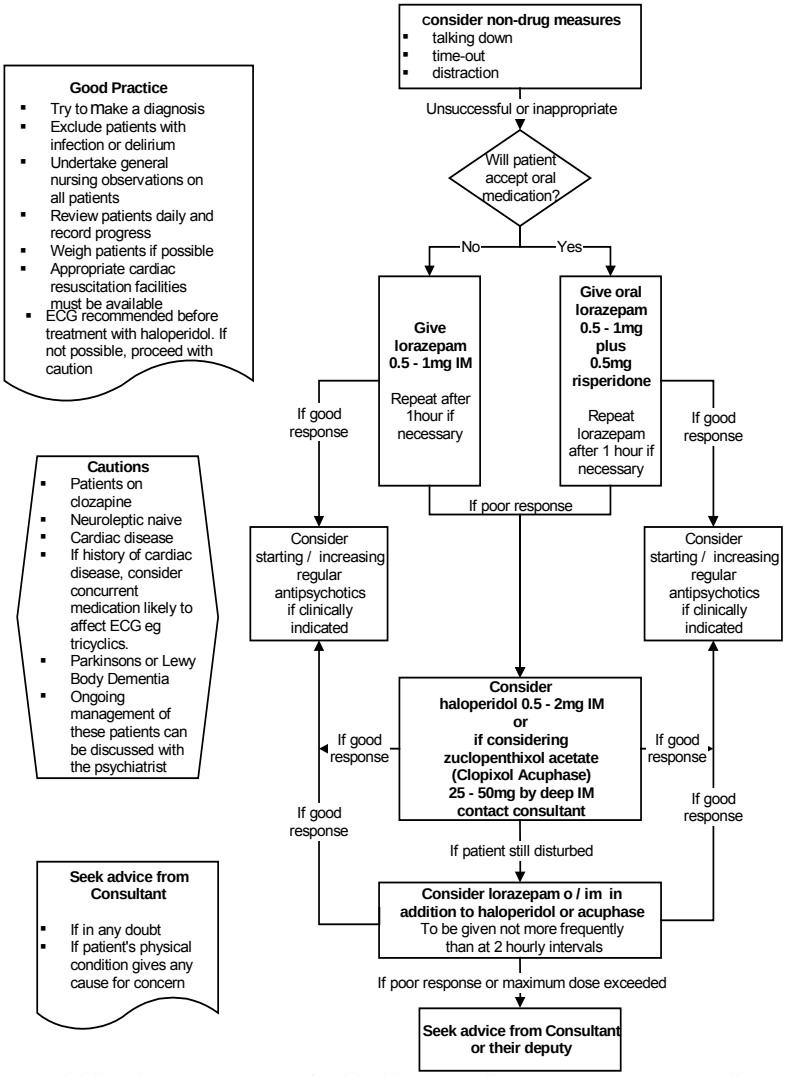
Algorithm 3 – Emergency Sedation: (Elderly Mental Health)

NHS Forth Valley Appendix 5

Please use this algorithm along with the Prescribing Guidelines.

This is a description of good practice but is not intended to be construed or to serve as a standard of medical care. The treatment plan will be based on individual patient's clinical data and the diagnostic and treatment options available.



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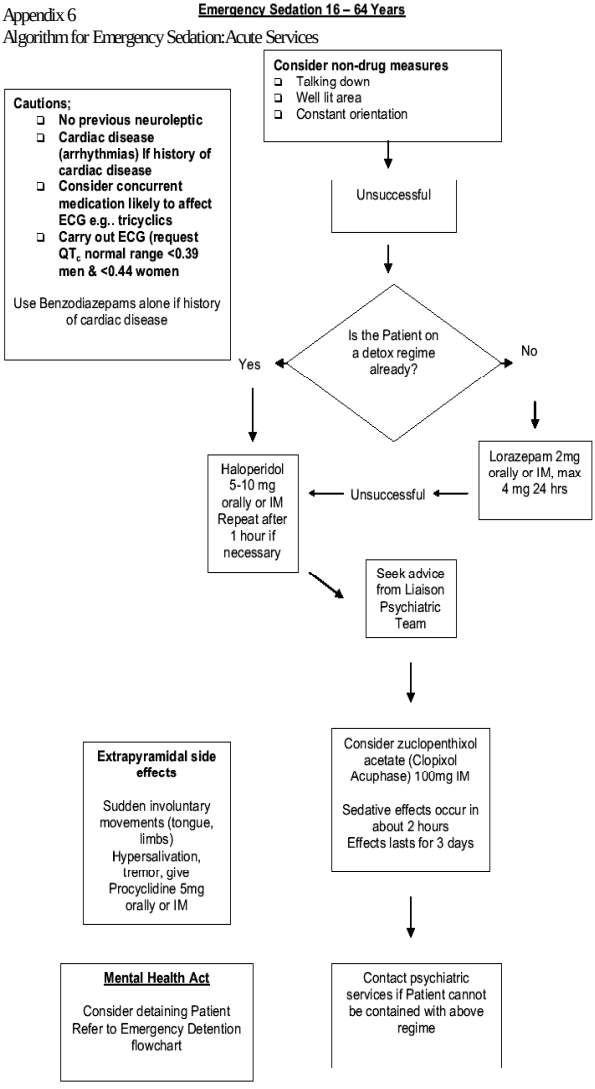
Appendix 6

Algorithm for Emergency Sedation: Acute Services



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Appendix 7

Severity of Withdrawal Symptom Checklist

ORIENTATION

Fully orientated	**0**
Mildly disorientated	**1**
Obviously disorientated	**2**
Totally disorientated	**3**

LEVEL OF CONSCIOUSNESS

Fully alert	**0**
Slightly drowsy	**1**
Very drowsy	**2**
Roused with difficulty	**3**

AGITATION

No signs	**0**
Slight	**1**
Moderate restlessness	**2**
Constant restlessness	**3**

HALLUCINATIONS

No hallucinations	**0**
Unstructured	**1**
Intermittent structured	**2**
Frequent structured	**3**

SWEATING

No sweating	**0**
Slight	**1**
Moderate	**2**
Profuse	**3**

TREMOR

None	**0**
Slight	**1**
Moderate	**2**
Marked	**3**

MOOD

Cheerful/appropriate	**0**
Sometimes low	**1**
Often low	**2**
Despondent	**3**

ANXIETY

Find it easy to relax	**0**
Find it difficult to relax	**1**
Hardly ever relaxed	**2**
Cannot relax	**3**

SLEEP

Slept well	**0**
Broken sleep	**1**
Difficulty in getting to sleep	**2**
Insomnia	**3**

APPETITE

Good appetite	**0**
Fair appetite	**1**
Poor appetite	**2**
No appetite	**3**

G. I. DISTURBANCE

No abnormalities	**0**
Mild nausea	**1**
Persistent nausea	**2**
Vomiting, two or more Occasions	**3**

COMMITMENT TO DETOX

Strong	**0**
Moderate	**1**
Slight	**2**
None	**3**

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Appendix 7

SEVERITY OF WITHDRAWAL SYMPTOM CHECKLIST score

Day Of Detoxification

	ASSESS	1	2	3	4	5	6	7
ORIENTATION								
CONSCIOUSNESS								
AGITATION								
HALLUCINATIONS								
SWEATING								
TREMOR								
MOOD								
ANXIETY								
SLEEP								
APPETITE								
G I DISTURBANCE								
COMMITMENT								
SWSC SCORE								
BLOOD PRESSURE								
PULSE								
BREATHALYSER								

Alcohol Dependence: In-patient Management of Alcohol Withdrawal Approved by AD&TC Sept 2007
Version 1.12, Prepared by CADS & Liaison Psychiatry Review Date: Sept 2008
Pharmacist Lead: Jean Logan

Appendix 21

Guidance on Alcohol Dependence

Alcohol Dependence: Maintenance of Abstinence

Treatment for alcohol dependence should be considered to have two distinct but interrelated parts. The first, covered in the guideline "Alcohol Dependence: Management of Withdrawal" is to help the individual stop drinking, using a safe detoxification process. The second part of treatment is to put in place methods and life skills that help the individual maintain their desired changes in their use of alcohol. In alcohol dependence the primary focus will be on maintaining an abstinence based model using psychological and pharmacological therapies and enhanced social supports.

1. Psychological Therapies

These are key in the maintenance of abstinence. Where possible individuals should be encouraged to accept assessment and intervention from the specialist alcohol service, which will be able to offer recommendations and psychological therapies. Forth Valley also has an excellent structured counselling service ASC. Individuals should also be strongly advised to make contact with Alcoholics Anonymous.

2. Pharmacotherapies

Pharmacological interventions are used as an adjunct to the treatment of alcohol dependence. Patients should be given information on the treatments available, and be encouraged to consider them.

In practice, a trial of acamprosate would probably be offered earlier in a drinking career than disulfiram, and should definitely be discussed after an individual's first alcohol detoxification. However, if a patient voices a strong commitment or interest in disulfiram, the risks and benefits of this medication should be weighed up with them, even if they are fairly early on in their drinking career.

2.1 Acamprosate (Campral EC®)

Acamprosate is an NMDA receptor modulator, specifically designed to prevent alcoholic relapse through a claimed action on craving.

Acamprosate should be initiated as soon as possible after alcohol withdrawal. The patient should be instructed to continue the tablets if he/she relapses. Repeated relapsing to heavy drinking indicates lack of efficacy. The recommended treatment period is one year. Adverse effects are usually mild and transient and are predominantly gastrointestinal (diarrhoea, nausea, vomiting, abdominal pain) and dermatological (itch, occasional maculopapular rash and rare cases of bullous skin reactions have been reported).
It is recommended that acamprosate is combined with counselling.

Guidance on Alcohol Dependence

Formulation: tablets e/c 333mg

Dose:

18-65 years	above 60kg	666mg (2 tablets) 3 times daily
18-65 years	under 60kg	666mg (2 tablets) at breakfast 333mg (1 tablet) at midday 333mg (1 tablet) in early evening

2.2 Disulfiram (Antabuse®)

Disulfiram acts by inhibiting aldehyde dehydrogenase, which is an enzyme involved in the breakdown of alcohol, which leads to an accumulation of acetaldehyde, which in turn leads to an unpleasant systemic reaction.

Disulfiram

- Is especially indicated where a lapse might have serious consequences (e.g. criminal re-offending, breach of employment agreement, precipitation of relapse leading to medical complications).

- Is only effective if taken *regularly.* Compliance is best when a third party is involved ('the partnership approach).

- Is an adjunct to psychosocial intervention, which need not be specialist. It should have a specialist service induction, with care taken to ensure supervised dosing and regular follow up.

- Offer **only to patients who intend to abstain**. This is an aid to help them stay sober while they commence changing their lifestyle

- Patients who are helped by AA should not substitute disulfiram for AA, but use it as an aid to attend meetings regularly.

Supervision by 3rd party i.e. family, work colleague or project worker

The clinician explains rationale and procedures to the supervisor and obtains agreement. Ideally, supervisor is thanked/encouraged by the clinician in person or by phone/letter at least once every 8 weeks.

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Guidance on Alcohol Dependence

Exclusions

- Short term memory impairment
- Heart disease: active or in past 6 months, tendency to cardiac arrhythmia, compromised respiratory status. **In such patients the alcohol reaction could be fatal.**
- Neuropathy
- Pregnancy and lactation.
- Liver disease (bilirubin>25mmols and/or GGT > 10 times normal and/or AST or AL T or Alk Phos > twice normal).
- Previous allergic reaction to disulfiram.

Practice Point
Patients receiving disulfiram suffer unpleasant systemic reactions if anything containing alcohol is consumed. They should carry a patient treatment card as shown on Appendix A.

Disulfiram has a number of cautions detailed in its use below. Each case should be evaluated on its own basis, and the patient asked to weigh up the pros and cons of treatment, particularly considering the risks to themselves of relapsing into alcohol dependence. If practitioners remain unsure, they are welcome to refer to the specialist alcohol service at CADS for an opinion.

Cautions

- History of psychosis.
- Hypotensive medication (alcohol-disulfiram reaction could cause fatal hypotension).
- Drug interactions e.g. disulfiram potentiates serum levels of phenytoin; may alter bio-availability of warfarin and some antidepressants.
- History of skin reaction to nickel.
- Certain medicines, mouthwashes, foods and toiletries contain ethanol.

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Guidance on Alcohol Dependence

Unwanted effects (usually dose-related)

- Tiredness, sleepiness, headaches.
- Skin reactions
- Rare: serious sudden liver reaction
- Peripheral neuropathy
- Halitosis
- Reduced libido

Dosage: Disulfiram tablets 200mg

Commence when all alcohol is excreted /metabolised, which in a very heavy drinker would be 24 - 36 hours after the last drink.

Day	1	800mg (4 tablets) as a single dose
Day	2	600 fig (3 tablets) as a single dose
Day	3	400mg (2 tablets) as a single dose
Day	4	200 fig (1 tablet) then

The dosing regime is designed to be 200mg per day or 400mg on Monday, 400mg on Wednesday, 600mg on Friday, totalling 7 tablets/week). Review weekly for the first month then review monthly for efficacy and unwanted effects. Not to be prescribed for longer than 6 months without review by GP or specialist.

If side effects are troublesome, reduce dose to I00mg (half a tablet) daily.

Monitoring

- LFT's at baseline and again at 4 - 6 weeks.
- There is no limit as to how long a patient might continue with disulfiram providing there is on-going medical supervision to detect rare toxic effects of cumulative use.
- For patients who have taken it regularly for 6 months, a slight dose reduction can be discussed. The lowest dose that has a deterrent effect should be sought.

2.3 Naltrexone

Naltrexone, an opioid antagonist is not licensed in the UK for use in alcohol dependence, and is currently used off licence in 5 Scottish NHS Boards. It is used as part of a comprehensive treatment programme to reduce the risk of relapse to heavy drinking, support abstinence and reduce alcohol craving. It may act by breaking the desire for the next drink by blocking the pleasure or high which would normally result from sampling alcohol.

In Forth Valley this medication would be prescribed by the specialist service only, and is currently not included in the Forth Valley Formulary for the treatment of alcohol dependence.

Appendix 21

Guidance on Alcohol Dependence

References

Slattery J, Chick J, et al (2003) Prevention of relapse in alcohol dependence Health Technology Assessment Report 3

Scottish Intercollegiate Guidelines Network (2003) The management of harmful drinking and alcohol dependence in primary care

Chick J, Safety Issues Concerning the Use of Disulfiram in Treating Alcohol Dependence (1999) Drug Safety May 20 (5)

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Appendix 21

Guidance on Alcohol Dependence

Appendix A

Antabuse® Patient treatment card

Patient Information

You have been prescribed Antabuse® tablets and you must on no account consume alcohol as long as you are receiving medication and for at least 7 days after stopping treatment. If you are taking other medicines particularly cough syrups and tonics you should check with your doctor or pharmacist to ensure that they are compatible with your Antabuse® therapy. Eau-de-cologne, after-shave or other toiletries may contain alcohol as may some vinegars, pickles, alcohol free/low alcohol beers and food sauces. Such preparations are best avoided.

ALPHARMA
Alpharma Limited, Whiddon Valley, Barnstaple, EX32 8NS
Tel: 01271 311257 Fax: 01271 311329 ANT 003/0301

Antabuse® Patient treatment card

Please carry this card with you at all times to ensure proper treatment in the event of an accident or sudden illness.

This patient should not be given alcohol in any form until 7 days after stopping Antabuse® therapy. Antabuse® interferes with drug metabolizing enzymes and may potentiate the action of centrally acting drugs eg. Phenytoin.

Date of issue _____

Doctor/Contact name _____

I am on Antabuse® (disulfiram) therapy. Daily dose _____

Name _____

Address _____

Telephone (day) _____ (evening) _____

Appendix 22

Guidance on Alcohol Dependence

Alcohol Dependence: Community Management of Alcohol Withdrawal

1. Introduction

Research evidence suggests that most people who are dependent on alcohol can be detoxified safely in a community setting. SIGN 74 recommends that this is done with the input of a community alcohol nurse, who can see and breathlyse the patient daily in the initial stages of treatment. Forth Valley designed the prototype for this model, and continues to provide high quality detoxification through the Community Alcohol Service, which is based at Bannockburn Hospital.

Outpatient alcohol withdrawal should always be a planned process. SIGN 74 defines clear criteria for those who are not suitable for outpatient alcohol detoxification:

In-patient detoxification would be advised (SIGN 74) if the patient:

- *Is confused or has hallucinations*
- *Has a history of previously complicated withdrawal*
- *Has epilepsy or history of fits*
- *Is undernourished*
- *Has severe vomiting or diarrhoea*
- *Is at risk of suicide*
- *Has severe dependence coupled with unwillingness to be seen daily*
- *Has previously failed home-assisted withdrawal*
- *Has uncontrollable withdrawal symptoms*
- *Has an acute physical or psychiatric illness*
- *Has multiple substance misuse*
- *Has a home environment unsupportive of abstinence*

NB. Caution should be exercised, and in-patient detoxification considered, for elderly drinkers who may have no support and often have many additional morbidities.

2. Assessment

It is important to take a clear history of alcohol use to determine if outpatient treatment for alcohol withdrawal is a viable treatment option.

This should include:

- History of alcohol consumption from patient or other informant in units of alcohol per week; withdrawal seizures; pattern of dependent drinking using AUDIT (Alcohol Use Disorders Identification Test) - **appendix 1**.
  It is also important to enquire about other substances of misuse

- Brief physical examination.

- It is useful to check pre-detoxification bloods including FBC, U&E, LFT, γGT. Particularly deranged liver function would suggest that inpatient detoxification is indicated

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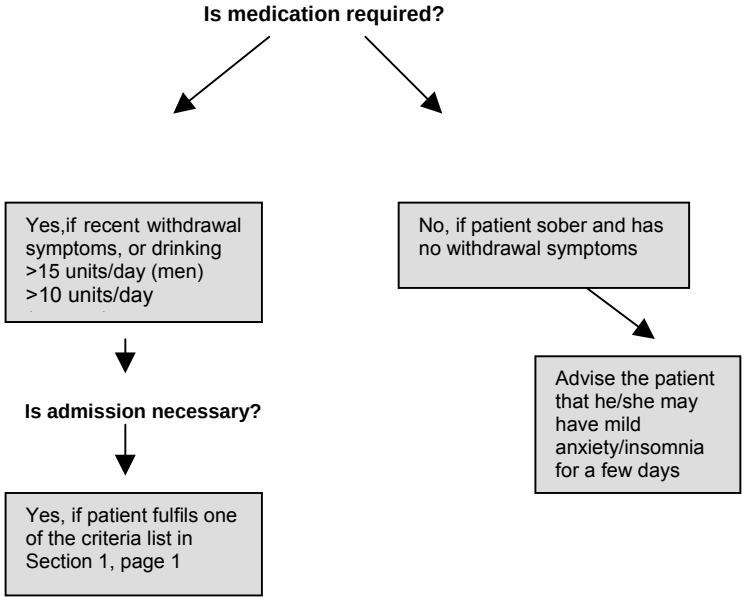
Guidance on Alcohol Dependence

- An assessment of the home situation, support available and a discussion about how people will maintain abstinence post detoxification.
- Recent weight loss and poor diet

3. Replacement of alcohol with an alternative CNS depressant

In Forth Valley, chlordiazepoxide is the agreed medicine of choice in the management of alcohol withdrawal symptoms.



The 'Standard Chlordiazepoxide Reducing Schedule' (**appendix 2**) should be prescribed. **NB. This regimen differs from the example quoted in SIGN 74 but has been agreed by the Forth Valley Alcohol Guideline Implementation Group.**

Appendix 22

Guidance on Alcohol Dependence

Benzodiazepines have sedative, anxiolytic and anticonvulsant properties. They show cross-tolerance with alcohol, which is necessary in detoxification.

Patients who are not drinking at high levels may need a smaller starting dose which may be annotated on the standard chlordiazepoxide reducing schedule as starting at day two (**appendix 2).** In the frail or elderly a lower starting dose should be considered where appropriate (e.g. 10mg instead of 20mg).

An "as required" dose of 10 - 20mg chlordiazepoxide, up to six doses in 24 hours should also be prescribed (**appendix 2**).

4. Recognition of Wernicke's Korsakoff Syndrome

Wernicke's encephalopathy is a reversible biochemical lesion of the CNS caused by overwhelming metabolic demands being made upon depleted B-vitamin reserves, in particular thiamine. Wernicke's encephalopathy is most common in chronic alcohol misusers.

Wernicke's encephalopathy is an acute illness, precipitated by alcohol withdrawal, which is often under treated or missed. It should be suspected and treated in any patients undergoing alcohol detoxification who develop confusion, memory problems or difficulties with their gait or co-ordination.

A presumptive diagnosis of Wernicke's Encephalopathy should be made in patients with **a history of alcohol abuse and one or more of the following** otherwise unexplained symptoms:

- Acute confusion
- Opthalmoplegia / nystagmus
- Ataxia/unsteadiness
- Memory disturbance
- Decreased consciousness level including unconsciousness / coma
- Unexplained hypotension with hypothermia

Korsakoff's psychosis is described as an amnesic syndrome with impaired recent memory, and relatively intact intellectual function. It occurs after one or more inadequately treated episodes of Wernicke's encephalopathy. Patients rarely have a discrete deficit in forming new memories and often present with more global deficits along a spectrum of severity.

Korsakoff's psychosis is a preventable dementia, by prompt treatment where Wernicke's is suspected, with high dose parenteral vitamin preparations. If patients undergoing Community Detoxification develop signs of Wernicke-Korsakoff syndrome they should be admitted to hospital as an emergency for parenteral vitamin treatment.

Appendix 22

Guidance on Alcohol Dependence

It is also important to elucidate, from a careful history, patients who are at risk of developing Wernicke-Korsakoff syndrome. These would include patients who have physical illness, weight loss, poor diet, diarrhoea and vomiting. These patients should also be treated with parenteral vitamins, as indicated on the prescription sheet in **Appendix 2**. It is anticipated that patients in some of these categories may be considered for community alcohol detoxification, it is therefore important to look at adequate prophylaxis with parenteral vitamins.

Prophylaxis

↓

Administer **ONE pair of IM PABRINEX Ampoules**
(High Potency Parenteral B-Complex Vitamins)
ONCE DAILY for 3 days.
(IM: Mix No 1 and No 2 amps with 100ml of normal saline or 5% glucose and infuse over 30 minutes.)

It should be noted, as per CSM advice, that there is a small risk of anaphylactic reactions with parenteral vitamin preparations. Facilities for treatment of anaphylaxis should be available, so it is anticipated that these treatments will occur in settings such as in any setting where routine vaccinations are administered.

Oral preparations of thiamine are poorly absorbed in alcohol misusers, and will not adequately replace depleted thiamine stores. They should not be used as a substitute for parenteral preparations. Patients who have a chronic alcohol problem and whose diet may be deficient, should be given oral thiamine indefinitely **after** parenteral (SIGN 74). For this group a dose of thiamine 100mg three times daily is recommended.

5. Support

During detoxification the patient will be seen twice daily for the first 3 days, and then daily for the next 2 days by the community alcohol nurse who will breathlyse daily and check observations. Severity of withdrawal symptom checklist should be used daily during detoxification: see **Appendix 3**.

6. Forward Planning

The need for inpatient alcohol detoxification means that the patient has a dependency on alcohol and by definition a severe alcohol problem. It is important that all avenues to prevent relapse are explored, and that patients are offered pharmacological, psychological and social help for their dependence.

6.1 Pharmacological Interventions

Patients should be given no more that seven days chlordiazepoxide in total. Patients who have a chronic alcohol problem and whose diet may be deficient should be given oral thiamine indefinitely. There is little evidence for this, however it is an intervention which is unlikely to lead to harm, and may be of benefit.

Appendix 22

Guidance on Alcohol Dependence

There are a number of medications that can aid maintenance of abstinence, such as acamprosate, disulfiram and naltrexone. These are detailed in separate guidance, and advice can again be gained from the Community Alcohol Nurse, about prescribing these medications.

6.2 Psychological and Social help

There are a number of agencies in Forth Valley who offer counselling and support to substance users. These include Alcoholics Anonymous (AA), Alcohol Support Counselling (ASC) and Alcohol Link.

For further details, refer to the NHS Forth Valley Guidance, Alcohol Dependence: Maintenance of Abstinence

7. References

1. Cook, C.H., Thomson, A.D., B-Complex Vitamins in the prophylaxis andtreatment of Wernicke-Korsakoff syndrome, *Br J Hosp Med 1997 ;57: 461-465*
2. .Lingford-Hughes A.R., Welch S., Nutt D.J., Evidence-based guidelines for the pharmacological management of substance misuse, addiction and comorbidity: recommendations from the BritishAssociationfor Psychopharmacology. *Journal of Psychopharmacology200418(3);293-335*
3. Mayo-Smith, M.F., Pharmacological management of alcohol withdrawal. A meta-analysis and evidenced-based practice guideline. American Society of Addiction working group on pharmacological management of alcohol withdrawal. *JAMA 1997; 278:144-51*
4. McIntosh, C., Chick, J., Alcohol and the Nervous System, *JNNP 2004;(suppl III): iii16-iii213*
5. Raistrick D., Heather N., Godfray C. Review of the effectiveness of treatment for alcohol problems. *National Treatment Agency*.
6. Scottish Intercollegiate Guidelines Network (SIGN). The management of harmful drinking and alcohol dependence in primary care, 2003
7. Slattery, J., Chick, J., et al Prevention of relapse in alcohol dependence, *Health Technology Assessment Report 3, 2003, NHS-QIS*
8. Thomson A.D., Marshall E.J., The natural history and pathophysiology of Wernicke's Encephalopathy and Korsakoff's Psychosis. *Alcohol & Alcoholism 2006 41, No 2, 151-158*
9. Thomson A.D., Marshall E.J., The treatment of patients at risk of developing Wernicke's Encephalopathy in the community, *Alcohol & Alcoholism 2006 41, No 2, 159-167*

Appendix 22

Guidance on Alcohol Dependence

Appendix 1

AUDIT (Alcohol Use Disorders Identification Test)

Circle the number that comes closest to the patient's answer

1. How often do you have a drink containing alcohol?
(0) never (1) monthly or less (2) 2-4 times a month (3) 2-3 times a week (4) 4 or more times a week

2. How many drinks containing alcohol do you have on a typical day when you are drinking?
(0) 1 or 2 (1) 3 or 4 (2) 5 or 6 (3) 7 - 9 (4) 10 or more

3. How often do you have six or more drinks on one occasion?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you had started?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

5. How often during the last year have you failed to do what was normally expected from you because of drinking?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

7. How often during the last year have you had a feeling of guilt or remorse after drinking?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
(0) never (1) less than monthly (2) monthly (3) weekly (4) daily or almost daily

9. Have you or someone else been injured as a result of your drinking?
(0) no (2) yes, but not in the last year (4) yes, during the last year

10. Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?
(0) no (2) yes, but not in the last year (4) yes, during the last year

CUMULATIVE SCORE ☐

The minimum score (for non-drinkers) is zero and the maximum possible score is 40. A score of 8 or more may indicate a strong likelihood of hazardous or harmful alcohol consumption.

Appendix 22

Appendix 2
Guidance on Alcohol Dependence

Adapted from Annex 6, SIGN 74

Advice to patients on withdrawing from alcohol at home

1. If you have been chemically dependent on alcohol, stopping drinking causes you to get tense, edgy, perhaps shaky or sweaty, and unable to sleep. There can be vomiting or diarrhoea. This "rebound" of the nervous system can be severe. Medication controls the symptoms while the body adjusts to being without alcohol. This usually takes three to seven days from the time of your last alcoholic drink. If you don't take medication, the symptoms would be worst in the first 48 hours, and then gradually disappear. This is why, if you do take medication, the dose starts high and then reduces.
2. **YOU HAVE AGREED NOT TO DRINK ALCOHOL**. You may get thirsty. Drink fruit juices and water but do not overdo it. You do not have to "flush" alcohol out of the body. More than three litres of fluid could be too much. Don't drink more than three cups of coffee or five cups of tea. These contain caffeine which disturbs sleep and causes nervousness.
3. **AIM TO AVOID STRESS**. The important task is not to give in to the urge to take alcohol. Help yourself relax by going for a walk, listening to music, or taking a bath.
4. **SLEEP.** You may find that even with the capsules, or as they are reduced, your sleep is disturbed. You need not worry about this - lack of sleep does not seriously harm you, starting to drink again does. Your sleep pattern will return to normal in a month or so. It is better not to take sleeping pills so that your natural sleep rhythm returns. Try going to bed later. Take a bedtime snack or milky drink.
5. **The capsules may make you drowsy so you must not drive or operate machinery. If you get drowsy, miss out a dose.**
6. MEALS. Even when you are not hungry, try to eat small amounts regularly. Your appetite will return.
7. **This is the recommended chlordiazepoxide reducing regime with NHS Forth Valley, when withdrawing from alcohol as an outpatient.**

	First thing	Lunch time	Tea time	Bedtime
Day 1	**20mg**	**20mg**	**20mg**	**20mg**
Day 2	**15mg**	**15mg**	**15mg**	**15mg**
Day 3	**15mg**	**15mg**		**15mg**
Day 4	**10mg**	**10mg**		**10mg**
Day 5	**5mg**	**5mg**		**5mg**
Day 6	**5mg**			**5mg**
Day 7				**5mg**

NB. Each patient will be individually assessed and in some cases a five day reducing regime with lower starting dose may be deemed appropriate.

8. The community alcohol nurse will visit twice daily for the first three days.

Appendix 22

Appendix 3
Guidance on Alcohol Dependence

Severity of Withdrawal Symptom Checklist

ORIENTATION

Fully orientated	**0**
Mildly disorientated	**1**
Obviously disorientated	**2**
Totally disorientated	**3**

LEVEL OF CONSCIOUSNESS

Fully alert	**0**
Slightly drowsy	**1**
Very drowsy	**2**
Roused with difficulty	**3**

AGITATION

No signs	**0**
Slight	**1**
Moderate restlessness	**2**
Constant restlessness	**3**

HALLUCINATIONS

No hallucinations	**0**
Unstructured	**1**
Intermittent structured	**2**
Frequent structured	**3**

SWEATING

No sweating	**0**
Slight	**1**
Moderate	**2**
Profuse	**3**

TREMOR

None	**0**
Slight	**1**
Moderate	**2**
Marked	**3**

MOOD

Cheerful/appropriate	**0**
Sometimes low	**1**
Often low	**2**
Despondent	**3**

ANXIETY

Find it easy to relax	**0**
Find it difficult to relax	**1**
Hardly ever relaxed	**2**
Cannot relax	**3**

SLEEP

Slept well	**0**
Broken sleep	**1**
Difficulty in getting to sleep	**2**
Insomnia	**3**

APPETITE

Good appetite	**0**
Fair appetite	**1**
Poor appetite	**2**
No appetite	**3**

G. I. DISTURBANCE

No abnormalities	**0**
Mild nausea	**1**
Persistent nausea	**2**
Vomiting, > 2 Occasions	**3**

COMMITMENT TO DETOX

Strong	**0**
Moderate	**1**
Slight	**2**
None	**3**

Appendix 22

Appendix 3

SEVERITY OF WITHDRAWAL SYMPTOM CHECKLIST score

		Day Of Detoxification						
	ASSESS	1	2	3	4	5	6	7
ORIENTATION								
CONSCIOUSNESS								
AGITATION								
HALLUCINATIONS								
SWEATING								
TREMOR								
MOOD								
ANXIETY								
SLEEP								
APPETITE								
G I DISTURBANCE								
COMMITMENT								
SWSC SCORE								
BLOOD PRESSURE								
PULSE								
BREATHALYSER								

Alcohol Dependence:Community Management of Alcholol Withdrawal Approved by ADTC April 2008 Version 1.5 Prepared by Alcohol Guideline Implementation Group Review Date April 2009 Pharmacist Lead:Jean Logan

Appendix 23

Guidance on the Management of Opioid Dependence

Buprenorphine: Assisted Detoxification

Buprenorphine (subutex®) is an effective safe medication for use in the treatment of opioid dependence and can be used for maintenance or detoxification. This guidance is designed for use by specialist practitioners for clients who are dependent on opiates and who seek to become abstinent.
NB. The prescribing of buprenorphine out with this guidance (e.g. for pain relief) is not supported.

1. Selection Criteria

To be considered for buprenorphine assisted detoxification clients may be:
- methadone-dependent reduced/stabilised at doses of 30mg or less
- heroin-dependent and motivated for short-term opioid withdrawal programme.

A stable immediate social environment is highly desirable with a nominated 'significant other' present.

***Exclusion criteria**:*
- under 16 years of age
- pregnancy and breastfeeding
- known hypersensitivity and/or severe side effects from previous exposure to buprenorphine
- concomitant medical conditions including: recent head injury, severe respiratory or hepatic insufficiency, acute abdominal conditions, severe renal disease
- polydrug use

Use with caution in:
- concomitant psychiatric condition
- chronic pain
- asthma or respiratory insufficiency
- renal or hepatic insufficiency

2. Assessment

A comprehensive assessment is essential to determine suitability for treatment, commence the process of client education and start the development of a treatment plan. This may be conducted over several sessions and should include (refer to checklist, appendix 1):

- Initial assessment of drug use and treatment history, risk factors and social circumstances.
- Physical and mental health assessment. Within CADS, the Medical officer completes the prescription proforma (*green form*).
- Investigations:
  - 2 x oral fluid tests to clarify or confirm drug use history
  - liver function tests to establish a pre-treatment baseline
- Provision of verbal and written information to the client on the expected course and process of the buprenorphine detoxification programme to assist with informed consent. Clients must be given an opportunity to discuss with the service provider the following topics:
  - Action, effects, side effects and administration of buprenorphine, including advantages and disadvantages over other treatment options
  - Issues related to pregnancy and contraception
  - Dangers associated with additional drug use and overdose
  - Potential impact on driving and employment
  - Duration of treatment and process
  - Circumstances in which treatment may be withdrawn or ceased

  Informed consent to treatment via a treatment agreement signed by the client will be obtained and a copy filed in the case note (appendix 2).
- Discussion of aftercare arrangements with client including the option of naltrexone maintenance treatment (refer to naltrexone guideline)
- Communication with the Community Pharmacist who has been identified to dispense the buprenorphine prescription and supervise administration in advance of prescribing. Ensure that the Pharmacist has a buprenorphine information pack.
- Confirmation of the initial dose by the prescriber and completion of prescription. Prescription must indicate daily supervised dispensing.

Appendix 23

3. Induction

It is important to establish the patient on a dose of buprenorphine which prevents opioid withdrawal, reduces the need to take additional illicit opioids and minimises side effects. **The first day of detoxification will be managed under the supervision of the keyworker.**

To ensure safe induction:

- Delay the first dose of buprenorphine until the patient is experiencing features of opioid withdrawal (appendix 3). This should be **at least 8 hours after last heroin use** or **at least 36 hours after last methadone dose**.
- Pre-treatment supervised urine screen will be undertaken:
  - If detoxifying from methadone and positive for substances other than methadone, the induction will be cancelled.
  - If detoxifying from heroin and positive for substances other than heroin, the induction will be cancelled

  If detoxification is cancelled, methadone dependent clients will be prescribed methadone at a dose determined by the medical practitioner; heroin dependent clients will be referred to Signpost.
- The prescribed doses for day one will be collected from the designated community pharmacy by the client and keyworker, then taken to the clinic where administration will be supervised.
- The initial dose of buprenorphine will be 4mg, regardless of current opiate use. A second 4mg dose will be supervised three hours after the first dose on day one.
- On day one, the client will be observed closely for 90 minutes after each supervised consumption of the buprenorphine in the clinic setting.
- The keyworker will review the client on each of the first two days. Opiate withdrawal scale (appendix 4), blood pressure and pulse will be recorded.
- The observation time will be reduced to 30 minutes after supervised consumption on day two, within the community pharmacy.

4. Detoxification Regime

The 28 day detoxification schedule (appendix 5) will be utilised, unless an alternative regimen is clinically indicated. For example, a client maintained on a methadone dose of <20mg/day may be stabilised during week one on 12 mg buprenorphine and complete in 24 days.

From day two onwards the daily doses of buprenorphine will be dispensed and supervised by the Community Pharmacist. NB. If the Pharmacy is closed on Saturday and/or Sunday, doses will be dispensed to take away on Fridays and/or Saturdays. Where possible detoxification programmes will be manged to avoid public holidays.

5. Missed Doses

If one dose of buprenorphine is missed, the client will be referred back to the clinical team and a review of the care plan will be carried out.

6. Failure to Complete the Detoxification

The clinical team will discuss the reasons for not completing the detoxification with the client. The outcome of this discussion will inform the course of action.

7. Discharge Planning

Prior to formal discharge the keyworker will:

- Continue weekly appointments with the client for a minimum of four weeks for relapse prevention advice & support. Access to structured relapse prevention will continue via on-going keyworking and group work for a further two months.
- Discuss referral to employment training agencies, where appropriate
- Discuss naltrexone further and if appropriate liaise with the GP to discuss continuation prescription & monitoring of naltrexone. Refer to naltrexone guideline

References:

1. *Guidance for the use of buprenorphine for the treatment of opioid dependence in primary care SMMGP Revised 2nd Edition 2004*
2. *Summary of Product Characteristics, buprenorphine (subutex®) www.medicines.org.uk*
3. *The Maudsley Prescribing Guidelines, 8th Edition, 2005-2006, 239-257*
4. *National Drug Strategy Australia*

Appendix 23

Guidance on the Management of Opioid Dependence

Appendix 1

Assessment checklist

Action	Responsibility	Completed (Date & Initial)	Comments
Motivation assessed	Keyworker		
Drug use/treatment history	Medical Officer		
Physical & mental health	Medical Officer		
Green Rx Proforma (CADS)	Medical Officer		
Pre prescription Checklist (FV-Tox)	Keyworker		
Prescription written & signed	Medical Officer		
Methadone Prescription suspended	Medical Officer		
Prescription Chart Completed (CADS)	Medical Officer		
Urine Drug screen	Keyworker		
Liver Function Tests	Medical Officer/ GP		
Verbal information given to client:	Medical Officer/ Keyworker		
Action and effect		(✓)	
Side effects			
Supervised administration			
Advantages and disadvantages			
Pregnancy & contraception			
Additional drug use and overdose			
Driving and employment			
Duration of treatment and process			
Treatment withdrawn/ceased			
Written information given to client	Keyworker		
Treatment agreement signed	Medical Officer/ Keyworker/client/ Pharmacist		
Nominated Pharmacist contacted	Pharmacist in Substance Misuse/keyworker		
Appointment given for initiation	Keyworker		
Information Pack given to Pharmacist	Pharmacist in Substance Misuse/keyworker		
Client introduced to Pharmacist	Keyworker		
Aftercare discussed	Keyworker		

To be completed and filed in patient notes

Appendix 23

Guidance on the Management of Opioid Dependence

Appendix 2

Buprenorphine Treatment Consent & Agreement

Client

I, …… understand and agree to the conditions of treatment :

- **I have been provided with information about buprenorphine and understand the course and process of detoxification as well as the associated risks and adverse effects.**
- To treat with respect all people I have contact with in connection with my treatment.
- I will collect my prescription from ……at a time agreed between the pharmacist and I.
- I am responsible for my prescribed medicines and if I lose them or take them other than as directed they will not be replaced.
- The pharmacist has the right to refuse to give me my prescription and if I am thought to be intoxicated.
- I understand that if I fail to collect my dose for two days or more, my prescription may stop and my addiction worker will contact me.
- I understand that I cannot have my prescriptions dispensed by any other pharmacy without renegotiating this Four-Way Agreement.
- I will keep all appointments as scheduled, on time and unaccompanied.
- I understand that I can only obtain prescriptions from the doctor named in this contract unless alternative arrangements are made.
- My prescriber will be notified in the event of non-attendance for appointments/ prescription.
- To allow sharing of relevant information by all professionals involved in my treatment and at follow-up.
- I will not take any other drugs other than those prescribed to me.
- I will participate in drug screening if requested.
- To participate in periodic reviews as necessary.

Doctor

I, the Doctor named below, understand and agree to the following conditions of treatment:

- To ensure that I treat the above named service user with respect.
- To provide adequate substitute drug treatment for the above named service user.
- To provide a clear and legible prescription that meets legal requirements for controlled drugs.
- To communicate with the Addictions Worker and/or Pharmacist who will arrange dispensing.
- To share relevant information with all professionals involved in the treatment.
- To participate in periodic reviews as necessary.

Addictions Worker

I, the addiction worker named below, understand and agree to the following conditions of treatment:

- To treat the above named service user with respect.
- To give the service user regular counselling support sessions.
- To develop a care plan with the service user designed to meet their current need.
- To refer the service user to other support services as appropriate both during and at the end of the treatment programme.
- To share relevant information with all professionals involved in the treatment.
- To participate in periodic reviews as necessary.

Pharmacist

I, the pharmacist named below, understand and agree to the following conditions of treatment:

- I agree to dispense the prescription within the following time period……..
- To ensure that all pharmacy staff treat the above named service user with respect.
- To provide the service user with information about their medicines.
- To ensure that requested supervised dispensing takes place in a private /'quiet' area of the pharmacy.
- To share relevant information with all professionals involved in the treatment.
- To participate in periodic reviews as necessary.

	Print Name	Signature	Date
Service User			
Doctor			
Addiction Worker			
Pharmacist			

Appendix 23

Guidance on the Management of Opioid Dependence

Appendix 3

SIGNS AND SYMPTOMS OF OPIATE WITHDRAWL

ANTICIPATORY	**OBJECTIVE SYMPTOMS**	**SUBJECTIVE SIGNS**
		Fear of withdrawal Anxiety Drug craving Drug seeking
Early **8-10 hours after last dose**	Sweating Yawning Rinorrhoea Lacrimation Dilated pupils	Anxiety Restlessness Nasal stuffiness Drug seeking Stomach cramps
Full	Tremor Piloerection Vomiting Diarrhoea Fever Muscle spasms	Severe anxiety Restlessness Muscle pain Drug seeking Chills Headache

Appendix 23

Guidance on the Management of Opioid Dependence

Appendix 4

The Short Opiate Withdrawal Scale

Keyworking questions to ask the client who is going through the detoxification.
Has the client suffered from any of the following conditions in the last 24 hours?

	None (0)	Mild (1)	Moderate (2)	Severe (3)
Feeling Sick				
Stomach Cramps				
Muscle Spasms / Twitching				
Feeling of Coldness				
Heart Pounding				
Muscular Tension				
Aches and Pains				
Yawning				
Runny Eyes				
Insomnia / Problems Sleeping				
Any other symptoms reported:				

Appendix 23

Guidance on the Management of Opioid Dependence

Appendix 5

Buprenorphine Dosing Regimen for Detoxification

Day	Dose
1	8 mg (4 mg BD)
2	16 mg
3	16 mg
4	16 mg
5	16 mg
6	16 mg
7	16 mg
8	14 mg
9	14 mg
10	14 mg
11	12 mg
12	12 mg
13	12 mg
14	10 mg
15	10 mg
16	10 mg
17	8 mg
18	8 mg
19	8 mg
20	6 mg
21	6 mg
22	6 mg
23	4 mg
24	4 mg
25	2 mg
26	2 mg
27	0.4 mg
28	0.4 mg

Buprenorphine should be taken in a single daily dose as a sublingual tablet (with the exception of day 1).

All Buprenorphine prescriptions to be prescribed on a supervised, daily dispensing basis with take away dose when the Pharmacy is closed.

If clinically indicated detoxification may be tailored to individual need following review by the clinical team.

Appendix 24

Guidelines On Atypical Antipsychotic Use In Elderly Dementia Sufferers

Following recent information made available through Committee on Safety of Medicines and the Chief Medical Officer regarding the possible association of stroke in elderly patients being treated with atypical antipsychotics , the Old Age Psychiatrists of Forth Valley offer the following supplementary advice and comment.

1. Stroke disease in the elderly is COMMON, affecting some 12-15% of those over 75 years of age.

2. Dementia in the elderly is COMMON, affecting 1 in 20 of those over 65yrs and rising to 1 in 5 at age 80.

3. Alzheimer's disease is the most common cause of dementia, accounting for 60% of cases.

    - 15-20% have Vascular Dementia
    - 20% have Mixed type Dementia ie. Vascular and Alzheimer's
    - 4-5% have Lewy Body Dementia, characterised by fluctuating cognition, hallucinations and Parkinsonian type symptoms. Very sensitive to antipsychotics.

4. Around 60% of patients with dementia will develop psychological and behavioural disturbances, including wandering, agitation, aggression and psychosis. These symptoms are distressing for the patient and difficult for the caregiver to manage.

5. Ideally management should be undertaken on a behavioural basis, but occasionally pharmacological intervention is necessary.

MANAGEMENT

Before commencing ANY treatment it is essential to make an accurate diagnosis and carry out some baseline investigations. We recommend early referral to specialist services as appropriate interventions at an early stage can often avoid problems later.

10% of apparent dementias are treatable and reversible e.g. vitamin deficiencies, thyroid disorders, or infective states.

Simple problems such as constipation, infection or pain control can all lead to disturbed behaviour in demented patients and should be treated with the appropriate medications, not sedatives.

Any patient with an apparent confusional state should have :

FBC, ESR, U&E's, glucose, LFT's, TFT's, Cholesterol, B12 and Folate as well as an infection screen.

Appendix 24

In addition, careful note should be made of any **VASCULAR RISK FACTORS**:

Hypertension	Diabetes	Cholesterol levels
Falls	Syncope	Smoking
History of stroke	Family History	Cardiac arrhythmias
Alcohol abuse		

Where there is doubt, a CT or SPECT scan may be helpful in confirming the diagnosis.

INTERVENTIONS

Where possible, non drug solutions should be tried first. Careful analysis of the behaviour should take place:

ANTECEDENTS

BEHAVIOUR EXHIBITED

CONSEQUENCES

This requires time and patience from staff. Alterations to the environment, the management of the patient or activities may all help.

Where behavioural methods are ineffective, further consideration should be given to the use of alternative therapies for which there is an evidence base.

SLEEP

Keeping the patient awake during the day will help nocturnal insomnia. If necessary a short course of night sedation may help.

TEMAZEPAM	10mg nocte
ZOPICLONE	3.75 – 7.5 mg nocte (On FV Formulary for Specialist initiation)

DEPRESSION

Many patients with dementia become depressed and this is often missed as a cause of agitation, sleep disturbance and social withdrawal.

MIRTAZAPINE	15mg nocte (may have benefits for sleep at this dose) (On FV Joint Formulary for continuation following Specialist initiation)
SSRIs	(Paroxetine and sertraline are not currently on FV Joint Formulary. Fluoxetine and Citalopram are on FV Joint Formulary.)

Appendix 24

AGITATION

This is a common symptom of dementia and often the result of some physical problem. Assuming that these have been investigated, patients who remain agitated may be helped by short-term use of:

TRAZADONE*	25 – 50 mg up to TID. (higher doses will cause sedation and mobility problems)
LORAZEPAM*	0.5 – 1mg up to TID (use in short term only and for more severe problems)

* *Limited evidence of benefit and prescribing is "off-licence".*

DELUSIONS AND HALLUCINATIONS

If these are thought to be due to Lewy Body Dementia, then the drugs of choice are the:

CHOLINESTERASE INHIBITORS**

Donepezil (Aricept®)
Rivastigmine (Exelon®)
Galantamine (Reminyl®)

** *Cholinesterase inhibitors are licensed for mild to moderate severity AD, with some evidence of benefit in behavioural and psychiatric symptoms and in other dementias.*

These should be commenced by Specialists only following assessment as per the local guidance.

In other cases it may be necessary to use an antipsychotic. The atypicals have a favourable side effect profile compared with the other antipsychotics, especially in the prevalence of sedation, hypotension and EPSE's.

We advise that use of atypicals in these patients is limited to SHORT TERM USE and under Specialist guidance. ONLY risperidone is licensed for use in acute psychosis. Patients therefore should be monitored carefully for the risk of stroke and their treatment plan regularly reviewed. Consideration may be given to the use of other atypicals eg quetiapine, although the risk of stroke with this medication is not established.

Appendix 24

AGGRESSION

This is one of the most difficult areas of behaviour to control and often the reason for hospitalisation or institutional care. Management should be carried out under Specialist supervision

In acute situations we would suggest ;

	LORAZEPAM*	0.5–1mg up to TID (+ or – risperidone 0.5mg)
or	TRAZADONE*	50 mg up to TID
or	CLOPIXOL	2–4 mg up to TID (for the most severe cases only)

* - *Limited evidence of benefit and prescribing is "off-license".*

All of these drugs can cause sedation and mobility problems and should only be commenced after Specialist assessment. In cases where patients are unable to tolerate these medications, further options would need to be discussed with the Specialist. Treatment is essentially based on the balance of risk and benefit. Therefore, good assessment is essential, and the patient and carer should be made aware of any increased risk.

PATIENTS ALREADY ON RISPERIDONE OR OLANZAPINE

Many patients may already be receiving these drugs**. IMMEDIATE WITHDRAWAL IS NOT RECOMMENDED.** Instead, the reason for prescribing the said medication should be reviewed and if the problem has resolved, a cautious withdrawal of the treatment should be carried out over 2–4 weeks.

Where problems recur, consider an alternative intervention, as suggested above, if the indication for an antipsychotic is unclear. For further options seek Specialist advice. The advice with all of the medications is START LOW, GO SLOW AND REGULARLY REVIEW. Take account of all risk factors that may heighten the risk of stroke and treat accordingly.

Contacts

Dr G McLean	Consultant Old Age Psychiatrist, FDRI ☎ (01324) 624000 ext 5884
D J D Jurgens	Consultant Old Age Psychiatrist, Bonnybridge Hospital ☎ (01324) 814685
Dr R Coles	Consultant Old Age Psychiatrist, Kildean Hospital ☎ (01786) 458611
Dr P Gordon	Consultant Old Age Psychiatrist, Kildean Hospital ☎ (01786) 458614
Dr L Wolff	Consultant Old Age Psychiatrist, Kildean Hospital ☎ (01786) 458614

The Community Mental Health Teams for The Elderly are based at

- Bonnybridge Hospital ☎ (01324) 811166
- Kildean Hospital ☎ (01786) 446615

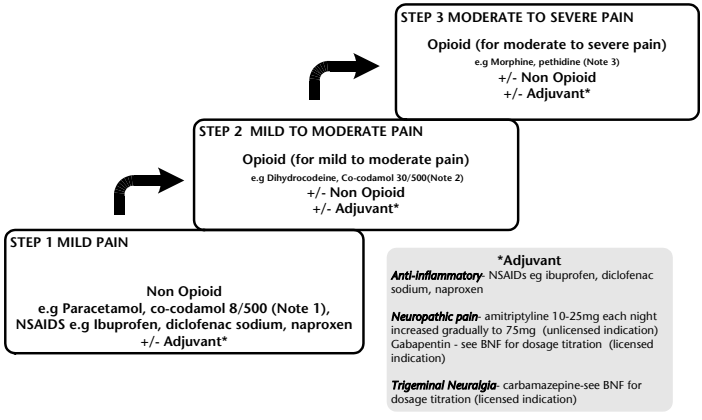
Psychogeriatric Liaison nurse

- FDRI Shona Mackie ☎ (01324) 624000 ext 5043
- SRI Chris Smith ☎ (01786) 434000 ext 4791

Appendix 25

The Use Of Oral Analgesics For Pain In Primary Care

The World Health Organisation's three-step analgesic ladder for cancer pain (see below) may also be used for non-malignant chronic or acute nociceptive pain. Analgesics should be started at the 'step' most appropriate to the patient's level of pain. Decision on analgesic choice depends on the type of pain, patient factors and supporting clinical evidence. For pain that is present constantly, analgesia should be prescribed regularly and not on an "as required" basis. For more detailed guidance on the management of pain in palliative care- Please refer to the *Forth Valley Palliative Care guidelines and specialist formulary.*



NOTE 1:
Compound analgesics containing a low dose of opioid (e.g 8mg of codeine phosphate per tablet) are commonly used, but the advantages have not been substantiated. Effervescent preparations of compound analgesics may contain high levels of sodium. For patients requiring low sodium intake please refer to individual Summary of Product Characteristics.

NOTE 2:
Prescribe regular laxatives when opioids are being taken regularly

NOTE 3 : Advice regarding strong opioids
Use oral route first, start with normal release oral morphine eg 5-10mg every 4 hours and as required for breakthrough pain. A 2.5mg dose may be enough in the elderly or those with renal impairment. Consider alternative opioids ony if experiencing side effects to morphine or can no longer manage oral route
Every patient on regular opioid should have access to breakthrough analgesia (equivalent to 1/6th total dose oral morphine).Reserve use of pethidine for short term use- eg changing of painful dressings. Start regular laxative and prophylactic ant-emetic as required for 7-10 days

Date of Approval June 2006
Review Date June 2007
References BNF March 2006,
Relief of Pain and Related Symptoms – The Role of Drug Therapy - Scottish Partnership Agency

Pharmacist Lead: Moira Baillie

Appendix 26

FVAH Recommendations For The Use Of Post-Operative Analgesia

Equivalent doses of morphine by different routes: Oral dose approximately double IM dose IV dose quarter to half IM dose

Severe Pain

Paracetamol + NSAID**
+ Morphine

** **Refer to NSAID Prescribing**

First line: Ibuprofen
Second line: Diclofenac

Contact Acute Pain Service page 100 for further advice

Pregnancy/Breastfeeding
Dihydrocodeine not recommended in pregnancy/breastfeeding
Codeine not recommended in breastfeeding
Contact Women & Children Pharmacist Page 974 / 802 for advice

Moderate Pain

Paracetamol + NSAID**
+ Dihydrocodeine*
(*Pregnancy/breastfeeding see above)

Mild Pain

Paracetamol + NSAID**
+/- Dihydrocodeine*
(*Pregnancy / Breastfeeding see above)

Points To Remember

- Analgesia should be initiated at the level most appropriate to the patient and then increased or decreased accordingly.
- Analgesia should be prescribed and administered regularly for optimal pain relief. Paracetamol and Non-steroidal Anti-inflammatory Drugs (NSAIDs) should be prescribed via the oral or rectal route.
- Morphine and Dihydrocodeine should be titrated to achieve desired effect in each patient.
- All regular analgesia should be reviewed every 48 hours and before discharge.

Written by FVAH Acute Pain Team–June 2007

Pharmacist Lead: Karen Macdonald

Appendix 27

Acute Services
Phenytoin Loading Guidelines For Status Epilepticus

Parenteral Phenytoin is an antiepileptic used for the control of status epilepticus and seizures due to head trauma. **These guidelines apply to adults only**.

Drug Presentation:
Phenytoin is available as a 50mg/ml (250mg/5ml) injection. If the injection or infusion has precipitated or is hazy it should be discarded.

- Continuous ECG monitoring is mandatory when administering this drug.
- For administration on designated areas only - A&E, Intensive Care areas, Acute Admissions Unit.

Status Epilepticus-Loading Dose
1. For patients not previously receiving phenytoin **:** 18mg/kg

2. If phenytoin is present and a concentration measurement is available :
Target concentration = (80 – measured concentration (μmol/L))

Dose (phenytoin sodium) = target concentration(μmol/L) x 0.18mg/kg

Status Epilepticus -Top Up Dosing

The following table gives the expected rise in concentration (μmol/L) for various "top-up" loading doses given to patients with different weights.
e.g. for a 70kg patient with a measured concentration of 39μmol/L, an additional 500mg will result in a concentration of around 79μmol/L (39+40)

Dose	Weight			
	50kg	60kg	70kg	80kg
250mg	28	24	20	18
500mg	56	48	40	36
750mg	84	72	60	54

Preparation:
Dilute with sodium chloride 0.9% to a maximum concentration of 10mg/ml e.g. 1000mg in 100ml.

The solution must be given immediately.

Administration:
DO NOT ADMINISTER INTRAMUSCULARLY

Intravenous Bolus:
Rate should **NOT** exceed 50mg/min (e.g. 20 minutes for a 70kg patient receiving 1000mg). Administer into a large vein via a large gauge needle or IV catheter.

Intravenous Infusion:
Rate should NOT exceed 50mg/min. The infusion must be completed within one hour. Administer via an in-line filter (0.22-0.5micron) which is available on the ward.Sterile saline should be administered prior to and following phenytoin administration through the same access site to avoid local irritation and to ensure adequate venous flow.

Appendix 27

Important Side-effects:
CNS and cardiac depression, hypotension, local tissue irritation, arrhythmias. Cardiac resuscitation equipment should be available.

Monitoring:
ECG, blood pressure, signs of respiratory depression.
Blood levels should only be taken if the patient shows signs of toxicity or is uncontrolled. This should be taken immediately prior to the next dose and levels of 10-20mg/litre or 40-80micromoles/litre aimed for.

References:
1. British National Formulary
2. Manufacturers Datasheet Compendium 1999/2000.
3. Handbook of Clinical Drug Data, 8th Edition, 1997-98.
4. A Thomson, Clinical Pharmacokinetics Unit, Glasgow, November 1995

Appendix 27

Acute Services
Phenytoin Guidelines For Maintenance therapy

Maintenance Dose : 5mg/kg/day (IV or oral as appropriate)

Monitoring Concentrations

Target Range : 40 – 80 μmol/L

Sampling Time : predose not critical
Ideally samples should be taken after at least 5 days of maintenance therapy but may be taken earlier if toxicity is suspected or if a patient fails to respond. Steady state may not be reached until 2-3 weeks treatment at a constant dose.

Dose Adjustment
The relationship between phenytoin dose and steady state concentration is non-linear i.e. when the dose is doubled the concentration will increase disproportionately. The following guidelines may be useful if a dosage adjustment is clinically indicated.

Concentration (μmol/L)	Dose	Dose Increase
<20	<4mg/kg/day	100mg
<20	4.5-6.0mg/kg/day	check compliance
20-40	4.5-6.0mg/kg/day	50mg
20-40	>6mg /kg/day	check compliance
>40		25mg

If the patient is poorly controlled a loading dose may be appropriate (oral or IV) - see "top –up dosing" in phenytoin loading guideline.

Phenytoin Formulations
Phenytoin sodium 100mg capsules/tablets/ injection = phenytoin suspension 90mg in 15ml

Factors Affecting Phenytoin Concentrations

Protein Binding Binding can be reduced in renal impairment, hypoalbuminaemia and pregnancy. This affects the interpretation of concentration measurements.

The following equation can be used to correct the total phenytoin concentration for low albumin:

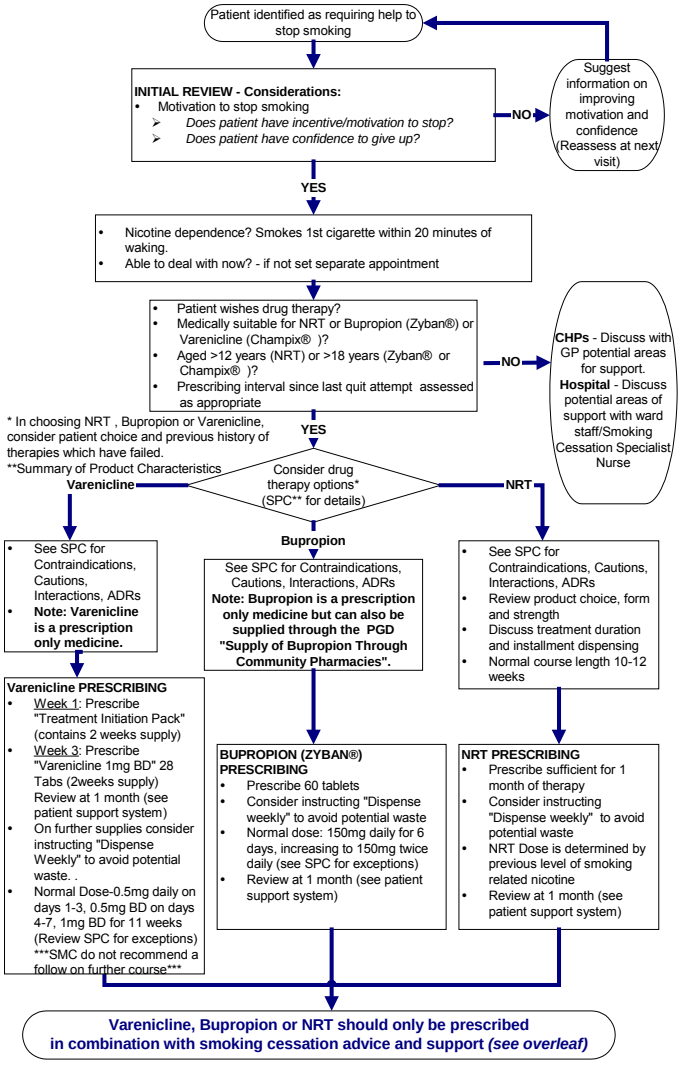
$$\text{Corrected concentration} = \frac{\text{Concentration observed}}{(0.9 \times \text{albumin concentration} / 44\ \text{g/L}) + 0.1}$$

Drug Interactions
Phenytoin concentrations can be increased or decreased by other drugs. Check the current BNF for details.

References:
1. British National Formulary
2. Manufacturers Medicines Compendium 2004.
3.A Thomson, Clinical Pharmacokinetics Unit, Glasgow, November 1995

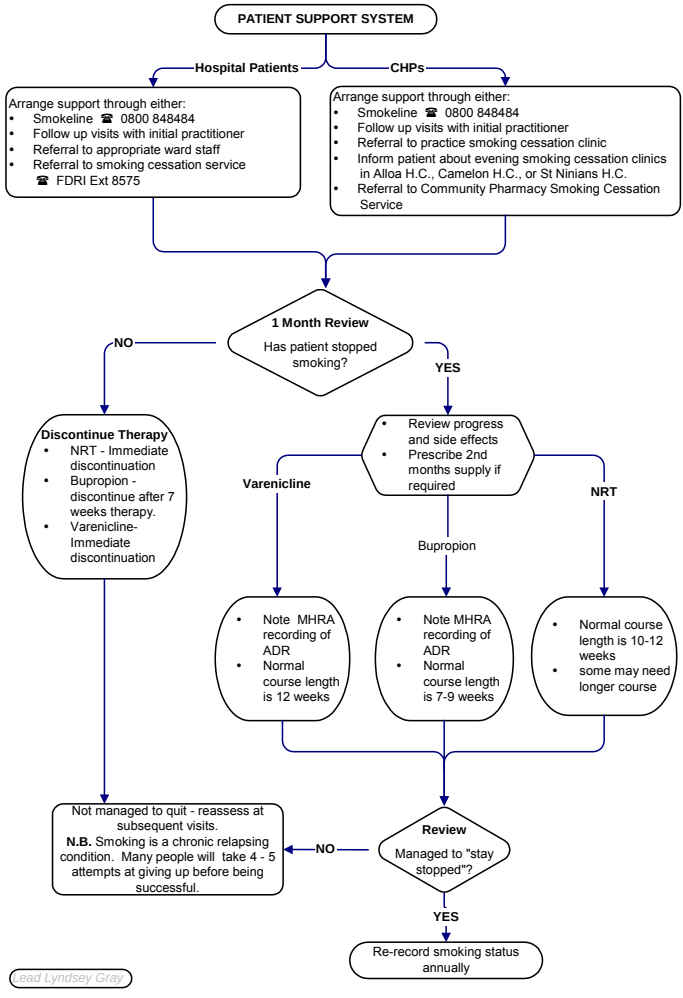
Appendix 28

Smoking Cessation Flow Chart 1



Appendix 28

Smoking Cessation Flow Chart 2



Appendix 29

PRIMARY CARE MANAGEMENT OF INFECTION GUIDANCE

Aims

- ❑ to provide a simple, best guess approach to the treatment of common infections
- ❑ to promote the safe, effective and economic use of antibiotics
- ❑ to minimise the emergence of bacterial resistance in the community

Principles of Treatment

1. This guidance is based on the best available evidence but its application must be modified by professional judgement.
2. Prescribe an antibiotic only when there is likely to be a clear clinical benefit
3. Do not prescribe an antibiotic for viral sore throat, simple coughs and colds.
4. Limit prescribing over the telephone to exceptional cases.
5. Use simple generic antibiotics first whenever possible.
6. The use of new and more expensive antibiotics (eg quinolones and cephalosporins) is inappropriate when standard and less expensive antibiotics remain effective as they increase the risk *of clostridium difficile*, MRSA and resistant UTIs.
7. Avoid widespread use of topical antibiotics (especially those agents also available as systemic preparations).
8. In pregnancy AVOID tetracyclines, aminoglycosides, quinolones, *high dose* metronidazole. Short-term use of trimethoprim (theoretical risk in first trimester in patients with poor diet, as folate antagonist) or nitrofurantoin (at term, theoretical risk of neonatal haemolysis) is unlikely to cause problems to the foetus.
9. Clarithromycin is an acceptable alternative in those who are unable to tolerate erythromycin because of side effects.
10. Patients on simvastatin (any dose) should not receive concurrent treatment with clarithromycin or erythromycin. Patients on doses of atorvastatin > 20mg/day should not receive concurrent treatment with clarithromycin. Possible options are: Stop statin for duration of antibiotic course; use alternative antibiotic e.g. doxycline; change statin to pravastatin for duration of antibiotic course.
11. Where a 'best guess' therapy has failed or special circumstances exist, microbiological advice can be obtained via the hospital switchboard (01324 624000 for Falkirk or 01786 434000 for Stirling)

Note: ***Doses are oral and for adults unless otherwise stated. Please refer to BNF or BNF for Children for further information***

Appendix 29

Key

The strength of each recommendation is qualified by a letter in parenthesis.

Study design	Recommendation grade
Good recent systematic review of studies	A+
One or more rigorous studies, not combined	A-
One or more prospective studies	B+
One or more retrospective studies	B-
Formal combination of expert opinion	C
Informal opinion, other information	D

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
UPPER RESPIRATORY TRACT INFECTIONS: Consider delayed antibiotic prescriptions.[A-]				
Influenza *Influenza*	**Annual vaccination is essential for all those at risk of influenza**. For otherwise healthy adults the use of antivirals is not recommended unless advised by Public health Consultants during an epidemic. Treat 'at risk' patients, only when influenza is circulating in the community, within 48 hours of start of symptoms, ie those aged 65 years or over, chronic respiratory disease (including COPD and asthma) significant cardiovascular disease (not hypertension), immunocompromised, diabetes mellitus and chronic renal or liver disease.			
	Patients over 12 years	Oseltamavir Or Zanamivir	75 mg bd 10mg (2 inhalations by diskhaler) BD	5 days
Pharyngitis / sore throat / tonsillitis *Prodigy* *Sign*	**The majority of sore throats are viral; most patients do not benefit from antibiotics.** Patients with 3 of 4 centor criteria (history of fever, purulent tonsils, cervical adenopathy, absence of cough) or history of otitis media may benefit more from antibiotics.[A-] Antibiotics only shorten duration of symptoms by 8 hours.[A+] You need to treat 30 children or 145 adults to prevent one case of otitis media.[A+] Seven days treatment gives less relapse than three days.[B+]			
	Recent evidence indicates that penicillin 500 mg for 7 days is more effective than 3 days.[B+] Twice daily higher dose can also be used.[A-] QDS may be more appropriate if severe.[D]	*1st line* phenoxy-methylpenicillin	500 mg BD-QDS	10 days
		erythromycin *if allergic to penicillin*	500 mg BD or 250 mg QDS (QDS less side-effects)	10 days

Appendix 29

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
Otitis media *(child doses)*	**Many are viral. Resolves in 80% without antibiotics.**[A+] Poor outcome unlikely if no vomiting or temp <38.5°C.[A-] Use NSAID or paracetamol.[A-] Antibiotics do not reduce pain in first 24 hours, subsequent attacks or deafness.[A+] Need to treat 20 children >2y and seven 6-24m old to get pain relief in one at 2-7 days.[A+B+] Haemophilus is an extracellular pathogen, thus macrolides, which concentrate intracellularly, are less effective treatment.	*1st line* amoxicillin **or**	***40mg/kg/day in 3 divided doses. Maximum 1g tds***	5days*
Prodigy		erythromycin *if allergic to penicillin* *2nd line* co-amoxiclav	<2 yrs 125 mg QDS 2-8 yrs 250 mg QDS Other: 250-500 mg QDS 1-6 yrs 156 mg TDS 6-12 yrs 312 mg TDS	5 days* 5 days*
Rhinosinusitis acute or chronic *Prodigy*	**Many are viral. Symptomatic benefit of antibiotics is small** - 69% resolve without antibiotics; and 84% resolve with antibiotics.[A+] Reserve for severe[B+] or persistent symptoms (>10 days). Cochrane review concludes that phenoxymethyl-penicillin has similar efficacy to the other recommended antibiotics.	Phenoxy-methylpenicillin[A+] **or** amoxicillin[A+] **or** oxytetracycline **or** erythromycin **or** doxycycline	500 mg BD 500 mg TDS 250 mg QDS 250 mg QDS/500mg BD 200 mg stat/100 mg OD	7 days
	If failure to respond to first line antibiotics	co-amoxiclav **or** ciprofloxacin plus metronidazole	625 mg TDS 250 – 500 mg BD 400 mg BD	7 days 7 days 7 days

*** Standing Medical Advisory Committee guidelines suggest 3 days. In otitis media, relapse rate is slightly higher at 10 days with a 3 day course but long-term outcomes are similar.**[A+.]

Appendix 29

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
LOWER RESPIRATORY TRACT INFECTIONS				
Note: ***Avoid tetracyclines in pregnancy. Low doses of penicillins are more likely to select out resistance. Ciprofloxacin has poor activity against pneumococci and should not be used first line. Obtain sputum for culture if possible but do not delay starting treatment. Penicillin allergic patients on simvastatin or atorvastatin (>20mg) should have doxycycline rather than clarithromycin due to risk of drug interaction.***				
Acute bronchitis	Systematic reviews indicate antibiotics have marginal benefits in otherwise healthy adults.[A+] Patient leaflets can reduce antibiotic use.[B+]	amoxicillin or clarithromycin if penicillin allergy *2nd line* ciprofloxacin if either of the above 2 fail	500 mg TDS 500 mg BD 500mg BD	5 days 5 days 5 days
Acute exacerbation of COPD	Antibiotics indicated if 2 of the following 3 symptoms present: increased dyspnoea, purulent sputum, increased sputum volume.[B+] **Antibiotics particularly indicated if purulent/mucopurulent sputum.[B+]**	amoxicillin or clarithromycin if penicillin allergy *2nd line* ciprofloxacin	500 mg TDS 500mg BD 500mg BD	5 days 5 days 5 days
Community-acquired pneumonia - treatment in the community *BTS* *Pneumonia Guidelines*	**Start antibiotics immediately.[B-]** If no response in 48 hours consider admission or chest X- ray Or add clarithromycin first line or a tetracycline second line to cover mycoplasma infection (rare in >65 years) In severely ill give parenteral benzylpenicillin 1.2g before admission[C] If no response to antibiotics after 2 weeks consider possibility of lung cancer or tuberculosis and arrange chest X - ray	amoxicillin or clarithromycin or doxycycline	500 mg - 1g TDS 500 mg BD 200mg stat. then 100mg daily	Minimum duration 7 -10 days

Appendix 29

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
Bronchiectasis	Suggested by recurrent infections or ongoing purulent sputum. Sputum culture essential to identify causative organism.	amoxicillin or clarithromycin or ciprofloxacin or doxycycline	500-1000mg TDS or 3g bd 500mg BD 750mg BD 100-200mg OD	10-14 days 10-14 days 10-14 days 10-14 days
URINARY TRACT INFECTIONS UTI quick reference guide				
Note:. *Amoxicillin resistance is common, therefore ONLY use if culture confirms susceptibility. In the elderly (>65 years), do not treat asymptomatic bacteriuria; it occurs in 25% of women and 10% of men and is not associated with increased morbidity.*[B+] *In the presence of a catheter, antibiotics will not eradicate bacteriuria; only treat if systemically unwell or pyelonephritis likely.*				
Uncomplicated UTI ie no fever or flank pain	In otherwise healthy women with symptoms of UTI, treat empirically with antibiotics. Extended spectrum beta-lactamase enzymes are increasing so perform culture in all treatment failures Use urine dipstick to exclude UTI. –ve nitrite and leucocyte 95% negative predictive value. Use urine culture to confirm diagnosis.	trimethoprim[B+] or nitrofurantoin[A-]	200 mg BD 50-100 mg QDS	3 days[B+]
UTI quick reference guide		*2nd line* - depends on susceptibility of organism isolated e.g. amoxicillin, cefalexin, co-amoxiclav, quinolone,		
Recurrent UTI women ≥ 3/yr	Post coital prophylaxis is as effective as prophylaxis taken nightly.	nitrofurantoin or trimethoprim	50 mg 100 mg	Stat post coital or od at night
UTI in pregnancy and men	Suggest MSU for susceptibility testing. Short-term use of trimethoprim or nitrofurantoin in pregnancy is unlikely to cause problems to the foetus.[B+]	nitrofurantoin **or** trimethoprim *2nd line* cefalexin or amoxicillin	50 mg – 100 mg QDS 200 mg BD 500 mg BD 250 mg TDS	7 days 7 days 7 days 7 days

Appendix 29

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
UTI in Children	Send MSU for culture and susceptibility. Waiting 24 hours for results is not detrimental to outcome.[A-]	trimethoprim or nitrofurantoin or cefalexin If susceptible, amoxicillin	See BNF for dosage	7 days[A+]
Acute prostatitis	4 weeks treatment may prevent chronic infection. Quinolones are more effective than trimethoprim.	ofloxacin[C] or ciprofloxacin or trimethoprim[C]	200 mg BD 500 mg BD 200 mg BD	28 days 28 days 28 days
Acute pyelonephritis	A recent RCT showed 7 days ciprofloxacin was as good as 14 days co-trimoxazole.[A-] If no response within 24 hours admit. Send MSU for culture	ciprofloxacin[A-] or co-amoxiclav If susceptible, trimethoprim	500 mg BD 625 mg TDS 200 mg BD	7 days[A-] 14 days 14 days
MENINGITIS				
Suspected meningococcal disease *HPA* *SIGN 102*	**Transfer all patients to hospital immediately. Administer benzylpenicillin prior to admission, unless history of anaphylaxis,[B-] NOT allergy. Ideally IV but IM if a vein cannot be found.**	IV or IM benzylpenicillin IV or IM cefotaxime (if history of penicillin allergy)	Adults and children *10 yr and over:* 1200 mg *Children* 1 - 9 yr: 600 mg *Children* <1 yr: 300 mg *Children < 12 years: 50mg/kg* *Adults and children >12 years:1g*	
Prevention of secondary case of meningitis	Only prescribe following advice from Public Health Doctor – telephone 01786 457260 (9am – 5pm) Out of hours: Call switchboard at FDRI (01324 624000) or SRI (01786 434000) and ask for Public Health Doctor on call			
GASTRO-INTESTINAL TRACT INFECTIONS				
Eradication of *Helicobacter pylori* *Quick Reference Guide* *NICE*	Eradication is beneficial in DU, GU and low grade MALTOMA, but NOT in GORD.[A] In NUD, 8% of patients benefit. Triple treatment attains >85% eradication.[A+] Metronidazole is significantly	*First line* PPI lansoprazole or omeprazole PLUS amoxicillin PLUS either clarithromycin or metronidazole	30 mg BD 20mg BD or 40mg OD 1g BD 500 mg BD 400mg BD	**All for 7 days** **(14 days in relapse or maltoma)**

Appendix 29

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
	cheaper than Clarithromycin. In penicillin allergy use Clarithromycin and metronidazole. DU/GU: Re-test (breath test **not** serology) for helicobacter if symptomatic. Functional dyspepsia: Do not retest, treat as functional dyspepsia. In confirmed treatment failure, consider referral to Gastroenterologist. Treatment failure usually indicates bacterial resistance or poor compliance			
Symptomatic relapse				
Gastroenteritis *Prodigy*	Fluid replacement essential. **Antibiotic therapy is not usually indicated as it only reduces diarrhoea by 1-2 days**[B+] and can cause resistance.[B+] and increases the risk of c.diff Initiate treatment, on advice of microbiologist, if the patient is systemically unwell. Please notify suspected cases of food poisoning to, and seek advice on exclusion of patients from, Public Health Doctor on 01786 457260 Send stool samples in these cases.			
Traveller's diarrhoea	**Limit prescription of antibacterial to be carried abroad** and taken if illness develops to people travelling to remote areas and for people in whom an episode of infective diarrhoea could be dangerous. (ciprofloxacin 500 mg single dose)			

Appendix 29

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
Threadworms *Prodigy*	Treat household contacts. Advise morning shower/baths and hand hygiene. Use piperazine in children under 2 years.	mebendazole or piperazine	Adult & Child > 2 yrs 100mg as single dose 1-6 years 5ml level spoonful stat 3months – 1 year 2.5ml level spoonful stat	Repeat after 14 days
SKIN / SOFT TISSUE INFECTIONS				
Impetigo *Prodigy*	*Systematic review indicates topical and oral treatment produces similar results*[A+]	*First line* flucloxacillin or erythromycin *if allergic to penicillin*	Oral 500 mg QDS	7 days
	As resistance is increasing reserve topical antibiotics for very localised lesions[C or D.] Reserve Mupirocin for MRSA	*Fusidic acid* *Mupirocin*	*Topically qds* *Topically qds*	**5 days** **5 days**

Appendix 29

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
Acne Vulgaris	Consider topical antibiotics after topical benzoyl peroxide or azeleic acid Use alone or in combination with benzoyl peroxide, retinoids or zinc. Other antimicrobials may be beneficial if topical treatments fail. Do not routinely use topical and oral. (Use of Isotrexin gel with oral erythromycin is an option)	*Topical* Clindamycin or Erythromycin Or *Oral* Erythromycin Or Doxycyline Or Oxytetracycline Or Lymecycline	Apply bd 500mg BD 100mg OD 500mg BD 408mg OD	Treat for at least 6 months Assess effect after 3 months. Continue for at least 6 months if effective
Eczema *Prodigy*	Using antibiotics, or adding them to steroids, in eczema does not improve healing unless there are visible signs of infection.			
Cellulitis	If patient afebrile and healthy other than cellulitis flucloxacillin may be used as a single drug treatment. If febrile and ill, admit for IV treatment Facial cellulitis use co-amoxiclav[C]	Flucloxacillin Or *In penicillin allergy* Erythromycin alone Co- amoxiclav	500mg QDS 500mg QDS 625mg TDS	7 – 14 days 7 - 14 days 7-14 days
Leg ulcers *Prodigy*	Bacteria will always be present. **Antibiotics do not improve healing.**[A+] Culture swabs and antibiotics are only indicated if diabetic or there is evidence of clinical infection such as inflammation/redness/cellulitis; increased pain; purulent exudate; rapid deterioration of ulcer or pyrexia.			
	Diabetic leg ulcer Refer for specialist opinion if severe infection.	co-amoxiclav	625 mg TDS	7days and review

Appendix 29

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
Lymphorrhea	Lymphoedema and cellulitis with systemic symptoms of infection. Patients with persistent infection or frequent recurrence may require prophylactic phenoxymethyl penicillin.	amoxicillin If evidence of Staph.aureus (folliculitis, pus, crusting) add Flucloxacillin Clindamycin if allergic to penicillin	500mg tds 500mg QDS 300mg qds	For at least 14 days after clinical response
Animal bite Prodigy Human bite	Surgical toilet most important. Assess tetanus and rabies risk. Antibiotic prophylaxis advised for – puncture wound; bite involving hand, foot, face, joint, tendon, ligament; immuno-compromised, diabetics, elderly, asplenic Antibiotic prophylaxis advised. Assess HIV/hepatitis B & C risk	*First line animal & human prophylaxis and treatment* co-amoxiclav[B-] If penicillin allergic: *metronidazole PLUS doxycycline or oxytetracycline (animal)* or clarithromycin (human) and review at 24 & 48 hrs	625 mg TDS 200-400 mg TDS 100 mg BD 250-500 mg QDS 500 mg BD	7 days
Conjunctivitis Prodigy	**Most bacterial infections are self-limiting** (64% resolve on placebo[A+]). They are usually unilateral with yellow-white mucopurulent discharge. Fusidic acid has less Gram-negative activity	chloramphenicol 0.5% drops + 1% ointment fusidic acid 1% gel	1 drop 2 hrly reducing to QDS at night Apply drops BD	Continue all for 48 hours after resolution
Scabies Prodigy	Treat whole body including scalp, face, ears and under nails. Treat household contacts.	permethrin[A+] 5% cream	2 applications one week apart	

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ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
Dermatophyte infection of the proximal fingernail or toenail - for children seek advice	Take nail clippings: Start therapy only if infection is confirmed by laboratory. Idiosyncratic liver reactions occur rarely with terbinafine.	5% amorolfine nail lacquer[B-] (for superficial) terbinafine[A-]	1-2x/weekly 250 mg OD	6 months for fingers 12 months for toes 6 – 12 weeks fingers 3 – 6 months toes
	For infections with yeast and non-dermatophyte mould use itraconazole[C] Can also be used for dermatophytes	itraconazole	200 mg BD for 7 days monthly	fingers 2 courses toes 3 courses
Dermatophyte infection of the skin *Prodigy*	Take skin scrapings for culture. Treatment: 1 week terbinafine is as effective as 4 weeks azole. [A-]If intractable consider oral itraconazole. Discuss scalp infections with specialist.	Topical 1% terbinafine [A+] Topical undecenoic acid or 1% azole[A+]	OD - BD 1-2x/daily	1 week[A+] 4 – 6 weeks[A+]
Herpes zoster/ Chicken pox & Varicella zoster/ Shingles *Prodigy*	If pregnant seek advice re treatment and prophylaxis. Chicken pox: Clinical value of antivirals minimal unless immuno-compromised, severe pain, adult, on steroids, secondary household case **AND** treatment started <24h of onset of rash.[A-] Shingles: Always treat ophthalmic. Non-ophthalmic: Treat > 60years if < 72 h of onset of rash, as post-herpetic neuralgia rare in < 50yrs but occurs in 20%>60yr[A+]	*1st line* - aciclovir *2nd line* - famciclovir	800 mg 5x/day 250mg TDS Child doses – see BNF	7 days

Appendix 29

GENITAL TRACT INFECTIONS – UK NATIONAL GUIDELINES

Chlamydia quick reference guide Vaginal discharge quick reference guide

Note: *Refer patients with Sexually Transmitted Diseases, to GUM clinic for contact tracing. Telephone 01324 616159 (Falkirk) or 01786 463448 (Stirling) to arrange an appointment.*

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
Syphilis	**Refer all positive blood tests indicating "syphilis" to GUM clinic by telephone without treatment.**			
Gonorrhoea	**Gonococcal infection now presenting with less discharge in men and women. Patients may develop pain and swelling (e.g. PID, arthritis, epididymo-orchitis).** **Refer all positive cultures to GUM clinic by telephone and seek advice on treatment**			
Non-gonococcal urethritis	**Characterised in men by dysuria and mucoid/mucopurulent urethral discharge.** **Refer to GUM clinic by telephone and seek advice on treatment e.g azithromycin 1g stat**			
Chlamydia trachomatis Chlamydia quick reference guide	Samples should be taken before treatment. Positive cases should be referred to the GUM clinic Patients with symptoms, i.e. pelvic pain in women, scrotal pain or urethral discharge in men, refer within 2-3 days. Tetracyclines are contra-indicated in pregnancy. Treat partners	Doxycycline[A+] or Oxytetracycline[A-] Azithromycin[A+] (Erythromycin[A-] -less efficacious than doxycykine	100mg BD 500mg QDS 1g stat I hr before or 2 hrs after food 500mg BD 500mg QDS	7 days 7 days (14 if epididymo-orchitis) 14 days 7 days
Pelvic Inflammatory Disease (PID)	**Patients with symptoms should be referred to GUM clinic or A&E by telephone without treatment.** **Essential to test for *N. gonorrhoea* (as increasing antibiotic resistance) and chlamydia.** Microbiological and clinical cure are greater with ofloxacin than with doxycyline[A+]	Metronidazole + ofloxacin[B] Or Metronidazole + doxycline[B]	400mg bd 400mg bd 400mg bd 100mg bd	14 days 14 days 14 days 14 days

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Genital Herpes	Start treatment immediately. Do not attempt vaginal or preputial examination if primary attack. Telephone GUM clinic or A&E for **urgent** referral.	aciclovir	200mg five times daily	5 days
Vaginal candidiasis	Exclude genital Herpes on inspection before making diagnosis of Candida infection. All topical and oral azoles give 80-95% cure.[A-] In pregnancy avoid oral azole.[B]	clotrimazole 10% or clotrimazole or fluconazole	5 g vaginal cream 500 mg pessary 150 mg orally	stat stat stat
Bacterial vaginosis	Patients with few symptoms do not require treatment. A 7 day course of oral metronidazole is slightly more effective than 2 g stat.[A+] Avoid 2g stat dose in pregnancy. Topical treatment gives similar cure rates[A+] but is more expensive.	metronidazole[A+] *or* metronidazole 0.75% vag gel[A+] *or* clindamycin 2% cream[A+]	400 mg BD 5 g applicatorful at night 5 g applicatorful at night	7 days 5 days 7 days

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Trichomoniasis	Refer to GUM. Treat partners This condition is now uncommon. In pregnancy avoid 2g single dose metronidazole. Topical clotrimazole gives symptomatic relief not cure	metronidazole[A-] *clotrimazole*	400 mg BD or 2 g in single dose 100 mg pessary	5 days stat 6 days

Appendix 30

Acute Care Management of Infection Guidance for Forth Valley Hospitals

Antibiotic Prescribing Guidelines Forth Valley Hospitals

June 2008

Aims

- ❑ To provide a simple, best guess approach to the treatment of common infections
- ❑ To minimise the emergence of bacterial resistance
- ❑ To encourage the rational and cost-effective use of antibiotics

Principles of Treatment

1. This guidance is based on the best available evidence but its application must be modified by professional judgement.
2. Prescribe an antibiotic only when there is likely to be a clear clinical benefit
3. The use of new and more expensive antibiotics (eg quinolones and cephalosporins) is inappropriate when standard and less expensive antibiotics remain effective
4. Avoid widespread use of topical antibiotics (especially those agents also available as systemic preparations).
5. Clarithromycin is an acceptable alternative in those who are unable to tolerate erythromycin because of side effects.
6. Where a 'best guess' therapy has failed or special circumstances exist, contact microbiology.
7. Consider patient factors eg. History of allergy, renal and hepatic function, resistance to infection (ie whether immunocompromised), severity of illness, ethnic origin, age and if female, whether pregnant, breast-feeding or taking an oral contraceptive. In pregnancy AVOID Tetracyclines, Aminoglycosides, Quinolones, *high dose* Metronidazole, Trimethoprim (in first trimester, as Folate antagonist) and Nitrofurantoin (at term, risk of neonatal haemolysis).

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8. Consider the known or likely organism and its antibacterial sensitivity
9. Patients on simvastatine (any dose) should not receive concurrent treatment with clarithromycin or erythromycin. Patients on doses of atorvastatin > 20mg/day should not receive concurrent treatment with clarithromycin. Possible options are : Stop statin for duration of antibiotic course; use alternative antibiotic e.g. doxycycline; change statin to pravastatin for duration of antibiotic course.

Notes

1. This Model has been adapted to take cognisance of relevant national guidelines and local sensitivity patterns.
2. Doses are oral and for adults unless otherwise stated assuming normal renal and hepatic function.
3. Please refer to BNF and Summary of Product Characteristics for further information.
4. Accepted for use by The Antimicrobial Management Team.
5. Review date: June 2009.

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Surgical Antibiotic Prophylaxis – New Guidance expected from SIGN August 2008- Update will be added to Intranet site

	FIRST CHOICE	ALTERNATIVE	PREVIOUS TRUE ** PENICILLIN ALLERGY	COMMENTS
Arterial	Co-amoxiclav 1.2g IV	Cefuroxime 1.5g IV	Clarithromycin 500mg IV + Gentamicin 2mg/kg IV	Repeat intra-operatively if prolonged procedure. Continue for 48 hours if prosthesis used
ERCP	Ciprofloxacin 750mg oral	Co-amoxiclav 1.2g IV		Oral Ciprofloxacin 60 – 90 minutes before procedure
Biliary	Co-amoxiclav 1.2g IV	Ciprofloxacin 750 mg oral		Repeat intra-operatively if prolonged procedure. Oral Ciprofloxacin 60 – 90 minutes before procedure
Urology	Ciprofloxacin 500mg oral	Co-amoxiclav 1.2g IV		Indicated in clean procedures (potentially contaminated e.g. ureter, TURP, urethrotomy)
Gynaecology	Co-amoxiclav 1.2g IV		Clarithromycin 500mg IV + Metronidazole 500mg IV	For moderate / high risk patients.
Orthopaedic	Co-amoxiclav 1.2g IV	Cefuroxime 1.5 g + 750mg at end of procedure IV	Clarithromycin 500mg IV	Repeat intra-operatively if prolonged procedure.
Trauma, lower limb amputation and compound fractures	Co-amoxiclav 1.2g IV		Clarithromycin 500mg IV +Metronidazole 500mg IV	Repeat intra-operatively if prolonged procedure.

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	FIRST CHOICE	ALTERNATIVE	PREVIOUS TRUE ** PENICILLIN ALLERGY	COMMENTS
Oral or Maxillo-Facial surgery	Co-amoxiclav 1.2g IV		Clarithromycin 500mg IV +Metronidazole 500mg IV	
Large Bowel	Co-amoxiclav 1.2g IV		Gentamicin 2mg/kg IV +Metronidazole 500mg IV	Repeat intra-operatively if prolonged procedure. Administer Metronidazole with pre-med and Gentamicin on induction
Upper G.I	Co-amoxiclav 1.2g IV		Clarithromycin 500mg IV	Repeat intra-operatively if prolonged procedure.
Splenectomy	Benzylpenicillin 1.2g IV 6 hrly until oral penicillin commenced.		Clarithromycin 500mg bd IV (until oral erythromycin commenced.)	Patients should all receive vaccines according to guidelines.
Prevention of surgical site infection in MRSA positive patient	Vancomycin 1g given over 100 minutes prior to induction of anaesthesia	Teicoplanin 400mg IV at induction of anaesthesia	Also give usual surgical prophylaxis as per guidelines	

Prophylaxis should be started preoperatively, ideally within 30 minutes of induction of anaesthesia. ** Note IV Clarithromycin given as 60 min infusion

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Prevention of Endocarditis

British Society for Antimicrobial Chemotherapy advice is shown below. NICE published guidance in March 2008 which is published in the BNF March 2008. Comment in response to this guidance is awaited from various national bodies. Local advice will be amended when the position is clearer and posted on the intranet.

DENTAL PROCEDURES – patients with history of endocarditis, prosthetic cardiac valve, surgically constructed systemic or pulmonary shunt/conduit. Patients should use pre-op. mouthwash of Chlorhexidine gluconate 0.2% held in mouth for 1 minute.	
Patients who have NOT received more than a single dose of penicillin in the previous month	> 10 years - Amoxicillin 3g (oral) 1 hour before procedure >5 years & < 10 years - Amoxicillin 1.5g (oral) 1 hour before procedure < 5 years – Amoxicillin 750mg (oral) 1 hour before procedure
Patients who are penicillin-allergic or who have received more than a single dose of penicillin in the previous month	> 10 years – Clindamycin 600mg (oral) 1 hour before procedure >5 years & < 10 years – Clindamycin 300mg (oral) 1 hour before procedure < 5 years – Clindamycin 150mg (oral) 1 hour before procedure
Patients who are penicillin-allergic and cannot swallow capsules	> 10 years – Azithromycin suspension 500mg (oral) 1 hour before procedure >5 years & < 10 years – Azithromycin suspension 300mg (oral) 1 hour before procedure < 5 years – Azithromycin suspension 200mg (oral) 1 hour before procedure
SURGICAL PROCEDURES - patients with history of endocarditis, prosthetic cardiac valve, surgically constructed systemic or pulmonary shunt/conduit, complex congenital heart disease, complex LV outflow abnormalities, acquired valvulopathy, mitral valve prolapse.	
GASTRO-INTESTINAL – oesophageal sclerotherapy, oesophageal stricture dilatation, ERCP, hepatic/biliary surgery, gall stone lithotripsy, surgery involving gastro-intestinal mucosa. **GENITO-URINARY – cystoscopy, urethral dilatation, TURP, transrectal prostatic biopsy, vaginal hysterectomy, caesarian section.** **RESPIRATORY – tonsillectomy/adenoidectomy, surgery on upper respiratory tract.**	>10 years - Ampicillin 1g IV >5 years & < 10 years - Ampicillin 500mg IV < 5 years – Ampicillin 250mg IV and Gentamicin 1.5mg/kg at induction Penicillin allergy – use Teicoplanin 400mg (<14 years 6mg/kg) and Gentamicin 1.5mg/kg at induction
Nasal packing and nasal intubation	Flucloxacillin 1g IV at induction (<4 years 50mg/kg) Penicillin allergy - use Clindamycin

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Meningitis

	FIRST CHOICE	ALTERNATIVE	COMMENTS
Adults – Previously Healthy	Ceftriaxone 2-4 g daily IV If older than 55 years consider adding Ampicillin IV 2g QDS to cover Listeria	Chloramphenicol 50 – 100 mg/kg in 4 divided doses IV (Max 4 g/day) if penicillin allergy	CSF* and blood cultures essential Course lengths: Meningococci: For at least 5 days Pneumococci: For 10-14 days H.Influenzae: For at least 10 days
Meningococcal Carriers Or Contacts	Rifampicin 600 mg bd oral for 2 days adults	Ciprofloxacin 500mg od stat dose	Prophylaxis required for patient prior to discharge
Haemophilus Influenza-B Carriers Or Contacts	Rifampicin 600 mg od oral for 4 days adults		Prophylaxis required for patient prior to discharge

***CSF examination should only be performed if raised ICP excluded**

Bacterial Endocarditis – Empirical Therapy

	FIRST CHOICE	ALTERNATIVE	COMMENTS
Suspected Bacterial Endocarditis	Benzylpenicillin 1.2 g 4 hrly IV + Gentamicin 80 mg bd IV	Vancomycin as per nomogram (IV) + Rifampicin 300-600mg bd PO	Antibiotics dependent on microbiological sensitivity

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Suspected Bacterial Endocarditis With Prosthetic Valve Or Patients With A History Of Intravenous Drug Abuse	Benzylpenicillin 1.2 g 4 hrly IV + Gentamicin 80 mg bd IV + Flucloxacillin 2g 4 hrly IV	Vancomycin as per nomogram (IV) + Rifampicin 300mg-600mg bd PO	Antibiotics dependent on microbiological sensitivity

Respiratory Tract Infections – CIPROFLOXACIN SHOULD NOT BE USED FIRST LINE FOR COPD OR CAP

	FIRST CHOICE	PENICILLIN ALLERGIC	SECOND LINE	COMMENTS
Acute Bronchitis / exacerbation of COPD Treat if 2 of the following: purulent sputum, increased SOB or increased sputum volume. Pyrexia and tachycardia also indicative of infection.	Amoxycillin 500mg tid oral	Clarithromycin 500mg bd oral	Moxifloxacin 400mg od oral	Recommended duration 5 days. Usually viral infection. Risk of drug interaction between clarithromycin and Simvastatin/Atorvastatin – consider stopping statin or alternative statin.
Treat Community-Acquired Pneumonia according to severity as assessed by CURB-65 score One point for each of Confusion, Urea >7mmol/l, Respiratory rate 30/min or more, systolic Blood pressure < 90mmHg (or diastolic < 60mmHg), Age 65 years or older. Patients who have a CURB-65 score of 0 are at low risk of death and do not normally require hospitalisation for clinical reasons. Patients who have a CURB-65 score of 1 or 2 are at increased risk of death. Consider hospital admission, particularly with a score of 2. Patients who have a CURB-65 score of 3 or more are at high risk of death. Urgent hospital admission and treatment with IV antibiotics.				

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	FIRST CHOICE	PENICILLIN ALLERGIC	SECOND LINE	COMMENTS
Community-Acquired Pneumonia (non-severe, hospital treated) **CURB 65 Score 0-2**	*Oral treatment suitable*: Amoxycillin 500mg – 1g tid + Clarithromycin 500 mg bd *If oral treatment not suitable:* Amoxycillin 500mg – 1g tid IV + Clarithromycin 500mg bd IV	Moxifloxacin 400mg od oral Clarithromycin 500mg bd IV +/- Ciprofloxacin 200-400mg bd IV	Moxifloxacin 400mg od oral Ciprofloxacin 200-400mg bd IV +/- Clarithromycin 500mg bd IV	Minimum duration – 7 days IV therapy only if oral route not suitable. Seek specialist bacteriology advice if no response to first line agents. Risk of drug Interaction between clarithromycin and Simvastatin/Atorvastatin – consider stopping statin or alternative statin.
Community-Acquired Pneumonia (severe) **CURB 65 Score ≥ 3**	Ceftriaxone 2g od IV + Clarithromycin 500 mg bd IV +/- Rifampicin 600mg od/bd IV Switch IV Ceftriaxone to oral Co-amoxiclav 625mg tds once able	Ciprofloxacin 400mg bd IV + Clarithromycin 500mg bd IV +/- Rifampicin 600mg od/bd IV Switch to oral ciprofloxacin and clarithromycin once able	Seek specialist bacteriology advice	**Give stat doses at presentation.** Minimum duration 10 days. See table below for course length for identified pathogens
Hospital Acquired pneumonia (incl. post-op chest infections)	Ceftriaxone 2g od IV or Co-amoxiclav 625mg tid oral	Ciprofloxacin 400mg bd IV or 500mg bd oral	Seek specialist bacteriology advice	
Aspiration Pneumonia	Ceftriaxone 2g od IV + Metronidazole 500mg tid IV	Ciprofloxacin 400mg bd IV + Metronidazole 500mg tid IV	Seek specialist bacteriology advice	

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	FIRST CHOICE	PENICILLIN ALLERGIC	SECOND LINE	COMMENTS
Pneumonia in Immunocompromised	Piperacillin 4g/Tazobactam 500mg tid + Gentamicin 5mg/kg IV as per Once Daily Protocol	Ciprofloxacin 400mg bd IV + Gentamicin 5mg/kg as per Once Daily Protocol IV	Seek specialist bacteriology advice	
Exacerbation of Bronchiectasis	Ceftazadime 2g bd/tid IV (elderly 1g tid) + Ciprofloxacin 400mg bd IV Or gentamicin 5mg/kg IV as per Once Daily Protocol	Ciprofloxacin 400mg bd IV + Gentamicin 5mg/kg IV as per Once Daily Protocol	Seek specialist bacteriology advice	Follow previous sensitivities once old notes available until sputum culture reported

All doses assume normal renal and hepatic function.

Atypical Pathogen	Minimum duration of treatment (days)
Legionella infection	**14 – 21**
Staphylococcal infection	**14 – 21**
Gram negative enteric bacilli	**14 - 21**

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Urinary Tract Infections – QUINOLONES SHOULD NOT BE USED FIRST LINE FOR LOWER URINARY TRACT INFECTIONS IN WOMEN

	FIRST CHOICE	ALTERNATIVE	COMMENTS
Lower Urinary Tract Infection – Non pregnant female	Trimethoprim 200 mg bd oral	Cefalexin 500 mg bd oral	3-day course for women. 7 day course in elderly. Second line depends on sensitivity of MSSU
Lower Urinary Tract Infection - Males	Ciprofloxacin 500mg bd oral	Second line depends on sensitivity of MSSU	**Men with febrile UTI or recurrent symptoms may require treatment for 14 days. (SIGN 88)**
Lower Urinary Tract Infection –pregnant female	Cephalexin 500mg bd	Trimethoprim 200mg bd (avoid in first trimester) or co-amoxiclav 325mg tds	Symptomatic UTI or asymptomatic bacturia
Catheter related	Avoid treating catheter – related bacteruria if the catheter is long-term. Treat if manipulation of catheter is planned or if clinical evidence of infection is present. Obtain sensitivity from bacteriology prior to treatment. Change catheter before starting treatment for symptomatic UTI		
Catheter – related septicaemia	Ciprofloxacin 500mg bd oral or if unable to take orally then IV Or Ceftriaxone 2 g once daily IV	Piperacillin 4g/Tazobactam 500mg tid Or Co-amoxiclav 1.2g 8 hourly IV +/- Gentamicin 5 mg/kg IV as per Once Daily Protocol	Blood and urine culture before treatment If the catheter has been placed in the preceding few days, only remove catheter if blocked and give antibiotics prior to removal and continue afterwards.
SIGNS OF UPPER UTI: Loin pain, flank tenderness, fever, rigors, other manifestations of SIRS			

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	FIRST CHOICE	ALTERNATIVE	COMMENTS
Pyelonephritis and pyelonephritis with septicaemia	Ciprofloxacin 500mg bd oral or if unable to take orally then IV for 7 days Or Ceftriaxone 2-4g/day IV	Piperacillin 4g/Tazobactam 500mg tid Or Co-amoxiclav 1.2g 8 hourly IV +/- Gentamicin 5 mg/kg IV as per Once Daily Protocol	Urgent Blood and urine culture/sensitivities before treatment Urgent referral to urology if not settling
Epididymo-orchitis	Ofloxacin 400mg daily up to 3 weeks oral	Doxycycline 100mg bd oral for 14 days	Exclude testicular torsion and tumour. Refer to urology. Epididymo-orchitis often of chlamydial origin. Refer to G.U medicine
Treatment to prevent recurrent UTI	Trimethoprim 100mg nocte oral	Nitrofurantoin 50-100mg nocte oral	
Prostatitis	Ciprofloxacin 500mg bd oral for up to 3 weeks	See epididymo-orchitis	First void urine for culture Many cases of 'prostatitis' not infective

Skin Infections

	FIRST CHOICE	ALTERNATIVE	COMMENTS
Cellulitis / impetigo	Penicillin V 500 mg qid oral + Flucloxacillin 500 mg qid oral	Clarithromycin 500 mg bd oral	Second line treatment based on advice from microbiology.
Severe cellulitis	Flucloxacillin 1 – 2 g IV 6 hourly +/- Benzylpenicillin 1.2 IV 6 hourly	Penicillin allergy: Vancomycin IV +/- Gentamicin IV (doses as per nomograms)	Second line treatment based on advice from microbiology.
Leg ulcers + cellulitis	Amoxycillin 500 mg tid oral + Metronidazole 400 mg tid oral	Clarithromycin 500 mg bd oral	Second line treatment based on advice from microbiology.

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Cellulitis in lymphoedema	Amoxicillin 2g 8 hourly IV + Gentamicin 5mg/kg IV as per Once Daily Protocol	Clindamycin 600mg qid IV in penicillin allergy or if poor response to first choice therapy	Treat for at least 14 days after clinical response
Necrotising **SEEK URGENT SURGICAL REVIEW**	Benzylpenicillin 1.2 g qid IV + Metronidazole 500 mg tid IV + Gentamicin 5mg/kg IV as per Once Daily Protocol	Gentamicin 5mg/kg IV as per Once Daily Protocol + Clindamycin 600mg – 1.2g qid IV	Start antibiotics and contact microbiology for advice. Second line treatment based on advice from microbiology.

Wound Infections

	FIRST CHOICE	ALTERNATIVE	COMMENTS
Dirty infected bites	Co-amoxiclav 625 mg tid oral	Clarithromycin 500 mg bd oral	Cleanse wound thoroughly. Consider tetanus immunoglobulin (with absorbed tetanus vaccine if necessary according to immunisation history)
Clean surgical + cellulitis	Penicillin V 500 mg qid oral + Flucloxacillin 500 mg qid oral	Clarithromycin 500 mg bd oral	Cleanse wound thoroughly.

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Bone and Joint

	FIRST CHOICE	ALTERNATIVE	COMMENTS
Septic arthritis	Flucloxacillin 1-2 g qid IV	Clindamycin 600 mg tid IV	Treat for at least 6 weeks (IV for 2 weeks at least)
Osteomyelitis	Flucloxacillin 1-2 g qid IV + Sodium Fusidate 500 mg tid (oral / IV)	Clindamycin 600 mg tid IV	
Pseudomonas Osteomyelitis	Ciprofloxacin 400 mg bd IV or 500 mg bd oral		Initiation should be IV

Abdominal Sepsis

	FIRST CHOICE	ALTERNATIVE	COMMENTS
Infected biliary / gastric surgery -cholecystitis / upper GIT pre - and post-surgery	Ceftriaxone 1-2g once daily IV	Ciprofloxacin 500 mg bd IV or 400mg bd oral in penicillin allergy 2nd line Piperacillin 4g/Tazobactam 500mg tid IV	Bacteriological assessment necessary
Peritonitis	Ceftriaxone 2g once daily IV + Metronidazole 500 mg tid IV	Ciprofloxacin 400mg bd IV + Metronidazole 500mg tid IV in penicillin allergy 2nd line Piperacillin 4g/Tazobactam 500mg tid IV	Bacteriological assessment necessary
Large bowel	Ceftriaxone 2g once daily IV + Metronidazole 500 mg tid IV	Ciprofloxacin 400mg bd IV + Metronidazole 500mg tid IV in penicillin allergy 2nd line Piperacillin 4g/Tazobactam 500mg tid IV + Metronidazole 500 mg tid IV	Treat for 5 -7 days
Pseudomomembranous colitis	Metronidazole 400 mg tid oral	Vancomycin 125 mg qid oral	Duration of therapy 10 – 14 days depending on severity.

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Septicaemia

	FIRST CHOICE	ALTERNATIVE	COMMENTS
Unknown	Ceftriaxone 2g once daily IV (1g in elderly)	Ciprofloxacin 400mg bd IV in penicillin allergy 2nd line Piperacillin 4g/Tazobactam 500mg tid IV	Blood cultures + re-assess at 48 hours - consult with microbiologist
Possible Gynaecological Or Large Bowel	Ceftriaxone 2g once daily IV (1g in elderly) + Metronidazole 500 mg tid IV	Ciprofloxacin 400mg bd IV + Metronidazole 500mg tid IV in penicillin allergy 2nd line Piperacillin 4g/Tazobactam 500mg tid IV + Metronidazole 500 mg tid IV	Blood cultures + re-assess at 48 hours - consult with microbiologist
Immuno-Suppressed	Piperacillin 4g/Tazobactam 500mg tid IV + Gentamicin 5mg/kg IV as per Once Daily Protocol	Penicillin allergic – use Teicoplanin 400mg bd for 1 day then 400mg od IV + Ciprofloxacin 400mg bd IV 2nd line Meropenem 1g tid IV 3rd line Amphotericin (Ambisome) 1mg test dose then 3mg/kg once daily IV	Blood cultures + re-assess at 48 hours - consult with microbiologist If oral/GI/gynae sepsis suspected add in Metronidazole 500mg tid IV. If community acquired pneumonia suspected add in Clarithromycin 500mg bd IV. Hickman/PICC lines: Positive line culture or definite clinical indication of line infection e.g. rigor on flushing, add in Teicoplanin 400mg bd for 1 day then 400mg od IV.

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Obstetrics and Gynaecology

	FIRST CHOICE	ALTERNATIVE	COMMENTS
Prophylaxis In C-Section	Co-amoxiclav 1.2g IV at time of umbilical cord clamp	Clindamycin 900mg IV at time of umbilical cord clamp	
Prophylaxis In Group β Strep Labour	Benzylpenicillin 3g IV then 1.5g every 4 hours IV	Clindamycin 900mg 8 hourly IV	
PROM	Benzylpenicillin 3g IV then 1.5g every 4 hours IV	Clindamycin 900mg 8 hourly IV	Switch to oral Erythromycin 500mg qid and complete 7 day course
Pyrexia In Labour	Co-amoxiclav 1.2g 8 hourly IV	Clindamycin 900mg 8 hourly IV	
Medical and Surgical Termination Of Pregnancy	Oral Azithromycin 1g + rectal Metronidazole 1g (1 dose each)		
Wound Infection	Ceftriaxone 1-2 g once daily IV + Metronidazole 500mg tid IV		Oral switch therapy – Co-amoxiclav 625mg tid & Metronidazole 400mg tid
Pelvic Inflammatory Disease*	Ofloxacin 400mg bd + Metronidazole 400mg bd for 14 days	Doxycycline 100mg bd + Metronidazole 400mg bd. If IV treatment necessary contact microbiology.	Prior to treating Pelvic Inflammatory Disease always screen for gonococcal and/or chlamydial causes of infection. N.B. GC will take 72 hours to culture but would be seen on direct microscopy if referred to GUM as priority (for optimum identification).

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Antibiotics in Pregnancy and Breastfeeding

Penicillins and Cephalosporins are drugs of choice in pregnancy and breastfeeding. Avoid quinolones and tetracyclines.
For information on other indications and safety of other antibiotics contact Medicines Information Centre on extension 4184 or on-call Pharmacist out-of-hours.

INFECTION	FIRST CHOICE	ALTERNATIVE	COMMENTS
Respiratory	Amoxicillin 500mg tid	Erythromycin 500mg qid	Erythromycin may cause GI upset in breastfed infants
Urinary Tract	Cefalexin 500mg bd	Trimethoprim 200mg bd (avoid in 1st trimester) or Co-amoxiclav 375mg tid	
Cellulitis	Penicillin v 500mg qid + Flucloxacillin 500mg qid	Erythromycin 500mg qid	
Septicaemia	Ceftriaxone 2g once daily IV + Metronidazole 500mg tid IV		Avoid breastfeeding during IV Metronidazole therapy and for 24 hours after stopping IV Metronidazole Oral switch therapy – Co-amoxiclav 625mg tid & Metronidazole 400mg tid

Appendix 30

Antibiotics in MRSA Infections

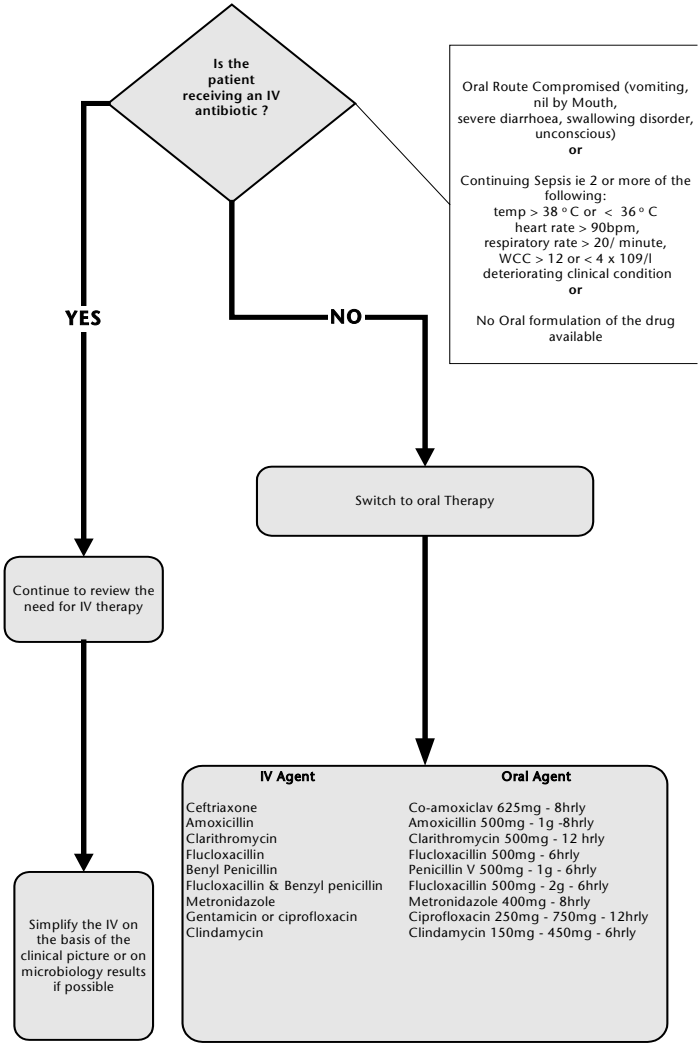
It is important to distinguish between MRSA colonisation and infection. Contact Microbiologist for advice.
If patient colonised with MRSA, consider eradication therapy with Triclosan body wash and Mupirocin or Naseptin nasal ointment for 5 days – contact Infection Control for advice.

INFECTION	FIRST CHOICE	ALTERNATIVE	COMMENTS
Skin/soft tissue	Rifampicin 300mg bd oral + Sodium fusidate 500mg tid oral	Contact Microbiologist for advice	Always use 2 oral agents in combination to prevent development of resistance
Skin/soft tissue with risk of bacteraemia	Vancomycin IV as per nomogram	Contact Microbiologist for advice	
Urinary Tract	Trimethoprim 200mg bd	Nitrofurantoin 50mg qid Or Tetracycline 500mg tid	7 day course
Bone/Joint	Vancomycin IV as per nomogram +/- Rifampicin 300mg bd IV	Rifampicin 300mg bd oral + Sodium fusidate 500mg tid oral	If organism is Erythromycin-sensitive Clindamycin (IV or oral) can be used
Bacteraemia or endocarditis	Vancomycin IV as per nomogram	Contact Microbiologist for advice	Minimum 14 days in bacteraemia Contact Microbiologist for advice on duration in endocarditis
Pneumonia	Vancomycin IV as per nomogram	Contact Microbiologist for advice	
Prevention of surgical site infection in MRSA positive patient	Vancomycin 1g given over 100 minutes prior to induction of anaesthesia	Teicoplanin 400mg IV at induction of anaesthesia	Also give usual surgical prophylaxis as per guidelines

Pharmacist Lead: Clare Colligan

Appendix 31

Forth Valley Hospitals Oral Antibiotic Switch Therapy Protocol



Lead Pharmacist Clare Colligan

Appendix 32

Antibiotic Dosage Guidelines – Vancomycin/Gentamicin

All patients commencing regular Gentamicin or Vancomycin should have their Creatinine Clearance calculated to ensure the dose prescribed is safe and effective. Contact ward pharmacist or Antibiotic Pharmacist (radiopage 07699 661242) for advice on dosage adjustments.

Creatinine Clearance

$$\text{CrCl (ml/min)} = \frac{(140 - \text{AGE[years]}) \times \text{WEIGHT[kg]}}{\text{SERUM CREATININE [}\mu\text{mol/l]}} \times 1.04 \text{ (female) or } 1.23 \text{ (male)}$$

If the creatinine concentration is <60μmol/l use 60μmol/l.
This equation may overestimate creatinine clearance in the elderly or severely underweight patient.
Use ideal body weight if the patient is obese and actual body weight if underweight.

Ideal Body Weight

Males: 50.0kg + 2.3kg for every 2.5cm over 152cm
Females: 45.5kg + 2.3kg for every 2.5cm over 152 cm (every inch over 5 feet)

VANCOMYCIN DOSAGE

1. Determine starting dose from table – the dosage regimen is shown as dose in mg (interval in hours).
2. If CrCl < 20ml/min. give 1000 mg and check level after 24 hours.
3. Otherwise, measure trough level within first 48 hours of treatment and adjust dosage if necessary.
4. Target trough level is 5 – 10mg/1 (up to 15mg/l acceptable in severe infection).
5. Peak levels ONLY required in endocarditis.
6. Repeat levels should be done twice weekly once trough is within target range and also after dose adjustment.
7. Levels should be checked more frequently if patient has renal impairmet or fluctuating renal function.

CrCl (ml/min)	Weight (kg)	
	Less than 60kg	More than 60kg
20-29	1000 (48)	1000 (48)
30-49	750 (24)	750 (24)
50-59	1000 (24)	1000 (24)
60-69	500 (12)	1000 (24)
70-79	750 (12)	750 (12)
80-100	750 (12)	1000 (12)
>100	1250 (12)	1250 (12)

Appendix 32

Antibiotic Dosage Guidelines – Vancomycin/Gentamicin

ONCE DAILY DOSING OF GENTAMICIN

This is the preferred method for administration of Gentamicin.
It is not recommended for children & neonates, endocarditis, pregnancy, major burns, patients with CrCl<20ml/min.

DOSE is 5mg/kg (to maximum of 450mg)
or 3mg/kg if Creatinine clearance is 20-40 ml/min.

Round dose up or down to nearest 20mg.
Administer dose as infusion in 100ml NaCl 0.9% given over 30 minutes.

Monitoring Trough level required 18-24 hours after dose.
Do not give next dose until result available.
Adjust dosage interval as follows.

Gentamicin level	Action	Next level due
<1.0mg/l	Continue current dose every 24 hours	Repeat in 3 days
1.1 – 2.0 mg/l	Increase dose interval to 36 hours	Repeat next day
2.1 – 3.0 mg/l	Increase dose interval to 48 hours	Repeat 2 days
> 3.0 mg/l	Stop Gentamicin	

MULTIPLE DAILY DOSING OF GENTAMICIN

1. Determine starting dose from table – the dosage regimen is shown as dose in mg (interval in hours)
2. If CrCl < 20ml/min, give 2.5mg/kg and check level after 24 hours.
3. Otherwise, measure level within first 48 hours of treatment and adjust dosage if necessary.
4. Target trough level is < 2mg/l and peak is 5-10mg/l (3-5mg/l for endocarditis *see below).
5. Repeat levels should be done twice weekly once peak and trough are within target range and also after dose adjustment.
6. Levels should be checked more frequently if patient has renal impairment or fluctuating renal function.

CrCl (ml/min)	Weight (kg)				
	40-49	50-59	60-69	70-79	>80
20-29	100(24)	100(24)	100(24)	160(48)	180(48)
30-39	120(24)	120(24)	140(24)	140(24)	160(24)
40-49	120(24)	140(24)	140(24)	160(24)	180(24)
50-59	100(12)	140(24)	160(24)	180(24)	180(24)
60-69	120(12)	140(12)	140(12)	180(24)	180(24)
70-79	140(12)	140(12)	160(12)	180(24)	200(24)
80-89	140(12)	160(12)	160(12)	160(12)	180(12)
90-99	160(12)	160(12)	180(12)	180(12)	180(12)
>100	160(12)	180(12)	200(12)	200(12)	200(12)

* Starting dose of Gentamicin in endocarditis should be 80mg twice daily. If levels are too high on this dosage, reduce the dose given rather than increasing the dose interval to 24 hours.

Appendix 33

Therapeutic Drug Monitoring Guidelines

ANTIBIOTICS				
Drug	**Time to steady state**	**Ideal sampling time**	**Target range**	**Comments**
Gentamicin (once daily dosing)	1 day (depends on renal function)	**Trough**: level only required 18-24 hours post dose	<1mg/l	Adjust dosage interval if trough high
Gentamicin (multiple daily dosing)	1 day (depends on renal function)	**Trough:** Immediately before next dose **Peak** : 1 hour post dose	<2mg/l 5-10mg/l 3-5mg/l for endocarditis	Dose depends on renal function
Vancomycin	1 day (depends on renal function)	**Trough**: Immediately before next dose **Peak**: (only required in endocarditis) 1 hour after end of infusion	5 -10mg/l Up to 15mg/l in severe infection 24-30mg/l	Dose depends on renal function

OTHER DRUGS				
Drug	**Time to steady state**	**Ideal Sampling time**	**Target range**	**Comments**
Carbamazepine	2-3 weeks (new therapy) 2-4 days (dose change)	Pre dose (not critical)	10-50μmol/l (epilepsy) 17-50μmol/l (mood stabiliser)	Metabolised by the liver, autoinduction See BNF for interactions
Digoxin	7-10 days (depends on renal function)	> 6 hours post dose	1.2-2.6 nmol/l	Mainly renal excretion See BNF for interactions
Lithium	5-7 days	12 hours post dose	0.4-1.0 mmol/l	Renal excretion See BNF for use and interactions
Phenytoin	2-3 weeks	Pre dose (not critical)	20-80μmol/l	Metabolised in the liver. Nonlinear increase in conc with dose. See BNF for interactions
Theophylline	2-3 days	8-12 hours post dose	55-110μmol/l	Metabolised in the liver. See BNF for interactions
Valproic acid	3 days	Pre dose	300-600μmol/l (epilepsy) 350-700μmol/l (mood stabiliser)	Metabolised in the liver. Levels do not correlate well with therapeutic effect

Pharmacist Lead:Clare Colligan

Appendix 34

Genito-Urinary Medicine List

The following products are not included in the Formulary but are available for restricted use by GUM Clinics:-

Antimicrobials

Erythromycin capsules
Procaine Benzylpenicillin[Procaine penicillin] injection (UNLICENSED PRODUCT)
Spectinomycin injection (UNLICENSED PRODUCT)
Benzathine penicillin (UNLICENSED PRODUCT)

Antiretrovirals

NRTIs
Didanosine
Emtricitabine/ Tenofovir (Truvada)
Lamivudine
Tenofovir
Zidovudine
Combined NRTIs
Abacavir / Lamivudine (Kivexa)
Abacavir / Lamivudine / Zidovudine (Trizivir)
Lamivudine / Zidovudine (Combivir)
NNRTIs
Efavirenz
Nevirapine tablets
PIs
Atazanavir
Lopinavir / Ritonavir (Kaletra)
Nelfinavir tablets
Ritonavir
Saquinavir
Tipranavir
Darunavir

Topical preparations

Clindamycin 2% cream
Econazole 1% cream
Imiquimod 5% cream
Unguentum M cream

Appendix 35

Adult Adrenal Insufficiency Management Guidelines

Adrenal insufficiency results from inadequate adrenocortical function and may be due to Addisons Disease, previous bilateral adrenalectomy, pituitary disorders, hypothalmic dysfunction or sudden withdrawal of long term oral steroids in people with chronic disease e.g. asthma. Adrenal insufficiency may be precipitated by acute infections e.g. septicaemia, haemorrhage, trauma or any acute medical / surgical condition.

Although rare, it can result in life threatening adrenal crisis and requires replacement steroid therapy for life. During periods of stress, illness, surgery, anaesthesia or trauma, the amount of steroid required by the body increases and an appropriate dose adjustment is required (Coursin 2002).

When the patient is unable to eat or drink (or is vomiting), an alternative route of administration ***must*** be used.

The following points should be considered when managing the patients care:

- Patients who take 10mg or less of prednisolone daily should not require perioperative steroids greater than their usual requirements, (Nicholson et al 1998).
- In patients undergoing minor surgery, consideration should be given to increasing ongoing therapy only.
- In patients undergoing moderate or major surgery, please follow the attached guidelines.
- Patients who have not received steroids for more than three months are considered to have full recovery of the hypothalmic pituitary adrenal axis (HPA) and do not normally require steroid cover for procedures, (Nicholson et al 1998).

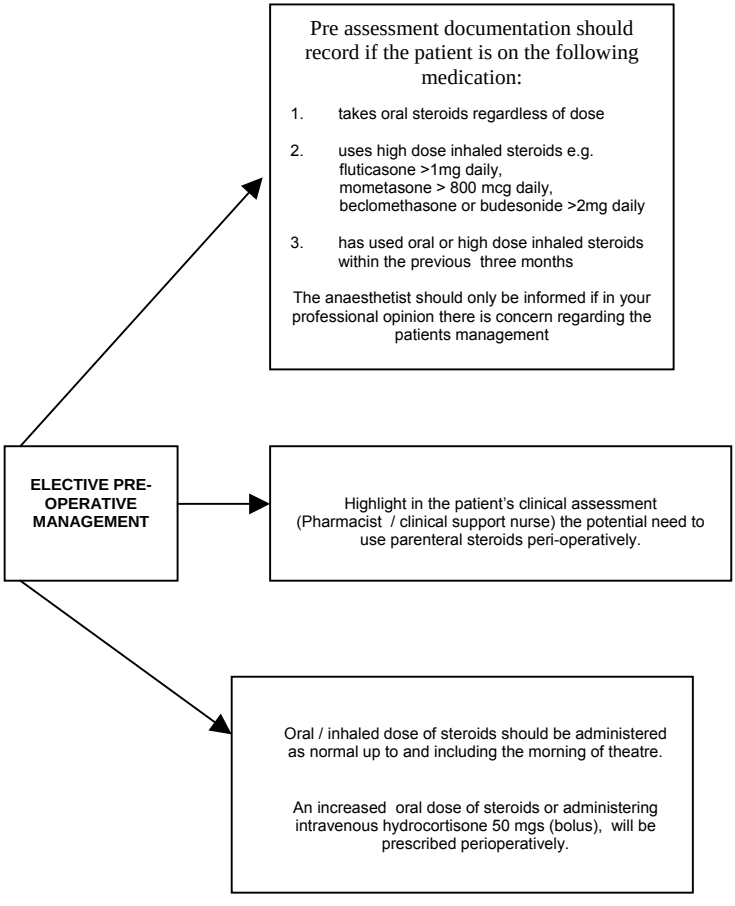
The following guidelines provide information on management of the patient with adrenal insufficiency. Please seek appropriate specialist advice from anaesthetists or physicians for specific issues of patient management.

NB. These guideline differ form the Sepsis Guidelines used in Intensive Care Areas.

Appendix 35

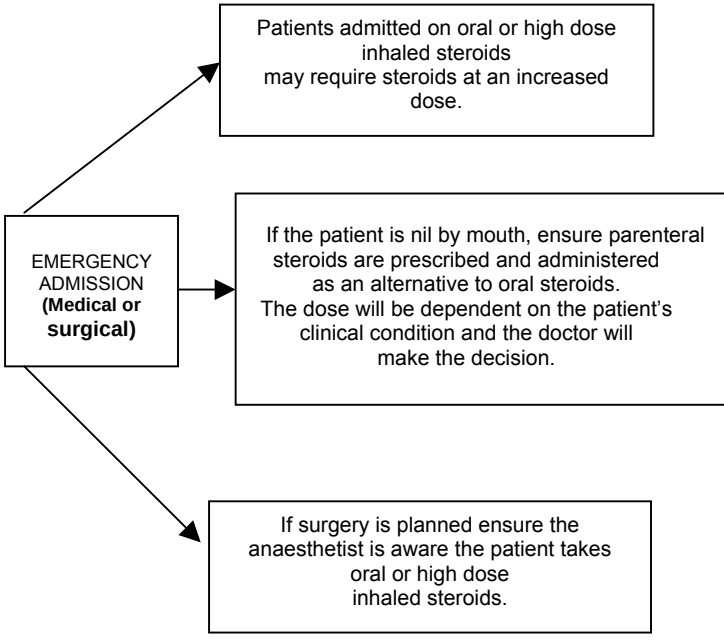
ELECTIVE PATIENT MANAGEMENT GUIDELINES

Steroids must not be withheld if the patient is nil by mouth as lack of adrenal response may cause acute cardiovascular collapse, hypotension and shock that can become irreversible.



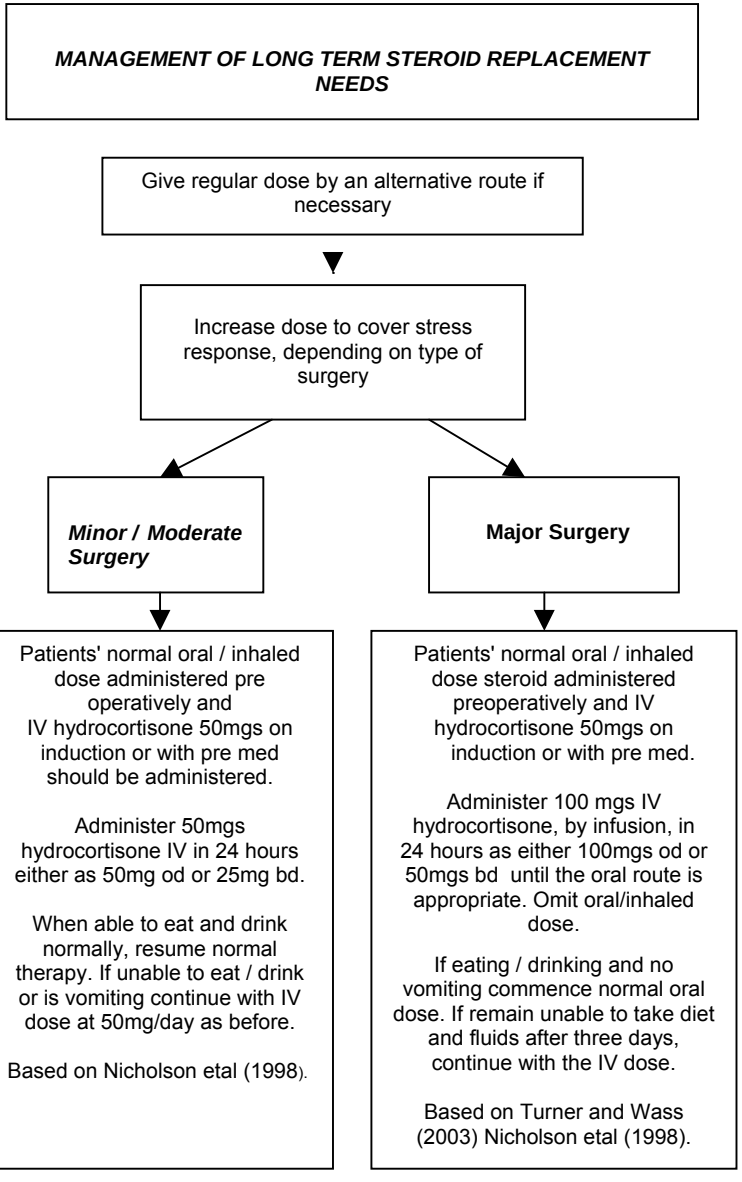
Appendix 35

EMERGENCY PATIENT MANAGEMENT GUIDELINES



Steroids must not be withheld if the patient is nil by mouth as lack of adrenal response may cause acute cardiovascular collapse, hypotension and shock that can become irreversible.

Appendix 35


MANAGEMENT OF LONG TERM STEROID REPLACEMENT NEEDS
Give regular dose by an alternative route if necessary
Increase dose to cover stress response, depending on type of surgery
Minor / Moderate Surgery
Major Surgery
Patients' normal oral / inhaled dose administered pre operatively and IV hydrocortisone 50mgs on induction or with pre med should be administered.
Administer 50mgs hydrocortisone IV in 24 hours either as 50mg od or 25mg bd.
When able to eat and drink normally, resume normal therapy. If unable to eat / drink or is vomiting continue with IV dose at 50mg/day as before.
Based on Nicholson etal (1998).
Patients' normal oral / inhaled dose steroid administered preoperatively and IV hydrocortisone 50mgs on induction or with pre med.
Administer 100 mgs IV hydrocortisone, by infusion, in 24 hours as either 100mgs od or 50mgs bd until the oral route is appropriate. Omit oral/inhaled dose.
If eating / drinking and no vomiting commence normal oral dose. If remain unable to take diet and fluids after three days, continue with the IV dose.
Based on Turner and Wass (2003) Nicholson etal (1998).
Cortisol levels normally return to baseline 24 - 48 hours after surgery but may take up to 72 hours (Shaw 2002).

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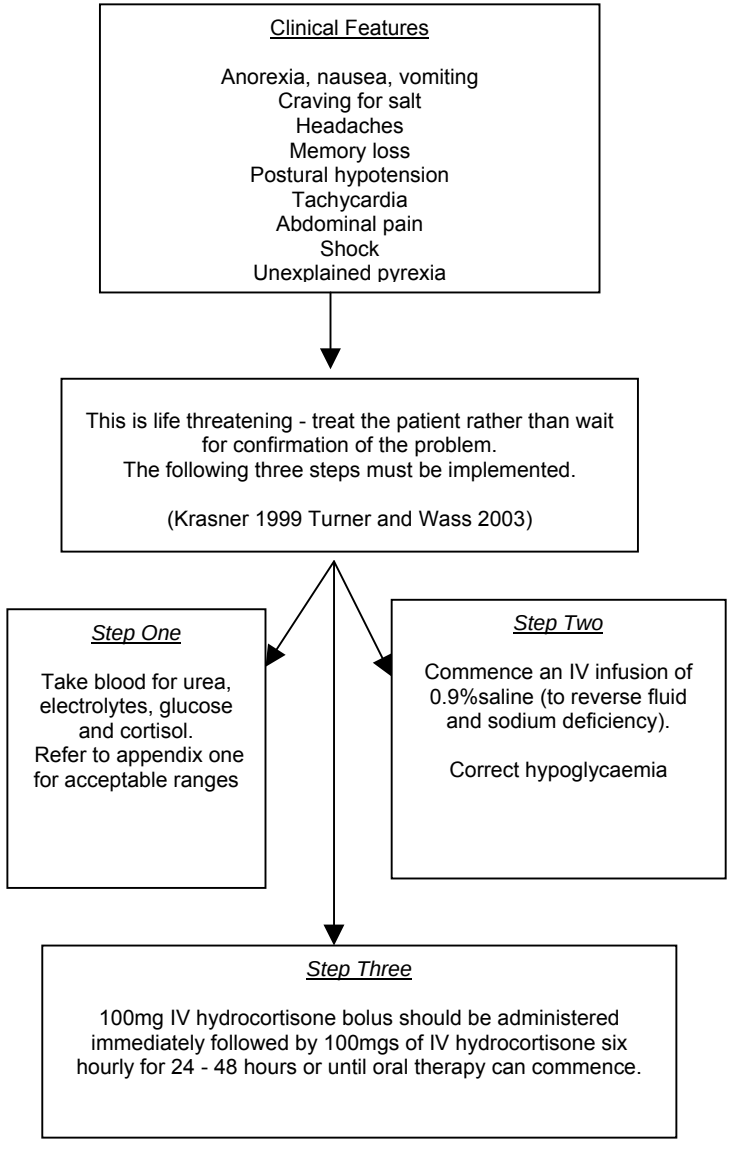
EMERGENCY MANAGEMENT OF ADRENAL INSUFFICIENCY (MEDICAL OR SURGICAL PATIENT)



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Appendix One - Acceptable Blood Ranges

Substance	Acceptable blood range
Potassium	3.5 - 5 mmol / litre
Sodium	135 - 145 mmol / litre
Calcium	2.12 - 2.65 mmol / litre
Urea	2.5 - 6.7 mmol / litre
Creatinine	70 - 150 micromols / litre
Glucose (fasting)	3.5 - 5.5 mmol / litre
Cortisol - am	450 - 700 nanomol / litre
Cortisol - midnight	80 - 280 nanomol / litre

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Appendix 36

Management of Adult Patients with Diabetes Undergoing Elective Surgery

These guidelines describe a way of managing elective surgical patients with diabetes mellitus in the perioperative period. They have been developed after local multidisciplinary discussion. They do not replace the involvement of appropriately trained medical and nursing staff.

Pre-operative Assessment and Testing
Determine whether the patient's blood sugar is controlled by diet, oral hypoglycaemics or insulin (or combination).
Ask and document how long the patient has had the condition and how well it is usually controlled.
Assess for the presence of **complications**:

ischaemic heart disease (angina / MI)
left ventricular hypertrophy
cerebrovascular disease
hypertension
peripheral vascular disease
renal impairment / failure
peripheral neuropathy
autonomic neuropathy
visual deficit

Major surgery: Do ECG, U+Es, glucose, FBC. Consider HbA1C.

Patients with complications Do ECG, U+Es, glucose, FBC. Consider HbA1C.

Minor surgery: glucose.
Patients with poor glycaemic control (as determined on the history or fasting blood glucose >14mmol/L or HbA1c >9%) should be discussed with a responsible clinician and the diabetes nurse specialist (Tel SRI 4472 FDRI 5746).
Poorly controlled diabetes may be a reason to delay elective surgery.

Pre-operative planning

- Patient should be scheduled first on the list wherever possible
- **Metformin:** stop on the day of **major surgery**. Reinstate when renal function stable. There is no need to substitute another oral hypoglycaemic agent.
- Continue all other diabetic medication as normal up to and including the day before surgery
- Continue meals as normal up to and including the day before surgery
- For medication on the day of surgery see later

On admission
Measure Random BM on admission and regularly thereafter. The frequency of measurement will depend on the exact clinical situation. Repeat U+Es if major surgery planned.

New Cases Diagnosed at the Pre-operative clinic
The following may mean that the patient is diabetic:

- a random plasma glucose > 11.1 mmol/L
- a fasting (defined as no oral intake for 4hours) plasma glucose greater than 7.0

Any positive result in an undiagnosed patient should be discussed with the clinician responsible for the patient's care and a diabetes specialist nurse (Tel SRI 4472 FDRI 5746).

Newly diagnosed diabetes may be a reason to delay surgery.

Appendix 36

General Measures for Diabetic Patients'

- Regularly monitor blood sugar until patient's routine is back to normal - eating and drinking normally and taking their usual insulin or oral hypoglycaemic agents. Frequency of blood glucose measurement will depend on the exact situation and trends exhibited by the patient but generally should be done 1 - 2 hourly perioperatively with increased frequency if the situation is not stable.

- Do not discharge any patient home unless certain that the blood sugar is controlled and the patient is able to manage their diabetes.

- Hypoglycaemia is an important and life threatening complication. It may be defined as a blood sugar less than 4 mmol/L. It is usually caused by an imbalance of too little food versus too much insulin or oral hypoglycaemic. It may present with, sweating, tachycardia, agitation or confusion, fits or unconsciousness. Many diabetic patients will recognise impending hypoglycaemia and will take action to avoid it. If able to eat and drink give a glass of lucozade or juice (non diet) followed by a sandwhich or toast. If glucose is less than 2 or the patient is confused, difficult to rouse or unconscious then call immediate medical help. Give 20ml-50ml of 50% dextrose iv (repeated if necessary). If the patient is unconscious attend to the basics of airway, breathing and circulation. If IV access is not available give glucagon 1mg im.

- Any diabetic patient undergoing prolonged fasting (more than one missed meal) requires GKI or sliding scale management (see details later). GKI has been shown to provide better glycaemic control than sliding scale. It requires only one infusion pump rather than two and is safer in the event of single pump failure.

- Any rising blood sugars, or sugars not "coming under control" should be referred to the responsible doctor and may need GKI or sliding scale.

- "BM" measurement in this document means bedside glucose testing with appropriate device.

Emergency Patients

Often need careful assessment and fluid treatment according to their specific circumstances.
In general treat as major cases - need sliding scale or GKI.

Obstetric Patients
These guidelines are not to be used in the labour ward or obstetric setting.
Separate guidance for this is available.
(Management of Diabetic Patient - protocol for care of diabetic patient)
- SRI women and childrens unit. (July 2001)

Which Regimen for my Patient?

Elective Patients

1. Decide on the type of surgery: minor or major

Minor- consider to be minor *only* if *all* the following are true.

- minor surgery
- operative time less than 1 hour

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- minimal surgical complications likely
- minimal surgical blood loss expected
- patient able to mobilise immediately after surgery
- short predicted fasting time; ie only one missed meal
- patient able to eat and drink immediately after the procedure
- low incidence of PONV
- minimal post-operative pain

Major- **any patient not fulfilling these categories - ie all other patients**

1. Is the patient Insulin (IDDM) or Non-insulin dependent (NIDDM) ?
2. Is it a morning or afternoon list? (if not known presume am)
3. If there is prolonged fast (more than one meal missed - convert to GKI or sliding scale)

Non Insulin Requiring Patients (NIDDM-non insulin dependent diabetes mellitus)

Minor Surgery (as defined above)

Morning list (Day of operation)

- Omit breakfast and oral hypoglycaemics.
- BM testing- 1 hour pre-operatively and intra-operatively as necessary
  2 hourly until eating
- Restart oral hypoglycaemics once feeding has recommenced (prescribe drugs at usual times)

Afternoon List (Day of operation)

- Light breakfast and omit hypoglycaemics
- Blood glucose- 1 hour pre-operatively and intra-operatively as necessary
  2 hourly until eating
- Restart oral hypoglycaemics once feeding has recommenced (prescribe drugs at usual times)
-

Major surgery

Use GKI or insulin sliding scale.

Insulin Requiring Diabetic Patients (IDDM -Insulin dependent diabetes mellitus)

Minor Surgery (as defined above)

Morning list (Day of operation)

- No breakfast, no insulin, place first or early on list
- BM testing- 1 hour preoperatively and intraoperatively as appropriate
  2 hourly postoperatively until eating then 4 hourly

Postoperatively

- Restart normal S/C insulin regime with first meal.
- Fast acting insulin at normal meal dose

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- Mixed insulin at 2/3 usual dose

If there is prolonged fast (more than one meal missed - convert to GKI or sliding scale)

Afternoon list (Day of operation)

- Light breakfast
- Half dose of insulin
- Place early or first on list on list if possible
- Blood glucose- 1 hour preoperatively and at intraoperatively as appropriate
- 2 hourly postoperatively until eating then 4 hourly

Postoperatively

- Restart normal S/C insulin regime with first meal.
- Fast acting insulin at normal meal dose
- Mixed insulin at 2/3 usual dose

Major surgery

Day of operation (Morning list)

- No breakfast, no insulin, place first on list wherever possible.
- Set up GKI or sliding scale on the ward before coming to theatre

Day of operation (Afternoon list)

- Light breakfast
- Half dose of insulin
- Place first on list if possible
- Set up GKI or sliding scale on the ward before coming to theatre

Sliding Scale Infusion Procedure

- Start sliding scale at 08.00hrs if morning list and 11.00hrs if afternoon list
- Take blood for lab glucose and U&Es pre-operatively (do as urgent)
- Check BMs hourly, and adjust as necessary.
- Check U&Es daily post-op until tolerating oral diet and normal insulin regimen has been restarted

The insulin and dextrose infusions are given via separate infusion pumps. If using the same IV line the Dextrose must run through a one way anti-reflux valve to ensure insulin does not track up the IV line.

Dextrose / Potassium Infusion

Use 5 % dextrose with 10mmol KCl in the 500ml bag. (K+ added at manufacture).Infused at 80 ml per hour (infuse at 60ml per hour in patients less than 60kg)

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The patient will require additional saline containing fluids such as 0.9% Normal Saline commensurate with their daily requirements and surgical losses which must be assessed and replaced in the usual way.

Insulin infusion

Blood glucose (mmol / l)	**Insulin infused at (units / hour)** (1 unit per ml)
0-2.0	Call medical help. Give 20-50ml of 50% dextrose.
2.1-4.0	Stop insulin infusion, monitor patient carefully, repeat BM in 30 mins
4.1-6	0.5
6.1-8	1
8.1-12	2
12.1-16	4
16.1-22	5
>22	6, call medical help

50 units fast acting insulin (actrapid) made up to 50 ml with saline
(i.e.concentration = 1 unit per ml)
Initial Suggested Infusion Rates (may need to be modified) If it is proving difficult to reduce the blood sugar level, then consider increasing the rate of insulin for each glucose level or giving a small bolus of insulin.
Patients normally on higher total daily doses of insulin will need higher rates of insulin infusion.

The sliding scale should continue until the patient is able to eat and drink normally.

Non-insulin dependent

Stop infusion and restart oral hypoglycaemics when eating and drinking

Insulin dependent

Most patients will be able to have normal twice-daily insulin, but some may require four injections for the first few days.

GKI Procedure

- GKI stands for Glucose-Potassium-Insulin
- Start GKI Start at 08.00hrs if morning list and 11.00hrs if afternoon list
- Take blood for lab glucose and U&Es pre-operatively(do as urgent)
- Check BMs hourly, and adjust GKI if necessary.
- Target BMs are 6-11mmol/l
- Check U&Es daily post-op until tolerating oral diet and normal insulin regimen has been restarted

Standard GKI

Pre-made up bag of 500mls 10% dextrose/10mmol KCL
15 units Actrapid insulin

Run infusion a80mls/hour
60mls/hour if patient < 60kg

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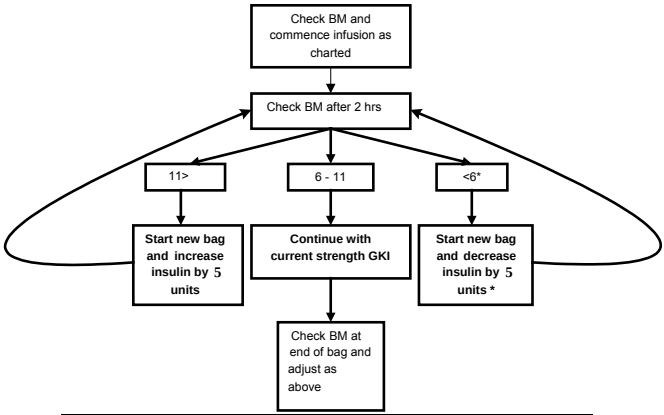

Changes to GK

IIf BM<2 then 20-50 ml of 50% dextrose IV and start 5% dextrose without insulin

If BM<4 then reduce insulin as advised BUT only restart infusion once BM > 6 (check hourly)

If running for over 24 hr check U/E may need separate saline infusion if hypotensive or hyponatraemic

Check BM if clinical situation changes i.e. change in conscious level or look hypoglycaemic

The GKI regimen should continue until the patient is able to eat and drink normally.

The patient will require additional saline containing fluids commensurate with their daily requirements and surgical losses which must be assessed in the usual way.

Non-insulin dependent

Stop infusion and restart oral hypoglycaemics when eating and drinking

Insulin dependent

Most patients will be able to have normal twice-daily insulin, but some will require four injections for the first few days.

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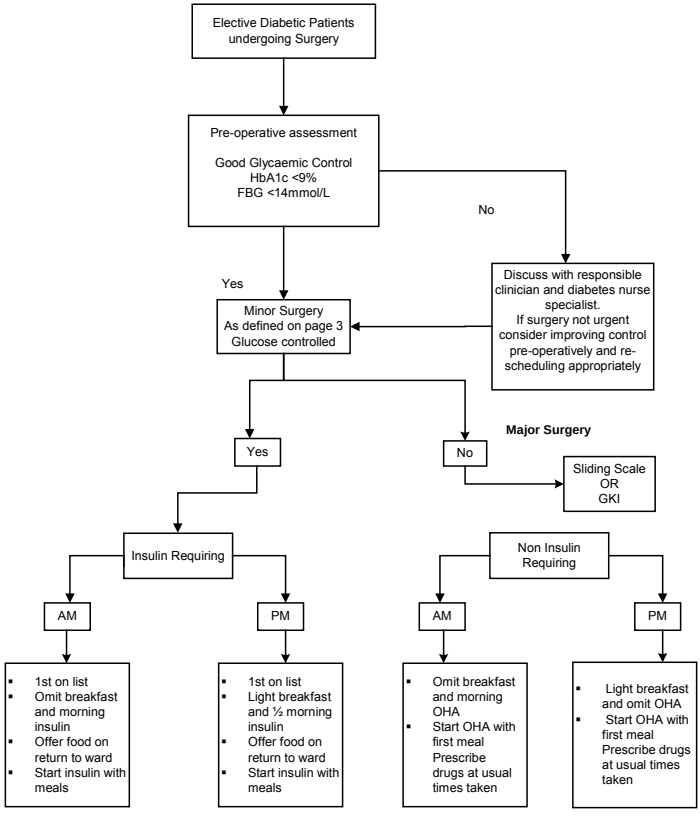
This flow chart is a guide and must be used in conjunction with the written guidelines



Abbreviations: OHA = oral hypoglycaemic agent
FBG = fasting blood glucose

Pharmacist Lead: L. Beverely

Recommendations for Blood Glucose Monitoring in Type1 Diabetes

Blood glucose monitoring guidelines for the Forth Valley area were updated and approved by the Managed Clinical Network in 2005.

Routine testing

- Persons with Type 1 diabetes mellitus should test their blood glucose (BG) levels regularly and be taught how to alter their insulin therapy appropriately and when necessary.
- Four times a day, pre-meal tests would be ideal as Type 1s are more liable to experience day-to-day instability of their glycaemic control.
- It is accepted, however, that this may be unrealistic to achieve with all persons with Type 1 DM and, depending on motivation and lifestyle, regular testing of some nature should therefore be encouraged e.g. at least one test per day at different times or four tests a day every 3rd or 4th day.
- Ideal control levels for a Type 1 diabetic would be 4-7 mmols fasting, 7-8 mmols pre-meals and less than 9 mmols post-prandially.

Special considerations

- During periods of ill-health e.g. infection, vomiting and diarrhoea, significant medical illness, Type 1s should be actively encouraged to check their BG levels at least 4 times daily, and more frequently depending on the severity of their illness i.e. if ketones are present, if unable to take regular diet, if on dialysis, if post myocardial infarction.
- During periods of illness which result in the production of ketones, Type Is should be provided with emergency sliding scale insulin instructions (available from Diabetes Centres), which advise on extra soluble insulin required. FV guidelines do indicate that if levels persistently > 17 mmols with high ketones, admission must be considered.
- If a Type 1 develops hypoglycaemia unawareness they are again encouraged to check their BG levels 4+ times daily. BG levels should be higher than normal, with fasting levels of 6-8 mmols and pre-meal levels of 9-11 mmols.
- Type 1 diabetics should monitor their BG level prior to driving. Specific advice should be provided for those people with hypoglycaemia unawareness. Emphasis must be placed on safety at all times i.e. dietary/alcohol advice; exercise advice.
- Type 1 diabetics should be encouraged to monitor their BG levels both pre- and post-aerobic exercise, with advice given regarding appropriate insulin adjustment and carbohydrate intake.
- Elderly Type 1 diabetics, especially if living alone, should aim for BG levels similar to those persons with hypoglycaemia unawareness.
- During pregnancy, Type 1 women should aim for fasting levels of 3.5-5.5 mmols, pre-meal levels of less than 6.5 mmols and 2 hours post-prandial levels of less than 8.5 mmols.

Recommendations for Blood Glucose Monitoring in Type 2 Diabetes

Insulin therapy (including combination with oral antidiabetic (OADs) agents)

- Persons with Type 2 diabetes mellitus commencing on insulin therapy should be encouraged to test their fasting blood glucose (BG) levels each day initially, with one further test at variable times during the day i.e. both pre- and 2 hours post-meals.
- Once control has settled (see below), Type 2s should continue to test their BG levels regularly i.e. daily at different times or 2/3 times every 3rd day, including both pre- and post-prandial levels.
- Ideal control levels for a Type 2 diabetic on insulin therapy would be 4-7 mmols fasting, 7-8 mmols pre-meals and less than 9 mmols post-prandially.

Ideal control levels for Type 2s on oral medication or diet

- Ideal control levels for Type 2s on oral medications or diet alone (if monitoring) should be 4-7 mmols fasting, 7-8 mmols pre-meals and less than 9 mmols post-prandially, unless elderly (see 'Special considerations'). Routine self-monitoring may not be necessary if regular HbA1c tests are satisfactory.

Sulphonylurea medication (alone and in combination with other OAD agents)

- Type 2s on these medications should be taught BG monitoring and encouraged to check their levels regularly in view of the increased risk of hypoglycaemia i.e. 2 or 3 days a week, both fasting and at variable times throughout the day.

Metformin/Glitazone medication

- Type 2s on these medications should be taught to self-monitor if possible to allow for the testing of BGs when diabetic control is unstable; when therapy is being adjusted; during periods of ill-health; to establish post-prandial hyperglycaemia (which may be related to macrovascular disease); if steroid medication is required; if no regular HbA1c is available.
- Consideration should be given to each individual's circumstances i.e. self-monitoring should be encouraged if history of cardiac and/or vascular disease (or strong family history of same); if person is motivated and keen to maintain good glycaemic control; if changes/additions to therapy are likely. If person unable to test, or unwilling, urine testing should be encouraged.

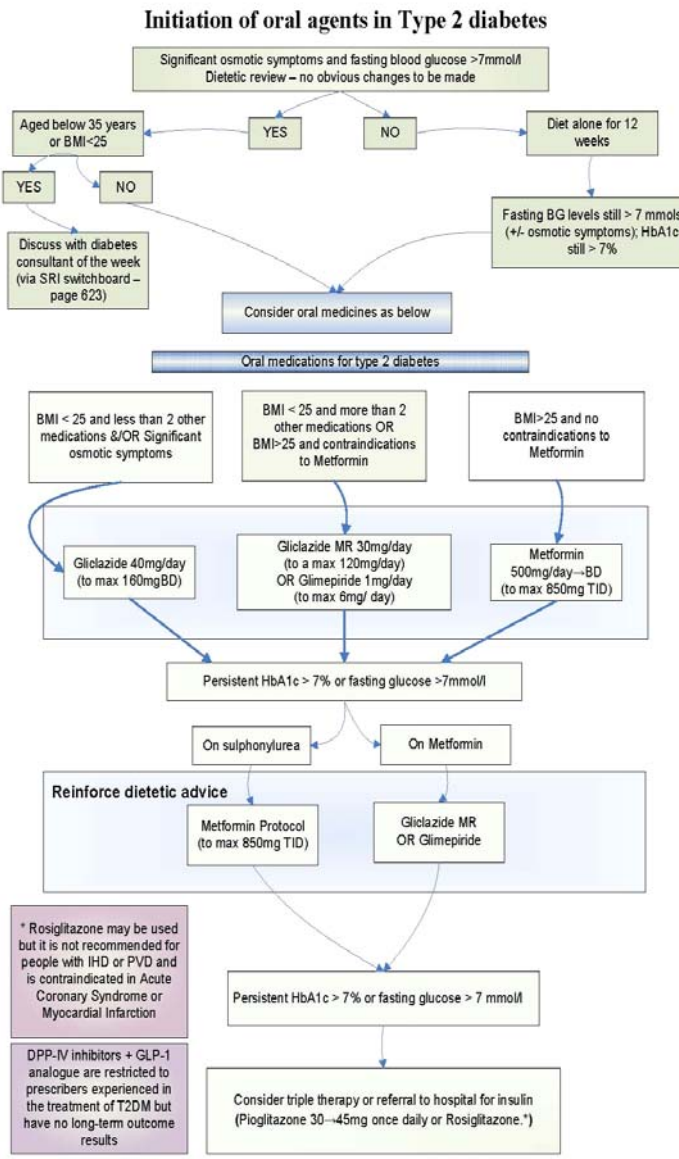
Diet only

- Type 2s controlled by diet and lifestyle measures must also be considered individually, taking into account a person's circumstances as described in the section on 'Metformin/Glitazone medications'.

Special considerations

- During periods of ill-health e.g. infection, vomiting and diarrhoea, significant medical illness, Type 2s should be actively encouraged to check their BG levels more frequently i.e. up to 4 times daily. NB Ketones do not usually develop in Type 2s, although it may be necessary to test for same if there is the possibility that the person is becoming 'insulin-requiring'.
- Type 2 diabetics on insulin therapy should be encouraged to monitor their BG level prior to driving. Emphasis must be placed on safety at all times i.e. dietary/alcohol advice; exercise advice.

- Type 2 diabetics on insulin therapy should be encouraged to monitor their BG levels both pre- and post-aerobic exercise, with advice given regarding appropriate insulin adjustment and carbohydrate intake.
- Elderly Type 2 diabetics, especially if living alone and on insulin therapy, should aim for fasting levels of 6-8 mmols and pre-meal levels of 9-11 mmols. This may also be appropriate if on sulphonylurea medication.



Ref. NHS Forth Valley Management Programme for Diabetes Mellitus Mar. 2008-Produced by the FV Managed Clinical Network (Initiation of Oral Agents in Type 2 Diabetes) *Lead David Munro*

Appendix 39

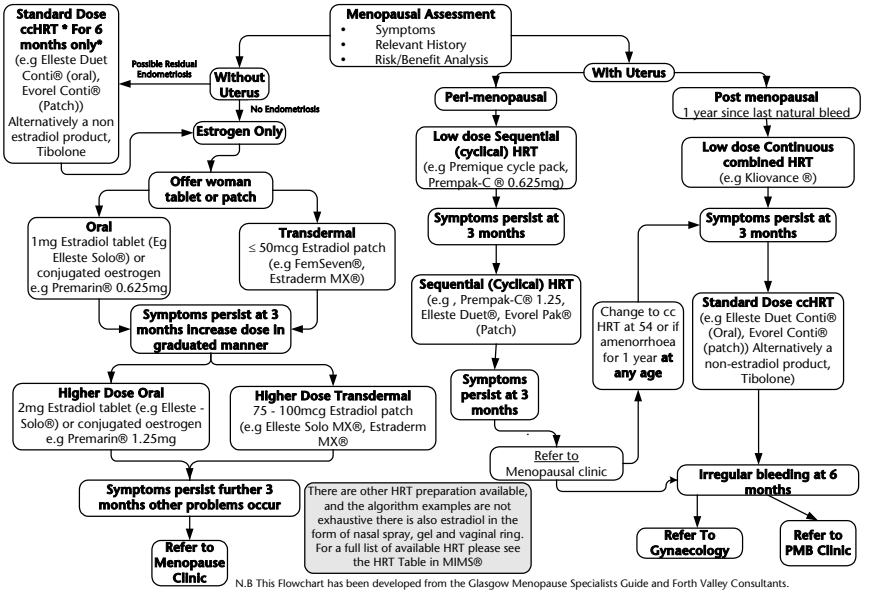
Blood Glucose Meters – Formulary Choices

Agreed and supported by the FV Diabetes MCN and Primary Care Prescribing Group - May 2007

FEATURE / **METER TYPE** (*Manufacturer*)	**Reliable, accurate; easy to use**	**Digital 'screen' size**	**Timed/ dated memory capacity**	**Read results time**	**Down-loadable to PC**	**Suitability for particular patient groups**	**Company support**	**Other comments**
Accu-chek Aviva *(Roche Diag.)*	Yes	Good size	500 results	5 seconds	Yes	Supplied with improved lancing device (Multistix)	Good service. Free batteries & control solution	• easy to use 'chip' for calibration • provided with a lancing device which uses a non-reusable, 6 lancet drum which requires no formal sharps disposal
Accu-chek *Compact Plus* (*Roche Diag.*)	Yes	Good size	300 results	5 seconds	Yes	Automatic coding and release of strip	Good service. Free batteries & control solution	• integrated, detachable lancing device
MediSense *Optium Xceed* (*Abbott Diabetes*)	Yes	Good size	450 results	5 seconds	Yes	Ideal for Type 1's due to blood ketone strips	Good service from company if problems with meter. Free control solution	• able to test for ketones using this device • easy to obtain AAA batteries • can be awkward to open strips as wrapped individually in foil
One-Touch *Ultra2* (*LifeScan*)	Yes	Good size	500 results	5 seconds	Yes	Easy to use	Good service. Free batteries & control solution	• very small amount of blood required
Freestyle Mini (*Abbott Diabetes*)	Yes	Smaller but with illuminated display	250 results	7 seconds	Yes	Popular with younger age groups, but not suitable for all	Good service from company if problems with meter. Free control solution	• smallest meter available • smallest sample of blood of all meters available
Ascensia *Contour* (*Bayer Diag.*)	Yes	Good size	240 results	15 seconds	Yes	Self-coding	Good service. Free batteries & control solution	• very small amount of blood required
GlucoMen *Visio* (*Menarini Diag.*)	Yes	Good size	250 results	10 seconds	Yes	Supplied with improved lancing device (Glucoject)	Good service. Free batteries & control solution	• small blood sample required • uses improved and less painful lancing device with patient research to support same

Appendix 40

Hormone Replacement Therapy (HRT)



N.B This Flowchart has been developed from the Glasgow Menopause Specialists Guide and Forth Valley Consultants. Please use it as a guide showing the most effective routes for patient compliance and efficacy

The evidence base for HRT use has changed over the past few years and the results of recent research have affected womens' decision to start or continue HRT. It is important that the risks and benefits are discussed with each patient. For symptom control, where benefits outweigh risks, HRT is still used for two to three years. The Committee on Safety of Medcines advises that the minimum effective dose should be used for the shortest duration for women over 50 years. Treatment should be reviewed at least annually and for osteoporosis alternative treatments considered. HRT does not reduce the incidence of coronary heart disease and it should not be prescribed for this purpose

Pharmacist Lead: Jann Davison

Appendix 41

Patients Receiving Chemotherapy Who Become Unwell
Guidance for Community Healthcare Practitioners

Cancer patients receiving chemotherapy are at risk of infection because both disease and treatment can compromise the host defenses. Infection is the cause of fever in 55-70% of cancer patients although cancer itself can cause elevations in temperature due to tumour necrosis, inflammatory cytokines etc. The risk of infection is directly related to the depth and duration of neutropenia. Patients most at risk are those with a prolonged (>48 hours) neutropil count of of $<0.5x10^9$/L . **Note:** Neutropenia alone is not a reason for admission to hospital. If patient is afebrile and asymptomatic they should remain at hoje and be advised to report promptly to the GP if they become unwell..

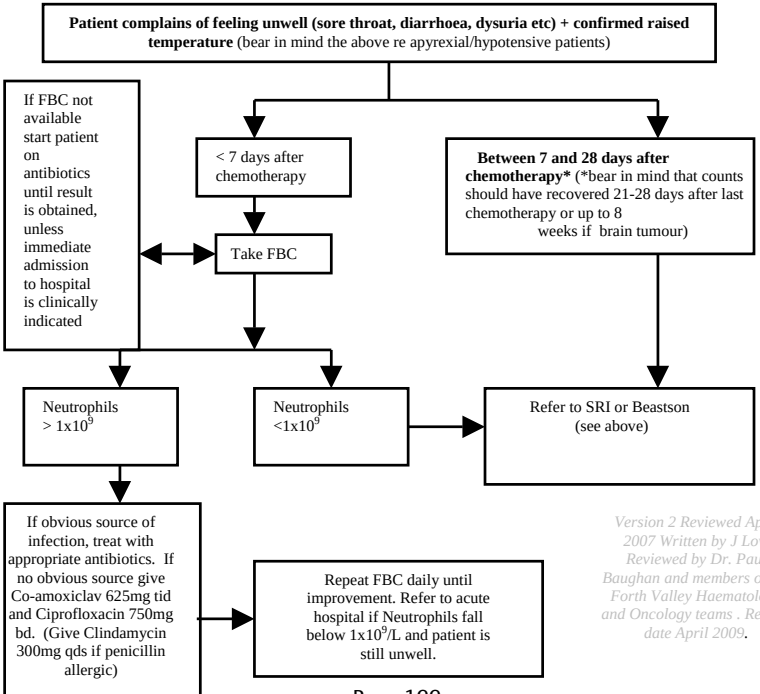
Definition of Neutropenic Sepsis:
Neutropil count $<1.0x10^9$/L **AND** Temperature of >37.5 degrees celcius on two separate measurements 30 minutes apart **OR** >38 degrees celcius on one measurement.

Clinical Presentaton: Fever may be mild, but a history of rigors is extremely important and suggests bacteraemia. The presence of neutropenis alters the inflammatory response, potentially masking the cource of infection. Acetely unwell patients may be apyrexial – hypothermia can indicate severe sepsis with a poor prognosis. Hypotension may be a sigh of sepsis in patients who are unwell but apyrexial.

Neutropenic Sepsis is a life-threatening medical emergency

Management
All patients with suspected infection and neutropenia should be admitted to Stirling Royal Infirmary Clinical Assessment Unit under the medial receiving team.
The EXCEPTIONS to this are: 1. Patients *currently* receiving radiotherapy
2. Patients on a clinical trial administered at the Beatson
These two groups of patients should be admitted to the West of Scotland Beatson Cancer Centre via the on-call registrar 0141 301 7000

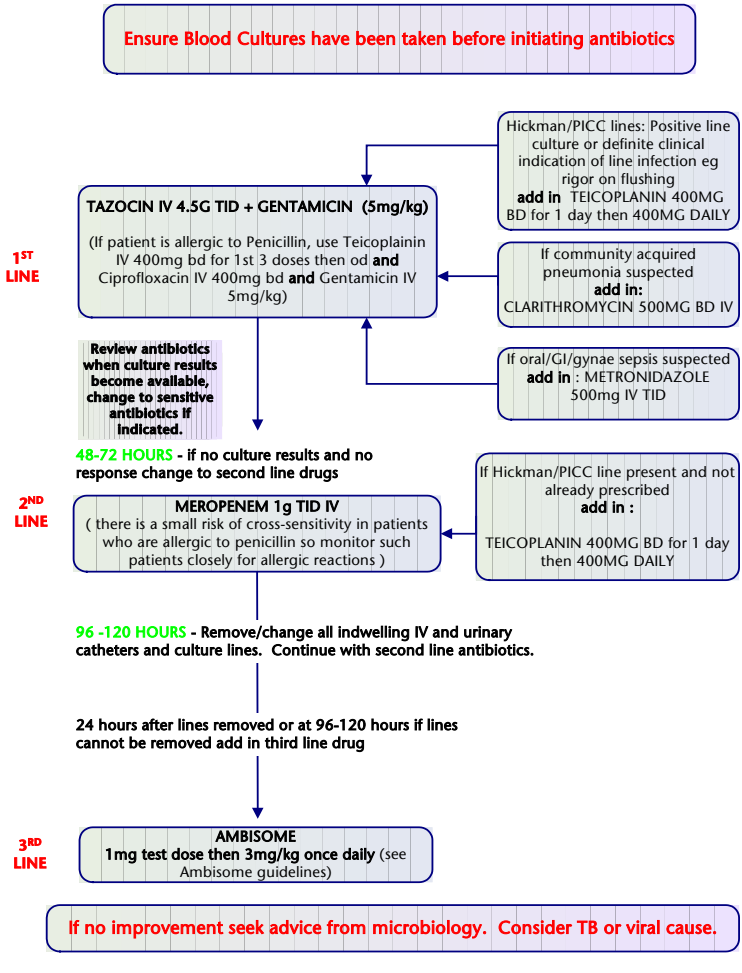
Management of Unwell Patients Receiving Chemotherapy



Version 2 Reviewed April 2007 Written by J Low Reviewed by Dr. Paul Baughan and members of the Forth Valley Haematology and Oncology teams . Review date April 2009.

Appendix 42

NHS Forth Valley Acute Hospitals
Neutropenic Sepsis Antibiotic Policy



Version 3-March 2007 Reviewed by Dr I king, Dr R Neilson, Dr M Hughes, Dr C brammer, J Sneddon, J Low

Appendix 43

NHS Forth Valley

NHS FORTH VALLEY-ACUTE SERVICES

Potential Neutropenic Sepsis - Nursing and Medical Action

Neutropenic sepsis should always be considered a possibility when patient has had chemotherapy within last 5 days to 3 weeks. If patient is seriously unwell i.e. requiring MICU/ICU management contact on-call Consultant Haematologist.

Within 15 minutes of arrival at hospital

Nursing Action	
1	Immediately record baseline observations on Early Intervention Score Sheet.
2	Inform medical staff IMMEDIATELY if patient triggers one red or two yellow scores and inform bed manager that a bed needs to be made available.
3	Insert peripheral cannula. Take FBC and differential, U&E and blood cultures. If Hickman or other lines in situ take additional blood cultures from line.
4	Commence IV fluids immediately – NaCl 0.9% or Gelofusin.
5	If neutrophils <0.5 x 10^9/L, nurse in side room if possible.
6	Ensure antibiotics are administered, ideally within 30 minutes of admission.

Medical Action/SHO	
1	Patient should be admitted to CAU or Ward 23 under medical receiving team.
2	Assess temp, pulse and BP recordings.
3	Record patient's conscious level.
4	Clerk in patient and record brief history of recent chemotherapy.
5	Prescribe IV fluids – NaCl 0.9% or Gelofusin.
6	Prescribe 1st line IV antibiotics according to Neutropenic Sepsis Antibiotic Policy (v3–March 2007).
7	Request chest X-ray.
8	Ensure appropriate bloods have been taken – FBC, differential count, U&E and blood cultures.

Next 45 minutes/arrival onto ward

Nursing Action	
1	Continue to monitor and record observations every 2-4 hours or every 15 minutes if patient has red or yellow score(s).
2	Monitor fluid balance accurately.
3	Carry out a full infection screen obtaining MSSU, throat swab, sputum sample, Hickman/PICC line swab, wound swab and stool sample.
4	Complete admission details once patient is stable.

Medical Action/SHO	
1	Clerk-in and examination of patient by JHO/SHO.
2	Review initial blood results and take appropriate action.
3	Manage dehydration if present.
4	Review chest x-ray and other available results to identify source of infection.
5	Ensure appropriate antibiotics are prescribed.
6	If Hickman line infected refer to Hickman line policy.

Subsequent Hours

Nursing Action	
1	Keep medical staff informed of patient's condition
2	Review intervention hourly if BP falling or urine output is decreasing.
3	Continue observations every 2-4 hours or more frequently if clinically indicated.
4	Ensure IV antibiotics are administered at appropriate times.
5	Accurate fluid balance and catheterisation if appropriate.
6	Inform specialist oncology nurses and patient's oncology/haematology consultant of admission.
7	PATIENT MUST NOT BE BOARDED OUT TO ANOTHER WARD
8	Plan discharge when neutrophil count >1x10^9/L and patient is well.

Medical Action/SHO	
1	Discuss transfer to haematologists (9am-5pm) or next morning (neutropenic sepsis and no complicating factors – see haematology referral guidelines.)
2	Review blood cultures and antibiotics after 48 and 96 hours. If no improvement refer to Neutropenic Sepsis Antibiotic Policy for 2nd and 3rd line agents.
3	If patient deteriorates consider MICU/ICU admission
4	Consider use of colony stimulating factors if patient has prolonged neutropenia, hypotension, extensive tissue involvement (e.g. pneumonia) or if there is evidence of organ failure.
5	Plan discharge when neutrophil count >1x10^9/L and patient is well.
6	If patient is in a clinical trial inform Clinical Trials Nurse of their admission. (ext 6223)

If the patient is being treated by a Beatson oncologist and you need further information regarding the patient eg date of last chemotherapy, contact the Beatson on-call specialist registrar via their switchboard on 0141 3017000

Version 3 – March 2007 Reviewed by Dr I King, Dr R Neilson, Dr M Huges, Dr C Brammer, J Low, J Sneddon

Appendix 44

HYPERCALCAEMIA of MALIGNANCY TREATMENT GUIDELINE

	Corrected Calcium level
Mild	2.7 – 3.0 mmol/L
Moderate	3.1 – 3.3 mmol/L
Severe	>3.3 mmol/L

Hypercalcaemia most commonly occurs in patients with myeloma and bone metastases ie tumour induced, but it may also occur in non-malignant conditions eg hyperparathyroidism, sarcoidosis, thyrotoxicosis.

Symptoms: (usually occur with corrected calcium >3mmol/L)

- Dehydration
- Weakness
- Polyuria
- Nausea/vomiting
- Weight loss
- Polydipsia
- Lethargy
- Constipation
- Depression
- Confusion
- Anorexia
- Renal failure
- Abdominal pain
- Hypertension
- Cardiac arrest

Treatment:

1. All patients should be started on IV Sodium Chloride 0.9%, 2-6L/24 hours (as tolerated) to endure adequate hydration. Once patient is hydrated consider using IV Furosemide along with fluids to increase urine output and promote renal calcium excretion. Avoid thiazides as they reduce calcium excretion. For patients with mild hypercalcaemia fluids alone may be sufficient to reduce the calcium level and no further treatment may be required. If the calcium has not normalized after 24 hours, go to step 2.

2. IV Pamidronate should be prescribed according to the calcium level (See dosing chart below). If the patient is particularly symptomatic this should be started at the same time as the fluid hydration. The dose should be made up in the appropriate volume of Sodium Chloride 0.9% (see table). **In patients with creatinine clearance/GFR>40ml/min Pamidronate should be infused at a maximum rate of 1mg/minute. In patients with creatinine clearance /GFR<40ml/min the maximum rate of administration is 22.5mg/hour.**

Serum Calcium (mmol/L) (corrected or uncorrected)	Pamidronate Dose (Single IV dose)	Minimum volume of dilution
Up to 3	15-30mg	250ml
3.0 – 3.5	30-60mg	250ml
3.5 – 4.0	60-90mg	500ml
>4.0	90mg	500ml

3. Pamidronate is not recommended in patients with a creatinine clearance of less than 30ml/min unless in case of life-threatening tumour induced hypercalcaemia where the benefit outweighs the potential risk. In such cases contact your clinical pharmacist for advice on appropriate doses.

4. The patient's electrolytes, calcium, phosphate and renal function should be monitored daily.

Appendix 44

5. Pamidronate has a delayed effect and should start to reduce the calcium level in 2-3 days with maximal effect within 7 days.

6. If corrected serum calcium continues to rise or has not returned to the reference range **within 5 days** of giving the Pamidronate, zoledronic acid may be used. **4mg Zoledronic Acid** should be prescribed for all patients with a serum calcium of >3mmol/L. *It is not recommended in patients with a serum creatinine* ***Error! Unknown switch argument.****400 µmol/l due to lack of safety data.*

7. Adverse effects are usually mild and transient. Most common adverse effects are fever (within 48 hours of dose), influenza-like symptoms, hypocalcaemia and hypophosphataemia.

8. Duration of response to bisphosphonates is usually 3-4 weeks. The hypercalcaemia will almost certainly recur if there is no treatment of the underlying cause. Bisphosphonates can be repeated whenever hypercalcaemia recurs, however evidence suggests that the effect may diminish with repeated doses.

Please note that this guidance relates to treatment of hypercalcaemia of malignancy only, bisphoshonates may be given to prevent skeletal events/bone pain in certain tumour types, regardless of calcium level. If in doubt, contact haematologist or oncologist (as appropriate) for advice.

Version 3 April 2007 Written by J Low. Approved by Forth Valley Cancer Board
References: WoSCAN Guidelines on the Use of Bisphosphonates (2005)
Stewart AF. Hypercalcaemia Associated with Cancer. NEJM. 2005;352(4):373-379

Appendix 45

SUSPECTED HYPERCALCAEMIA of MALIGNANCY GUIDELINE
for Primary Care

Definition: Elevated blood calcium level

	Corrected Calcium level
Mild	2.7 – 3.0 mmol/L
Moderate	3.1 – 3.3 mmol/L
Severe	>3.3 mmol/L

Cause: Hypercalcaemia most commonly occurs in patients with myeloma or bone metastases ie tumour induced, but it may also occur in non-malignant conditions eg hyperparathyroidism, sarcoidosis, thyrotoxicosis.

Clinical Presentation: (symptoms usually occur with corrected calcium >3mmol/L)

- Dehydration
- Weakness
- Polyuria
- Abdo pain
- Nausea/vomiting
- Weight loss
- Polydipsia
- Hypertension
- Lethargy
- Constipation
- Depression
- Cardiac arrest
- Confusion
- Anorexia
- Renal failure

Management:

1 If you suspect that a patient is hypercalcaemic but their symptoms do not require urgent admission to hospital, obtain an urgent calcium level. If the patient is symptomatic and hypercalcaemic arrange admission to Stirling Royal Infirmary clinical assessment unit, under the medical receiving team. If the patient has mild hypercalcaemia and you are unsure as to whether admission is required contact the patients known consultant haematologist/oncologist for advice.

2 Patients who are acutely unwell should be admitted urgently to hospital. Do not delay admission by waiting for a calcium level.

3 As dehydration can worsen symptoms, encourage the patient to drink fluids until admission can be arranged.

4 After discharge from hospital:

a. If there has been no treatment of the underlying cause the patients calcium levels should be monitored in the community every 2 weeks and appropriate action taken. If they remain stable for several months reduce monitoring to monthly.

b. If the patient has received treatment for the cause of hypercalcaemia the calcium level should be monitored every 2 weeks initially. If the calcium remains normal for 4 weeks then frequency of monitoring can be reduced to monthly.

Further Information: Treatment will usually involve hydration of the patient and administration of a bisphosphonate. The underlying cause will be investigated and treated (if appropriate). Without treatment of the underlying cause the hypercalcaemia is likely to recur.

Contact numbers Consultant haematologist via SRI switchboard 01786 430000
West of Scotland Beatson Cancer Centre 0141 301 7000.

Version 1 April 2007 Written by J. Low
Reviewed by Dr Paul Baughan and members of the Forth Valley haematology and Oncology teams
Review date April 2009

Appendix 46

SUPERIOR VENA CAVA OBSTRUCTION (SVCO) TREATMENT GUIDELINE
for ACUTE SERVICES
–Patients with known malignancy

BACKGROUND Superior vena cava obstruction results from the compression of the superior vena cava (SVC) by either tumour arising in the right main or upper lobe bronchus or mediastinal lymphadenopathy (usually right paratracheal or precarinal). This gradual, insidious or acute compression/obstruction of the SVC causes a reduction of blood flow from the head, neck and upper extremities to the heart. Because the SVC is surrounded by rigid structures, it is relatively easy to compress. The low intravascular pressure also allows for the possibility of thrombus formation, such as catheter-induced thrombus. Although the syndrome can be life threatening, its presentation is often associated with a gradual increase in symptoms. Over 90% of cases are associated with malignancy and 80% of these are associated with lung cancer.

CLINICAL PRESENTATION In the early clinical course, few, if any, signs or symptoms of superior vena cava syndrome (SVCS) may be manifested. Typically, symptoms accelerate as the underlying malignancy increases in size and/or invasiveness. Note: Symptoms may begin suddenly or gradually, and may worsen when bending over or lying down.

•Dyspnoea	•Redness of the face or cheeks	•Nasal stuffiness
•Neck, trunk or extremity distension.	•Engorged collateral veins	•Conjunctival redness
•Facial swelling, including periorbital swelling	•Cough	•Vision changes
•Orthopnoea	•Headache	

INVESTIGATIONS The diagnosis of superior vena cava syndrome (SVCS) is often made on clinical grounds alone, combining clinical presentation +/- history of thoracic malignancy.

- Plain xrays are often helpful, showing a mediastinal mass in the majority of patients.
- Thoracic CT scanning is helpful, but remember that the histologic diagnosis is important when initiating therapy.

TREATMENT The treatment of superior vena cava syndrome (SVCS) depends on the etiology of the obstruction, the severity of symptoms and patient prognosis. Radiation therapy or chemotherapy should be withheld until the etiology of the obstruction is clear.

Steroids – Used to decrease the inflammatory response to tumour invasion and oedema surrounding the tumour mass, reducing pressure on the SVC. Recommended drug/dose: Dexamethasone 8mg twice daily orally (or IV if oral route contraindicated). Consider use of a gastroprotective agent if used in combination with NSAID's or if patient has a gastric history. Steroids should be continued for 48-72 hours, if symptoms improve gradually reduce the dose. If there is no improvement – stop.

Interventional radiology – It may be possible to place a stent to relieve symptoms associated with SVCO, particulary in patients with tumours that are not chemo-sensitive. Symptom relief may be more rapid than with chemotherapy or radiotherapy in lung tumours[1].

Radiotherapy – used to treat tumours that are not chemo-sensitive. Choice between radiotherapy and stenting will depend on various factors including patient's previous treatment and should be discussed with an oncologist.

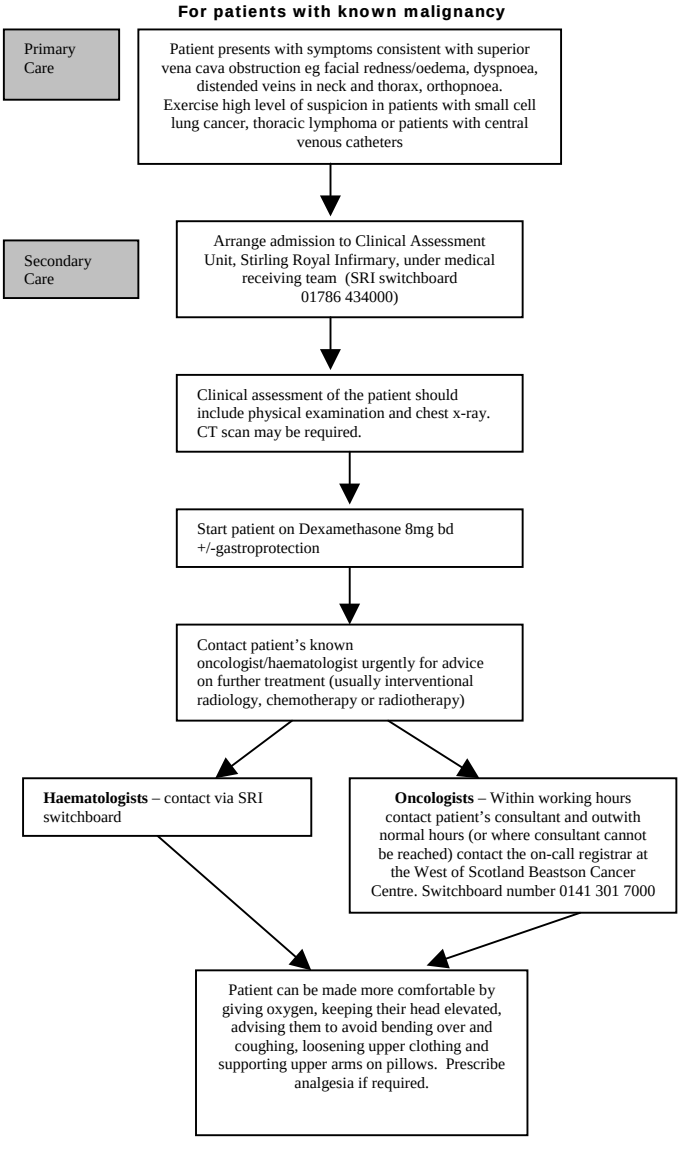
Chemotherapy – Treatment of choice for chemo-sensitive tumours eg lymphoma and small cell lung cancers.

Thrombectomy – May be used where there is a documented thrombus in the SVC causing obstruction. Thrombolytic agents may be used.

Reference: 1 Cochrane Review 2006. Steroids, radiotherapy, chemotherapy and stents for superior vena caval obstruction in carcinoma of the bronchus http://www.cochrane.org//reviews/en/ab001316.html

Appendix 46

Treatment/Referral Pathway for Suspected Superior Vena Cava Obstruction



Reference: 1 Cochrane Review 2006. Steroids, radiotherapy, chemotherapy and stents for superior vena caval obstruction in carcinoma of the bronchus http://www.cochrane.org//reviews/en/ab001316.html

SVCO Guideline Version 2 March 2007 Written by J Low Reviewed by Oncology/Repiratory/Haematology/Radiology

Appendix 47

SUPERIOR VENA CAVA OBSTRUCTION (SVCO) GUIDELINE
for PRIMARY CARE

DEFINITION Narrowing or blockage of the superior vena cava

CAUSE Superior vena cava obstruction results from the compression of the superior vena cava (SVC) by either tumour arising in the right main or upper lobe bronchus or mediastinal lymphadenopathy (usually right paratracheal or precarinal). This gradual, insidious or acute compression/obstruction of the SVC causes a reduction of blood flow from the head, neck and upper extremities to the heart. Because the SVC is surrounded by rigid structures, it is relatively easy to compress. The low intravascular pressure also allows for the possibility of thrombus formation, such as catheter-induced thrombus. Although the syndrome can be life threatening, its presentation is often associated with a gradual increase in symptoms. Over 90% of cases are associated with malignancy and 80% of these are associated with lung cancer.

CLINICAL PRESENTATION In the early clinical course, few, if any, signs or symptoms of superior vena cava syndrome (SVCS) may be manifested.

Typically, symptoms accelerate as the underlying malignancy increases in size and/or invasiveness. Note: Symptoms may begin suddenly or gradually, and may worsen when bending over or lying down.

- Dyspnoea
- Redness of the face or cheeks
- Nasal stuffiness
- Neck, trunk or extremity distension.
- Engorged collateral veins
- Conjunctival redness
- Facial swelling, including periorbital swelling
- Cough
- Vision changes
- Orthopnoea
- Headache

MANAGEMENT If a patient presents with symptoms consistent with superior vena cava obstruction eg facial redness/oedema, dyspnoea, distended veins in neck and thorax, orthopnoea :

ADMIT TO CLINICAL ASSESSMENT UNIT, STIRLING ROYAL INFIRMARY, UNDER MEDICAL RECEIVING TEAM (contact bed manager via SRI switchboard 01786 434000)

Exercise high level of suspicion in patients with small cell lung cancer, thoracic lymphoma or patients with central venous catheters. In some patients SVCO may be the first presenting symptom of cancer.

Patient can be made more comfortable by giving oxygen, keeping their head elevated, advising them to avoid bending over and coughing, loosening upper clothing and supporting upper arms on pillows.

FURTHER INFORMATION The diagnosis of superior vena cava syndrome (SVCS) is usually made on clinical grounds alone, combining clinical presentation +/- history of thoracic malignancy.

- Plain chest xray and CT scans are often helpful, showing a mediastinal mass in the majority of patients.

- These scans will be done on admission to hospital

The treatment of superior vena cava syndrome depends on the etiology of the obstruction, the severity of symptoms and patient prognosis. Steroids, stenting +/- anticoagulation, radiation therapy or chemotherapy should be withheld until the etiology of the obstruction is clear. Interventional radiology ie stenting, may be used to rapidly control symptoms.

Reference: Cochrane Review 2006. Steroids, radiotherapy, chemotherapy and stents for superior vena cava obstruction in carcinoma of the bronchus

Pharmacist Lead: Joanne Low

Appendix 48

NHS Forth Valley

MALIGNANT SPINAL CORD COMPRESSION GUIDELINES
Secondary Care

Spinal cord compression (SCC) should be treated as a medical emergency and there should be a high index of suspicion in all patients with a diagnosis of malignancy
Early detection of initial symptoms is key as any delay in diagnosis can lead to paralysis and can adversely affect life expectancy

Definition:
- Compression of the spinal cord and nerve roots (including cauda equina nerve roots)

Cause:
- Bone metastases – usually in body of vertebra(e), often multiple levels
- Soft tissue disease eg lymphoma in spinal canal
- Most commonly affects patients with cancer of the lung, prostate, breast (account for 50% of cases) but can affect patients with all tumour types and at any time during disease

Clinical Presentation:

Early Presentation	Late Presentation
Back pain *– often progressing over several weeks. The patient may have an increased use of breakthrough analgesia.* ***Radicular pain is a particular cause for concern****, often described as a tight band around the chest or abdomen or nerve-like pain in upper thighs. Radicular pain is exacerbated by activities involving the valsalva manoeuvre, such as: coughing, sneezing, straining, straight leg raising and neck flexion. May worsen on lying down and relieved on sitting and is typically worse at night. There may be thoracic or anterior thigh distribution.* There may be significant change in the nature of longstanding pain (unremitting, feelings of despair). **Reduced mobility** - 'off legs', falls, heavy or stiff limbs, new difficulty with 'getting up stairs'	**Sensory or motor change** – especially if bilateral eg muscle weakness, loss of coordination, paralysis, parasthesia, loss of sensation **Autonomic dysfunction** *eg Constipation/urine retention/recent catheterisation*

Unexplained 'taking to bed' or needing a catheter, even in the absence of pain should raise the possibility of spinal cord compression

Diagnosis:
- ***have a high index of suspicion in all patients with malignancy as any delay in diagnosis can lead to paralysis and can adversely affect life expectancy***
- MRI scan of whole spine within 24-48 hours
- Multi-detector row CT (MDCT) (16 slice or more) is now considered an acceptable alternative if MRI is not available

Management:

See flow chart overleaf
- Dexamethasone 8mg bd (8am and 2pm) +/- Lansoprazole 30mg daily
- Analgesia – often strong opioids +/- NSAIDS
- A telephone discussion with the on-call oncologist or neurosurgical registrar is advised once clinical and radiological assessment has been performed.
- *In general a patient presenting with the following criteria should be initially referred to Neurosurgery*
  - A solitary lesion.
  - Radioresistant tumours (eg renal)
  - Ambulant.
  - A life expectancy of > 3 months.
- *A patient with the following criteria should be initially referred to Oncology, usually for radiotherapy*
  - Multiple levels of cord compression.
  - Radiosensitive cancer(such as lymphoma,breast).
  - Preferably ambulant but definitely with an established paralysis of <72 hours).
  - Life expectancy of> 4 weeks
- *Patients with late presentation should be referred to the palliative care team*
  - Advanced signs of compression eg complete paralysis for >72 hours
  - Life expectancy of <4 weeks
  - Poor performance status PS>2 prior to paralysis
- If the Specialist Palliative Care Team (SPCT) are not already involved referral could be made to maximise the multi-disciplinary team (MDT) management of the patient, and their family. The patient may have quite complex physical needs depending on the level of compression, in addition to any psychological, social and spiritual needs.

Version 1 April 2007. Written by J Low, reviewed by members of the oncology and palliative care teams. Review date April 2009
To be read in conjunction with West of Scotland Guidelines for Malignant Spinal Cord Compression February 2007

Appendix 48

Management of Spinal Cord Compression (SCC)

GP will admit patient with suspected SCC to CAU under medical receiving team

Does the patient have signs or symptoms of SCC or Cauda Equina compression?

Prescribe Dexamethasone 8mg bd po (8am and 2pm) +/- Lansoprazole 30mg od
Assess need for analgesia and start pain chart.
Arrange **URGENT** full spine MRI scan to confirm diagnosis (if MRI unavailable consider MDCT)
Advise patient to lie flat

Confirmed spinal cord/Cauda equina compression syndrome
Does the patient have a cancer diagnosis?

No

☎Urgent –phone the oncall neurosurgical team with view to urgent transfer to Western General Hospital, Edinburgh (0131 537 1000) or Southern General Glasgow (0141 201 1100)

Yes

·One area of cord compression
·Radio-resistant cancer (eg renal)
·Ambulant
·Life expectancy >6 months?
·Physically fit for surgery

☎ Urgent – phone and discuss patient with neurosurgeon and oncologist

Dexamethasone reduction/discontinuation will be directed by neurosurgeon/oncologist

·Multiple levels of cord compression
·Radiosensitive cancer (eg breast)
·Preferably ambulant or established complete paralysis for <72 hours.
·Life expectancy > 4 weeks.

☎ Urgent transfer to Beatson West of Scotland Cancer Centre, Glasgow for emergency treatment.

Dexamethasone reduction/discontinuation will be directed by oncologist

-Establish complete paralysis for > 72 hours.
-Life expectancy < 4weeks

☎ Neurological recover unlikely.
-Refer to specialist palliative care service (if not already involved).
-Patient positioning and mobilisation will be determined by the patients pain and any neurological deterioration
-If pain is not responding to conventional analgesia- contact the oncologist for consideration of non urgent radiotherapy.

Discontinue dexamethasone within 5 days if no neurological improvement. Reduce gradually if improvement seen.

☎ Neurosurgical registrar at Western General Hospital, Edinburgh - 0131 537 1000
☎ Neurosurgical registrar at Southern General Hospital, Glasgow- 0141 201 1100
☎Clinical Oncology registrar at Beatson West of Scotland Cancer Centre- 0141 301 7000
☎Contact the patients established oncologist within working hours, ringing the consultant's secretary at the Beatson 0141 301 7000

Version 1 April 2007. Written by J Low, reviewed by members of the oncology and palliative care teams. Review date April 2009 . To be read in conjunction with West of Scotland Guidelines for Malignant Spinal Cord Compression February 2007

Appendix 49

MALIGNANT SPINAL CORD COMPRESSION GUIDELINES

Primary Care

Spinal cord compression (SCC) should be treated as a medical emergency and there should be a high index of suspicion in all patients with a diagnosis of malignancy

Early detection of initial symptoms is key as any delay in diagnosis can lead to paralysis and can adversely affect life expectancy

Definition:
- Compression of the spinal cord and nerve roots (including cauda equina nerve roots)

Cause:
- Bone metastases – usually in body of vertebra(e), often multiple levels
- Soft tissue disease eg lymphoma in spinal canal
- Most commonly affects patients with cancer of the lung, prostate, breast (account for 50% of cases) but can affect patients with all tumour types and at any time during disease

Clinical Presentation

Early Presentation	Late Presentation
Back pain – often progressing over several weeks. The patient may have an increased use of breakthrough analgesia**. Radicular pain is a particular cause for concern,** *often described as a tight band around the chest or abdomen or nerve-like pain in upper thighs***.** Radicular pain is exacerbated by activities involving the valsalva manoeuvre as well as coughing, sneezing, straining, straight leg raising and neck flexion. May worsen on lying down and relieved on sitting and is typically worse at night. There may be thoracic or anterior thigh distribution. There may be significant change in the nature of longstanding pain (unremitting, feelings of despair). **Reduced mobility -** 'off legs', falls, heavy or stiff limbs, new difficulty with 'getting up stairs'	**Sensory or motor change** – especially if bilateral eg muscle weakness, loss of coordination, paralysis, parasthesia, loss of sensation **Autonomic dysfunction** *eg Constipation/urine retention/recent catheterisation*

Unexplained 'taking to bed' or needing a catheter, even in the absence of pain should raise the possibility of spinal cord compression

MANAGEMENT

Early Presentation (see above)	Late Presentation (see above)
New/different spinal pain (particularly thoracic) **"tight band around chest"** **Nerve like pain in upper thighs** **New difficulty climbing stairs**	**Condition deteriorating daily** **Paralysis for >72 hours** **Sphincter disturbance** **Life expectancy < 4 weeks**
↓	↓
Commence 8mg Dexamethasone bd (8am & 2pm) +/- Lansoprazole 30mg od **Patient should be advised to lie flat** ↓ **Arrange admission to CAU at Stirling Royal Infirmary under medical receiving team** ↓ **Arrange for patient to be transferred to hospital via 2-man ambulance with stretcher**	**Discuss with oncology/palliative medicine team involved. Discuss immediate care options with patient and family. Patient positioning and mobilisation will be determined by patients pain and any neurological deterioration, flat bedrest is not required. Where the level and type of support is not available at home, admission to hospital or hospice may be necessary. A trial of steroids (Dexamethasone 8mg bd) may be suggested, but if no improvement identified within five days these should be discontinued.**

Further Information:
- MSCC section of Scottish Referral Guidelines for Suspected Cancer
- RCGP RED FLAGS for Possible Serious Spinal Pathology
- West of Scotland Guidelines for Malignant Spinal Cord Compression (available on the Forth Valley Intranet)

- This guideline refers to patients with an existing cancer diagnosis but bear in mind that in approximately 20% of patients with MSCC, cord compression is the first indication of them having cancer.

Version 1 April 2007 Writen by J LowReviewed by members of the Oncology and Palliative Care Team Review Date April 2009

Appendix 50

FORTH VALLEY ACUTE HOSPITALS
PRESCRIBING GUIDELINES PHARMACY DEPARTMENT
HYPOMAGNESAEMIA in ADULTS

This guideline does not cover:
Acute Deficiency States e.g. Acute arrhythmia, seizures, eclampsia/pre-eclampsia, acute asthma. Refer to current Medical Unit Prescribing Protocols.
Hypomagnesaemia may be due to drugs, diarrhoea or gastrointestinal losses of fluids, pancreatitis, alcoholism, malnutrition or an acute intracellular shift during re-feeding or metabolic acidosis
Hypomagnesaemia can also induce hypokalaemia and hypocalcaemia. Intracellular potassium cannot be retained in the presence of significant hypomagnesaemia. Serum magnesium should be in the normal range before potassium can be replaced effectively. Significant hypoalbuminaemia may falsely lower serum magnesium levels

IV Dosage and Administration:[1,2,3]

Magnesium Sulphate injection BP 50% w/v.:
Contains 20mmol Magnesium in 10ml. (2mmol/ml)
Compatible with Glucose 5% , although Normal Saline 0.9% may be used

No other drugs should be added to a magnesium infusion.
There is limited data available for y-site compatibility-contact clinical pharmacist for advice.

Caution in patients with renal impairment, and doses may need to be reduced. Contact clinical pharmacist for advice.
Contra-indicated in hepatic encephalopathy, hepatic failure and renal failure

Dose: Recent deficiency states

- **20mmol Mg IV over 6 hours.**

Can be given centrally in a minimum of 100mls of glucose 5% or peripherally in 500mls glucose 5% if this volume is appropriate. Higher concentrations may cause peripheral vein irritation. Rates greater than this will exceed the renal threshold and magnesium will be disproportionately excreted in patients with normal renal function.

Recheck level after 24 and 48 hours. Repeat as required. It takes about 36 to 48 hours for the magnesium to redistribute fully to the body tissues. A 48-hour level will give a truer result.

Dose: Long-term deficiency states

- **Give 5 days of treatment.**

Day 1 20 mmol Mg IV over 6 hours .
Day 2-5 10 mmol Mg IV over 6 hours .

Check levels daily before next infusion started to ensure the magnesium level does not exceed 2.0 mmol/L. If it does, then check levels daily before re-prescribing if necessary.

Oral magnesium replacement

Magnesium salts are not well absorbed from the gastro-intestinal tract and may cause diarrhoea, with the possibility of more magnesium being lost than was administered.

Oral magnesium may be given to prevent recurrence of magnesium deficiency, and should only be used when magnesium has been replaced and corrected by IV infusion, or in proven slow-losers of magnesium. The recommended oral daily dose is 24mmol magnesium in divided doses. Magnesium oxide and magnesium glycerophosphate are available as named-patient preparations from the pharmacy, Magnesium Oxide being the preferred choice if available as this shows greater absorbtion and fewer side effects (diarrhoea).[3,4]
For further information or to arrange supplies please page your clinical pharmacist.
Caution in patients with renal impairment due to the potential for accumulation.
Note. Oral magnesium supplementation is of little benefit if the serum level is very low. Therefore, magnesium deficiency should be corrected via the intravenous route initially.

Appendix 50

Important adverse drug reactions and side effects

- Hypermagnesaemia- cardiovascular and neuromuscular side effects are reversible with IV Calcium Gluconate 2.5-5mmol plus fluid support.
- Flushing, sweating, hypotension, mild bradycardia may occur with rapid IV administration.
- Diarrhoea with oral preparations.

Contra-indications or precautions

IV replacement	Oral replacement
• **Decrease in renal function** • **Recurrent renal stone formation** • **Severe bradycardia** • **AV block** • **Respiratory insufficiency** • **Myasthenia gravis**	• **Decrease in renal function** • **Dehydration** • **Recurrent renal stone formation**

Monitoring

- Serum magnesium levels above 2.0mmol/L can lead to symptoms of hypermagnesaemia, therefore daily monitoring of patients on IV magnesium infusions is necessary. Serum levels should be checked before next dose is given.

References

1. Applied Therapeutics: The Clinical Use of Drugs. Young L, Koda-Kimble M. 5th Edition.
2. British National Formulary. 51st Edition.
3. Oxford Handbook of Clinical Pharmacy 2007
4. St Marks Hospital Northwick Park Intestinal Failure Protocol

Other Information sources

- Summary of Product Characteristics for Magnesium Sulphate Injection BP 50% from Aurum Pharmaceuticals Ltd. March 2003
- Martindale the Extra Pharmacopoeia. 31st Edition.
- Magnesium Deficiency: Pathophysiologic and Clinical Overview. American Journal of Kidney Diseases. Saeed M, et al. Vol 24, Nov 1994.
- Clinical Pharmacy and Therapeutics. Herfindal, Hart, and Gourley. 5th Edition.
- The Role of Magnesium in Clinical Biochemistry: An Overview. Ann Clin Biochem. Ryan M. Vol 28, 1991.
- Magnesium and Phosphorus. The Lancet. Weisinger J, Bellorin-Font E. Vol 352, August 1, 1998.

Pharmacist Lead: Karen Macdonald

Appendix 51

FORTH VALLEY ACUTE HOSPITALS

PRESCRIBING GUIDELINES PHARMACY DEPARTMENT

HYPOPHOSPHATAEMIA in ADULTS

Risk factors for hypophosphataemia include critical illness, a period of starvation prior to nutritional support, malnutrition, alcoholism, and respiratory alkalosis.

Phosphate supplementation should be considered where there is evidence of phosphate deficiency. Serum phosphate does not always correlate to total body stores as most phosphate is stored intracellularly. The onset and severity of symptoms will determine the need for and type of treatment

Drug Presentation:

Addiphos® 20ml vial containing : phosphate 40 mmol (2mmol phosphate /ml)
potassium 30 mmol
and sodium 30 mmol

No other drugs should be added to a phosphate infusion.

No other drugs should be co administered at a Y site with phosphate.

Caution should be used if the patient has renal impairment.

Mild to moderate deficiency : usually associated with levels of 0.3-0.6mmol/l and is usually asymptomatic

Severe deficiency: usually associated with levels less than 0.3mmol/l, especially if symptomatic.

Drugs and Administration

INTRAVENOUS:
In acute deficiency, or when a clinical difference to serum phosphate needs to be assured quickly.

- 20mmols phosphate (10mls Addiphos) over 6 hours in 100mls 0.9% N Saline through a central line, or 20mmols phosphate (10mls Addiphos) in 500mls 0.9% N Saline over 12 hours through a peripheral line.
- In cases where the hypophosphataemia is symptomatic, or if prolonged phosphate wastage has occurred, then the dosage may be repeated within 12 hours and a level obtained several hours after the end of the infusion

Oral – see notes on diarrhoea before contemplating oral replacement

- 1-2 Phosphate Sandoz ® tablets (see BNF) three times a day (provides 48 - 96mmol phosphate, 60-120mmol sodium and 9-18mmol potassium per day)
- Continued therapy may be required depending on clinical response/adverse effects.
- Oral phosphate is slow to effect and should be used in slow-losers of phosphate only, and not when a rapid response is required.

Appendix 51

Important side effects[2]

Hyperphosphataemia	Symptoms may be those of resultant hypocalcaemia namely, muscle cramps, tetany and convulsion and metastatic calcification.
Hyperkalaemia and Hypernatraemia	As a result of infusion of these elements along with phosphate
Hyperphosphataemia Hypotension Hypocalcaemia	High dose rapid infusions of phosphate. Excessive doses of phosphates may cause hypocalcaemia and metastatic calcification; it is **essential** to monitor closely plasma concentrations of calcium, phosphate, potassium and other electrolytes. Treatment of adverse effects involves withdrawal of phosphate infusion, general supportive measures and correction of serum electrolyte concentrations, especially calcium.
Diarrhoea with oral therapy	Oral phosphate is poorly absorbed from the gut and may cause diarrhoea, with the potential to exacerbate losses of Magnesium, Sodium, Potassium and water. .

Precautions

In renal impairment, Addisons disease and where restricted sodium or potassium intake is required e.g.. cardiac failure, hypertension, hyperkalaemia, severe oedema. Care should be taken when replacing phosphate to minimise electrolyte disturbances and the biochemist should be contacted for advice.

Monitoring

Blood pressure monitoring is advised
Calcium, magnesium, phosphate, potassium and other electrolyte monitoring is essential. Phosphate levels should be checked at least 6 hours after the end of the infusion[3]

Acknowledgements

Jane Sillars Senior Dietitian
Mark Holliday Consultant Biochemist

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3. Bugg NC, Jones A Hypophosphataemia. Anaesthesia 1998;53:895-902

Appendix 52

Forth Valley Wound Management Formulary Summary 2008

To access the complete on-line version click – Wound Management Formulary 2008

Dressing type	Brand	Sizes available on formulary	Additional sizes available only for nurse prescribers in the community
Low Adherent Dressing	Tricotex	9.5 x 9.5cm	
	Atrauman	5 cm x 5 cm 7.5 cm x 10 cm 10 cm x 20 cm	
	Mepore	6 x 7cm 9 x 20cm 9 x 25cm	7 x 8 cm 9 x 10 cm 9 x 15 cm 9 x 30 cm 9 x 35 cm 10 x 11 cm 11 x 15 cm
Hydrocolloid Dressing	Granuflex	Square 10 x 10	
	Granuflex bordered ***Please note size includes 2 cm Border***	Square 10 x 10 15 x 15 Triangular 10 x 13 15 x 18	6 x 6 cm
	Duoderm extra thin	10 x 10cm	5 x 10 cm 7.5 x 7.5 cm
Hydrofibre Dressing	Aquacel	5cm x 5cm 10cm x 10cm 2cm x 45cm (ribbon	
Hydrogel	Intrasite Gel	8g size	
Alginate Dressing	Kaltostat	5 x 5 cm 7. 5 x 12cm 10cm x 20cm 15 x 25cm 2 G cavity dressing	
Foam Dressings	Lyofoam Extra non-adhesive	10x10cm 10 x 25	
	Lyofoam Extra Adhesive	Size includes 2-3cm adhesive border 15 x 15cm 22 x 22cm	
	Sacral	15 x 13cm 22 x 26cm	

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Dressing type	Brand	Sizes available on Formulary	Additional sizes available only for nurse prescribers in the community
Foam Dressings	Tielle	Size includes 2cm border 11x11cm 15 x 15cm 18 x 18cm Sacral dressing 18 x 18cm	
Charcoal Dressing	Actisorb Silver	10.5cm x 10.5cm	
Paraffin Gauze Dressing	Unitulle	10 x 10 cm	
Antiseptic Impregnated Dressing	Inadine	5 x 5 cm 9.5 x 9.5 cm	
Paste Bandages	Viscopaste	10 % zinc oxide	
	Steripaste	15% zinc oxide. Has a unique, preservative free formulation	
	Zipzoc	Sterile rayon stocking with 20% zinc oxide	
Semi-permeable adhesive film dressing	Tegaderm	10cm	
Surgical Tapes	Permeable non-woven synthetic adhesive e.g.		
	Premier	1.25 cm	Inexpensive tape.
	Micropore	2.5 cm	Use for securing all lightweight
	Leukopore	7.5 cm	dressings and bandages
	Zinc Oxide e.g. Strappal	1.25 cm	Available only to casualty, for specific use
	Non-woven synthetic 5cm		Useful in securing more specialised dressings, chest drains and in Podiatry
	polyester fabric adhesive tape e.g. Mefix	10 cm 15 cm 25 cm	
	Elastic adhesive tape 5cm e.g. Elastoplast	10cm	Mainly used as pressure dressing & corrective strapping in OPD and orthopaedics
	Transpore	1.25cm	Securing venflons, available only to paediatrics

Pharmacist Lead : Eileen Peebles

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