PrescQIPP Community Interest Company

IMPACT - Improving Medicines and Polypharmacy Appropriateness Clinical Tool

The NHS spends £8.8 billion on medicines in primary care per year and dispenses over 960 million prescription items.[1,2] It is estimated that medicines worth over £300 million are wasted each year, of which at least half is avoidable. The cost to the NHS of people not taking their medicines properly and not getting the full benefits to their health is estimated at over £500 million a year.[3-5] In 2010, the World Health Organisation stated that more than 50% of all medicines are prescribed, dispensed or sold inappropriately, and half of all patients fail to take medicines correctly.[5]

Prescribers should consider:

- Strategies for appropriate, safe and judicious prescribing,
- Prescribing principles to ensure medicines are used optimally.

These include use of non drug therapies; being cautious about unproven drug use or new drugs; remaining vigilant to adverse effects of medicines and educating patients about these and the monitoring required, so therapy is not stopped unnecessarily; obtaining unbiased information before making a decision on whether to prescribe or not; sharing decisions with patients around adherence and starting or stopping medicines.[6-8]

When speaking to patients about their medicines, health-care professionals should review whether therapy is appropriate and still being taken. Pharmacy based medicines use reviews are adherence-centred reviews with patients on multiple medicines, particularly those receiving medicines for long-term conditions. Clinical medication reviews are a critical examination of a patient's medicines with the objective of reaching an agreement with the patient about treatment, optimising the impact of medicines, minimising the number of medication-related problems and reducing waste.[9]

The National Institute for Health & Care Excellence (NICE) clinical guideline on medicines optimisation (MO) and Kings Fund report about MO highlight that polypharmacy may be either appropriate or inappropriate. Inappropriate polypharmacy should be reviewed to optimise medicines use.[1,10] There are many examples of tools to do this: PrescQIPP Polypharmacy & Deprescribing webkit,[11] NO TEARS,[12] STOPP-START,[13] NHS Scotland 7 Steps,[14] Australian 10-step discontinuation guide[15] and NHS Specialist Pharmacy Service – 7 steps to managing polypharmacy.[16] Some medicines may need to be stopped. This should be done in an evidence based manner.[1,10,15] Medicines may be considered for stopping if:

- There is no valid or relevant indication for prescribing as assessed by changes in symptoms, signs, laboratory and diagnostic test results.[15,17]
- The known possible adverse drug reactions outweigh the possible benefits. [15,17]
- There is a risk of cumulative toxicity if particular medicines are taken together. [15,18]
- The patient is choosing to not take/use the medication as prescribed or intended. [15,19]
- Unlicensed medicines ('specials') are being prescribed when an alternative licensed medicine or formulation will provide the same therapeutic benefit.[20]
- Non-drug measures can provide benefit, without adverse effects.[15]
- The patient is nearing end of life.[14]

If a medicine is no longer considered appropriate and is to stop, the prescriber and patient should discuss and agree a decision. Good communication is essential for successful withdrawal of therapy that is no longer suitable.[21,22]

This bulletin provides suggestions for consideration to optimise medicines use, and practical advice (where it is available) about how to stop/discontinue/withdraw a medicine. This information should be used as a practical decision aid, in conjunction with other relevant, patient specific data.

Continue therapy where it is appropriate. Where there is a significant cost or clinical risk these are highlighted as areas to focus on.

The clinical risk classifies the risk of continuing therapy based on maintenance doses. The cost risk identifies areas where total spend in primary care is high (high volume of low cost medicines or low volume of high cost medicines).

This information should be used as a practical decision aid, in conjunction with other relevant, patient specific data.

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A rating for clinical risk has not been added to all drugs as this is based on clinical judgement.

Contents

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 1 - Gastrointestinal system	Antispasmodics	How long have they been prescribed? Avoid long term use, highly anticholinergic preparations, uncertain effectiveness.[23] Anticholinergics are commonly associated with adverse effects if discontinued suddenly and require slow withdrawal.[15]		
	H2 blockers/PPIs	Is an NSAID still being taken?[17] There has been no proven peptic ulcer, GI bleeding or dyspepsia for 1 year. Continued use may contribute to C difficile infection.[24] For patients experiencing persistent symptoms, step down the PPI dose to stop, otherwise PPIs can be stopped abruptly.[25]	**Amber** **PPI: Red**	**PPI: Red**
	Laxatives	Previous use of opioid analgesics has reduced or stopped. Regular bowel movements occur without difficulty. Patient is eating and drinking and has an adequate fluid intake. If >1 laxatives are used, reduce and stop one at a time slowly. Do not stop treatment abruptly. Reduce stimulant laxative first, increase the dose of the osmotic laxative if necessary. Restart laxatives if relapse occurs.[26]	**Amber**	**Amber**
	Infantile colic products	Colief is not considered to be a medicinal product suitable for prescribing on the NHS unless the criteria set out by the Advisory Committee on Borderline Substances (ACBS) are met. Infacol is denoted in the BNF as being less suitable for prescribing on the NHS. Evidence does not support use. Gripe water is not licenced for the treatment of infantile colic and should not be used.[27]		

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 2 - Cardiovascular system	Spironolactone	If dose >25mg/day or creatinine clearance <30ml/min, there is an increased risk of hyperkalaemia, especially if taking an NSAID, ACE inhibitor, angiotensin II receptor blocker or potassium supplement.[13,14,23]		
	Antiarrhythmics (amiodarone)	Rate control has better balance of benefits and harms than rhythm control for most older adults. Amiodarone is associated with multiple toxicities (thyroid, pulmonary, QT prolongation). Amiodarone is no longer recommended by NICE.[23,27] Check all monitoring is being done.	Amber	Amber
	Nitrates	The patient has not had chest pain for six months.[17] The patient has reduced mobility.[28] Antianginal medications are commonly associated with adverse effects if discontinued suddenly and require slow withdrawal.[15]		
	Omega 3 fatty acid supplements	Not recommended by NICE for a variety of conditions – MI secondary prevention, sleep problems in autism, primary prevention of cardiovascular disease in type 2 diabetes, preventing hypertensive disorders in pregnancy or treating familial hypercholesterolaemia.[27]		Amber

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 2 - Cardiovascular system	Antihypertensives • ACE inhibitors • Alpha 1 blockers • Alpha agonists • Angiotensin II receptor blockers • Beta blockers • Calcium channel blockers • Diuretics	Is the BP at a normal level or too low?[29] Do the known possible adverse drug reactions outweigh the possible benefits, e.g. orthostatic hypotension, CNS effects, risk of falls; loop diuretic for ankle oedema – would compression hosiery be more appropriate?[23,29] Thiazide diuretic with significant hypokalaemia; ACE inhibitor or A2RB with hyperkalaemia; loop diuretic for hypertension with concurrent urinary incontinence may exacerbate incontinence.[13] There is no good evidence of benefit with doxazosin MR over immediate release doxazosin. There is no benefit of perindopril arginine over generic perindopril erbumine. Insufficient evidence of effectiveness of aliskiren to recommend use.[27] If more than one antihypertensives are used, stop one at a time, maintaining the dose of the others without change. Restart antihypertensives if BP increases above 90 mm Hg diastolic and/or 150mm Hg systolic (160mm Hg if no organ damage).[17] Withdraw alpha agonists gradually to avoid severe rebound hypertension. ACE inhibitors, beta blockers and diuretics are commonly associated with adverse effects if discontinued suddenly and require slow withdrawal.[15]		ARB & CCB: Red ACEI & BB: Amber
	Statins Lipid lowering drugs	Re-evaluate the patients risk profile for primary and secondary prevention of cardiovascular disease.[30] Consider need for and intensity of treatment with respect to life expectancy and ADR risk.[14] Stop in metastatic disease[31-33] or other contraindications as per the SPCs, e.g. liver disease.		Red
	Aspirin	Re-evaluate the patient's risk profile for primary prevention.[13] Do the known possible adverse drug reactions outweigh the possible benefits?[17] Is a dose of >150mg/day being used for a cardiovascular indication?[29] Length of concomitant use with clopidogrel for maximum of 12 months post ACS.[14] Is aspirin being used for dizziness that is not clearly attributable to cerebrovascular disease?[13]	Amber	

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 2 continued	Anticoagulants – oral and injected	Are LMWHs/oral anticoagulants prescribed following hip/knee replacement surgery still required?[35] Does patient have concurrent significant bleeding risk?[13] Stop warfarin if the risk of falls outweighs the benefits.[28] Long term warfarin use (>6 months) is not recommended when the VTE was provoked by surgery, non surgical trigger factors or the VTE occurred in the calf only.[13,36] If patient can't take warfarin for cognitive reasons, NOACs may not be indicated either.[14]	Amber	
	Peripheral vasodilators	Clinical effectiveness often not established.[14,35] Do the known possible adverse drug reactions outweigh the possible benefits?[17] Rarely indicated for long term use.[14]		
	Digoxin	Do the known possible adverse drug reactions outweigh the possible benefits?[17] For example, if there is an increase in toxicity, or a decreased oral fluid intake.[28] Long term digoxin at >125mcg/day in patients with impaired renal function can lead to an increased risk of toxicity.[13] Digoxin is commonly associated with adverse effects if stopped suddenly. Slow weaning required.[15]	Amber	

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 3 - Respiratory system	Theophylline	Monotherapy in COPD is not appropriate - safer, more effective alternatives are available.[13]		
	Cough and cold remedies	Treatments with limited clinical value/evidence, purchase cough mixtures, decongestants, inhalations, lozenges over the counter (OTC).[27]		Amber
	Oral corticosteroids	Prednisolone maintenance in COPD is not usually recommended.[37,38] The magnitude and speed of dose reduction and withdrawal should be determined on a case by case basis. Gradual withdrawal should be considered for those who have received more than three weeks treatment, those who have received more than 40mg prednisolone daily (or equivalent) or have other possible causes of adrenal suppression.[13,15,35]	Amber	Amber
	Inhaled corticosteroids	In asthma – review every three months, has control been achieved? If yes: reduce dose slowly (by 50% every three months).[35] In COPD – if an inhaled corticosteroid is not appropriate, a long acting antimuscarinic bronchodilator can be used with a long acting beta2 agonist.[37] Corticosteroids are commonly associated with adverse effects if discontinued suddenly and require slow reduction.[15]	Amber	Red
	Antihistamines	First generation are highly anticholinergic, clearance is reduced with advanced age, tolerance develops when used as a hypnotic, greater risk of confusion, dry mouth, constipation.[23] Hayfever symptoms should be self-treated.[27]		Red

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 4 - Central Nervous system	Chloral hydrate	No convincing evidence that useful; avoid use/prolonged use, do not withdraw abruptly.[35]	Amber	
	Meprobamate	High rate of physical dependence, very sedating, avoid use, avoid prolonged use, abrupt withdrawal may precipitate convulsions.[23] EMA recommended the suspension of marketing authorisations in Jan 2012 as the risks of serious CNS side effects outweigh the benefits.[35]	Amber	
	Barbiturates	Intermediate acting preparations should only be used in severe intractable insomnia, avoid use in the elderly.[35] High rate of physical dependence, tolerance to sleep benefits, risk of overdose at low doses.[23]	Amber	
	Benzodiazepines (including 'Z' drugs)	Is use required if physical and psychological health and personal circumstances are stable? If the patient is willing, committed and compliant, and has adequate social support, withdrawal possible in primary care.[39] If taken for > 2 weeks, withdrawal should be gradual to avoid confusion, toxic psychosis and convulsions.[13,34] With long term use, risk of adverse effects including falls, exceeds therapeutic benefit of continued use.[13,15,35,40] Drug withdrawal may take three months to a year or longer.[14] Switch to diazepam to aid withdrawal if necessary. Useful practical info in BNF, CKS & Scottish Polypharmacy document.[14,35,39]	Amber	
	Antiepileptic drugs	Assess effectiveness/dose if used for pain management.[14] Reduce dose of gabapentin and pregabalin if creatinine clearance <60ml/min.[23]		

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 4 - Central Nervous system continued	Drugs for dementia	If MMSE <10, medicines may be continued if they help with behaviour.[28] NICE recommends memantine if MMSE<10. Review benefit, use should only continue if the MMSE score is ≥10 and treatment has an effect on the global, functional or behavioural symptoms.[41]		Amber
	Levodopa – carbidopa	Do the known possible adverse drug reactions outweigh the possible benefits?[17] No evidence of efficacy for benign essential tremor.[13] Antiparkinsonian agents are commonly associated with adverse effects if discontinued suddenly and require slow withdrawal.[15]		Amber
	Antidepressants • Selective serotonin reuptake inhibitors (SSRIs) • Tricyclic antidepressants (TCADs) • Others: MAOIs, agomelatine, duloxetine, reboxetine, venlafaxine, mirtazapine	For a single episode of depression treat for 6-9 months; for multiple episodes, treat for at least two years, no upper duration of treatment has been identified.[42] Dosulepin should not be prescribed.[35] Do the known possible adverse drug reactions outweigh the possible benefits? e.g. TCADs can worsen dementia, glaucoma, constipation, urinary retention; SSRIs may induce clinically significant hyponatraemia.[13,17] Are TCADs being taken with other medicines that have anticholinergic activity and can increase risk of cognitive impairment e.g. chlorpromazine, oxybutynin, chlorphenamine?[18] Reduce dose of antidepressants gradually to avoid withdrawal effects.[15,35] Speed of withdrawal is dependent on length of treatment: <4 weeks therapy, reduce over 1-2 weeks; >8 weeks reduce over 4 weeks; long term maintenance therapy, reduce over 6 months. Exception is fluoxetine (long half-life), a 20mg dose can be stopped immediately.[43]	Amber	SSRI: Red Others: Amber

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 4 - Central Nervous system continued	Antipsychotics	Do the known possible adverse drug reactions outweigh the possible benefits?[17] In dementia patients with behavioural and psychological symptoms, review and discontinue, particularly if there has been no response and symptoms are mild, unless there is extreme risk or distress for the patient.[44,45] Standardized symptom evaluations and drug cessation attempts should be undertaken at regular intervals. [46,47] Are chlorpromazine or trifluoperazine being taken with other medicines that have anticholinergic activity and increase risk of cognitive impairment, e.g. TCADs, oxybutynin, chlorphenamine?[18] Withdrawal after long term therapy (1-2 yrs) should be gradual (start with 10-25% dose reduction), review wkly, then mthly, closely monitor for two years after drug withdrawal to avoid relapse.[15,35] Practical information in the Scottish Polypharmacy document.[14]	**Amber**	**Red**
	Metoclopramide	How long has it been prescribed? Can cause extrapyramidal effects including tardive dyskinesia, risk greater in older adults with frailty.[23]		
	Analgesics	Purchase short courses of analgesics OTC.[27]		**Red**
	Opioid analgesics	Is a regular opioid still needed? The risk of falls/constipation can outweigh the benefits. Consider non-drug options, switch to regular paracetamol.[19] Review laxatives. Opioids are commonly associated with adverse effects if discontinued suddenly, slow weaning required.[15,48] Potential safety problems with fentanyl immediate release formulations which provide relatively high doses of a potent opioid and have complicated titration/maintenance instructions. Oxycodone/naloxone combination not cost effective. Co-proxamol withdrawn from market in 2005 due to safety concerns. Tramadol/ paracetamol combination not more effective than established analgesics.[27]	**Red**	**Red**

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 5 – Infections	Antibacterials	Inappropriate uses – bacterial infection has resolved; a viral infection has been diagnosed; prophylactic treatment prescribed but no pathogen isolated.[34] Minocycline not first line tetracycline for acne.[27] Treatment of asymptomatic bacteriuria (ASB) in older patients and diabetes patients has no beneficial effects.[49] There is a lack of evidence to evaluate the effect of preventing catheter associated-ASB with antibiotics.[50] Is fluid intake adequate? Nitrofurantoin has potential for pulmonary toxicity, lack of efficacy in patients with CrCl <30ml/min due to inadequate drug concentration in the urine; avoid long term use.[23]	Amber	Red
	Antifungals	If treatment is indicated, systemic treatments are more effective than antifungal nail paints.[27] Skin scrapings should be taken if systemic therapy is being considered or if there is doubt about the diagnosis. When a course of treatment of appropriate length has been finished, do not continue indefinitely, e.g. oral and topical nystatin.[35] For finger and toe nail infections, cure is achieved in only a minority of patients, the relapse rate is high.[51]		Amber

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 6 - Endocrine system	Oestrogens ± progestogens	No mandatory limitation on the duration of HRT. Whether or not to continue therapy is dependent on an objective estimation of ongoing benefits and risks.[52] Evidence of carcinogenic potential in breast and endometrium, lack of cardioprotective effect and cognitive protection in older women. Topical low dose oestrogen intravaginal cream safe and effective for dyspareunia and other vaginal symptoms.[23]	Amber	
	Bisphosphonates	Has treatment been taken for five years or more?[53] Decision needed on an individual basis - for patients who are not at high risk or those whose femoral neck T score is greater than −2.5, it is reasonable to discontinue bisphosphonates after 3-5 yrs.[54] Women at high fracture risk may benefit from continued use.[14] Do the known possible adverse drug reactions outweigh the possible benefits?[17] If the patient is at low risk of falls, are these still needed?[13] Risk factors for low BMD include prolonged immobility, rheumatoid arthritis, BMI <22kg/m^2.[14,55]		Amber
	Liothyronine	No robust evidence on the use of liothyronine either alone or in combination with levothyroxine, it is not licensed for long-term use. Not recommended in any presently available formulation for primary hypothyroidism, it is inconsistent with normal physiology, and has not been unequivocally proven to be of any benefit to patients, and may be harmful.[27]	Amber	Red

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 7 - Obstetrics, gynaecology & urinary tract disorders	Alpha blockers	Use is generally not indicated if a patient has a long term (>2 months) catheter in situ.[13] Alpha blockers are commonly associated with adverse effects if discontinued suddenly and require slow withdrawal.[15]		
	Tadalafil	The once daily preparation is not recommended as it is not cost-effective in most patients. 'On demand' tablets taken when required are the preferred option.[27]		Red
	Antimuscarinics (for bladder/urinary tract symptoms)	Review effectiveness every 4–6 weeks until symptoms stabilise, and then every 6–12 months.[35] Do the known possible adverse drug reactions outweigh the possible benefits?[17] For example. postural hypotension, urinary retention, constipation. Check if continence pads are also used, is concomitant use necessary?[56] Oxybutynin will decrease MMSE score in patients with dementia.[13,28] Are antimuscarinics being taken with other medicines that have anticholinergic activity and can increase risk of cognitive impairment, e.g. chlorpromazine, TCADs, chlorphenamine?[18] Anticholinergics are commonly associated with adverse effects if discontinued suddenly and require slow withdrawal.[15]		Amber
	Finasteride	Not indicated if patient has a long term catheter. Discuss stopping with urology specialist.[14]		

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 8 - Malignant disease & immunosuppression	Cytotoxics, immunosuppressants	What outcome is expected, do the known possible adverse drug reactions outweigh the possible benefits?[17] Refer to doctor who initiated treatment.	Amber	Red
BNF Chapter 9 - Nutrition & blood	Sodium, potassium and iron supplements	Do the known possible adverse drug reactions outweigh the possible benefits?[17] No evidence of enhanced iron absorption at elemental iron doses >200mg daily[13] or with vitamin C.		
	Vitamins	Does the patient have a disorder which requires vitamin and mineral supplements?[17,35] Dietary supplements/'pick me ups' should be purchased as self care.[27]		Amber
	Lutein and antioxidant vitamins	Evidence base does not show that lutein and other eye vitamins are beneficial. If required, they should be purchased as self care.[27]		Amber
	Calcium + vitamin D	Does the patient have adequate levels through diet/sunlight exposure?If the patient is not mobile, is this still needed?[19]		
	Sip feeds	Has a dietician recently reviewed the patient; is the patient able to prepare, or have someone else prepare fortified food and therefore does not need sip feeds? Does the patient have limited mobility and is using sip feeds instead of a normal diet?[19]		Red

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 10 - Musculoskeletal & joint diseases	NSAIDs	Is an NSAID still needed/appropriate? E.g. long term treatment of gout but no prophylaxis is prescribed.[13] Do the known possible adverse drug reactions outweigh the possible benefits, e.g. >3 months use for symptom relief in mild osteoarthritis, use in patients with severe hypertension/heart failure/chronic renal failure.[13,17] Has PPI prophylaxis been prescribed if also taking concurrent antiplatelet/ anticoagulant treatment?[13] If topical NSAIDs are continued indefinitely, review the need for use; short courses are generally advised for piroxicam, felbinac, diclofenac and ketoprofen.[35] NSAIDs are commonly associated with adverse effects if discontinued suddenly and require slow withdrawal.[15]	Amber	Amber
	Glucosamine	Not recommended by NICE for treatment of OA. Purchase OTC if required.[27]		Amber
	Rubefacients	The evidence available does not support the use of topical rubefacients in acute or chronic musculoskeletal pain. Rubefacients should not be offered to treat osteoarthritis. Stop any prescribing of rubefacients. NICE states that capsaicin patches should not be used for neuropathic pain in non-specialist settings, unless advised by a specialist.[27]		Red
	DMARDs	Discontinue penicillamine if there is no improvement within one year. Consider withdrawal of azathioprine for autoimmune conditions and ciclosporin for nephrotic syndrome if there is no improvement within three months of use.[35] Refer to doctor who initiated treatment.	Amber	

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 10 - Musculoskeletal & joint diseases	Quinine	Not recommended for routine treatment because of potential toxicity. Should not be used unless cramps are very painful or frequent; when other treatable causes have been excluded; when non-pharmacological treatments have not worked (e.g. passive stretching exercises) and there is regular disruption to sleep. Interrupt treatment at intervals of approximately three months to assess the need to continue.In patients taking quinine long term, a trial discontinuation may be tried.[35]		
	Skeletal muscle relaxants	Often poorly tolerated because of anticholinergic adverse effects, sedation, risk of fracture, avoid use.[23] Baclofen is commonly associated with adverse effects if discontinued suddenly and requires slow withdrawal.[15]	Amber	
	Cannabis sativa	Do not use to treat neuropathic pain in non-specialist settings, unless advised by a specialist. For multiple sclerosis, the cost effectiveness evidence does not support its use.[7]		
	Cytokine inhibitors	Psoriatic arthritis/Ankylosing spondylitis - discontinue adalimumab, certolizumab and golimumab if there is inadequate response after 12 weeks (infliximab six weeks).[35] Rheumatoid arthritis/juvenile idiopathic arthritis – withdraw certolizumab, golimumab and infliximab if response is not adequate within 12 weeks (adalimumab six months).[35] Systemic lupus erythematosus – review belimumab treatment if no response within six months.[35] Crohn's disease – review treatment if no therapeutic response occurs with vedolizumab within 14 weeks; adalimumab within 12 weeks.[35] Ulcerative colitis - review treatment if no therapeutic response occurs with vedolizumab within ten weeks; adalimumab within eight weeks; golimumab within six weeks; infliximab within 14 weeks.[35] Refer to specialist.	Red	Red

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
BNF Chapter 11 - Eye	Eye drops/ointments	Review need for preservative free eye drops - is there a valid indication for prescribing (e.g. previous preservative toxicity), if eye drops instilled less than four times a day, preservative free may not be necessary.[57,58] Have antibiotic preparations been continued without a review or stop date?[35]		
BNF Chapter 12 - Ear, nose & oropharynx	Drops, sprays, solutions etc.	Is the medicine still required? Have antibiotic/steroid/sympathomimetic preparations been continued without review or a stop date?[35] Nasal sprays for the symptomatic relief of hayfever and congestion should be purchased OTC as part of self care.[27]		
BNF Chapter 13 – Skin	Creams, ointments	Has the condition resolved and may continued use cause adverse effects or exacerbate the condition, e.g. preparations containing antibacterials or corticosteroids? Mupirocin, neomycin and retapamulin are for short term use only.[35] Is the patient using sufficient emollient to avoid use of steroids or development of ulcers?[19]	Amber	
	Eflornithine	No evidence of its efficacy in comparison to existing treatments. It needs to be used indefinitely but the long term benefits and safety have not been established (past 24 weeks).[27]		Amber
BNF Chapter 15 - Anaesthesia	Lidocaine plasters	NICE CG173 on neuropathic pain does not recommend the use of lidocaine patches as a treatment option due to limited clinical evidence supporting their use.[27]		Red

BNF class	Drug	Considerations to optimise medicines use after checking for a valid indication	Clinical risk	Cost risk
Appendix 2 – Borderline substances	Probiotics	VSL#3 can only be prescribed for the maintenance of remission of ileoanal pouchitis only in adults as induced by antibiotics. Other probiotics are food supplements, should be purchased OTC.[27]		
Appendix 4 – Wound management products and elasticated garments	Dressings	Wounds should be reviewed before prescribing to ensure correct dressing chosen. Chronic wounds change/reduce in size over time – refer difficult to treat wounds to a tissue viability nurse. Address underlying problems, e.g. soiling from incontinence, wrong choice of dressing etc. Larger dressings are more expensive than the smaller sizes. Query large size dressings on repeat prescriptions. Query quantities over 10 units per month, most dressings can stay in place for 3-5 days except on infected wounds, although some patients may have multiple wound sites. Avoid waste - prescribe the actual number of dressings needed rather than "1OP".[59]		Amber
Miscellaneous	Complementary therapies Herbal supplements Homeopathy	There is a limited evidence base and a lack of robust randomised controlled trials directly comparing them with standard treatments. Some are also associated with severe adverse effects, they may significantly interact with other medicines and can delay accurate diagnosis of underlying pathology. NICE have reviewed several complimentary, herbal or homeopathic remedies reviewed and have not recommended their use.[27]		Amber

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Non-subscriber publication 2016.

Published September 2011, updated June 2013, December 2015. Minor amend March 2017.

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At the time of publication the PrescQIPP NHS Programme was hosted by Papworth NHS Trust and the Eastern Academic Health Science Network.

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This document represents the view of PrescQIPP CIC at the time of publication, which was arrived at after careful consideration of the referenced evidence, and in accordance with PrescQIPP's quality assurance framework.

The use and application of this guidance does not override the individual responsibility of health and social care professionals to make decisions appropriate to local need and the circumstances of individual patients (in consultation with the patient and/or guardian or carer). Terms and conditions

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