NHS

Northern, Eastern and Western Devon
Clinical Commissioning Group

STOPP START Toolkit
Supporting
Medication Review

STOPP:

Screening Tool of Older People's potentially inappropriate Prescriptions.

START:

Screening Tool to Alert doctors to Right i.e. appropriate, indicated Treatments[1].

STOPP: Screening Tool of Older People's potentially inappropriate Prescriptions[1].

Prescriptions that are potentially inappropriate in persons aged ≥ 65 years of age

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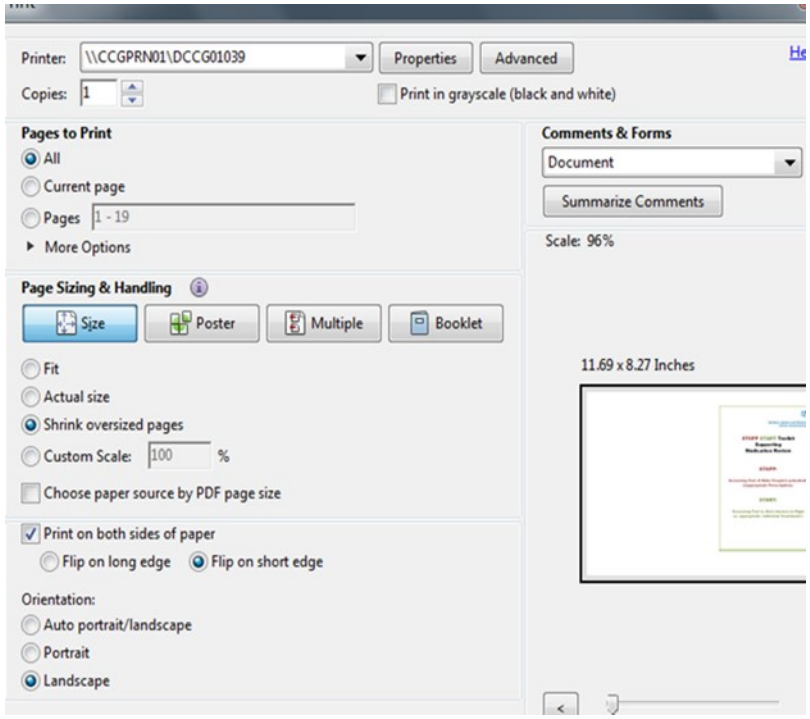

Every effort has been made to ensure the information in this document is current and correct at the time of publication, however errors may have occurred and data for individual drugs, national or local guidance may have changed. Where there is any doubt, information should be checked against manufacturers' recommendations, published literature or other specialist sources.

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START: Screening Tool to Alert doctors to Right i.e. appropriate, indicated Treatments[1].

Medication that should be considered for people ≥ 65 years of age where no contraindication exists

An evidence based approach to prescribing for elderly people

Introduction

A definition of medication review is “a structured, 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”[2].

It is commonly agreed that older people are at greater risk of adverse effects from their medicines due to age related changes in their major organs which in turn alter pharmacokinetics and pharmacodynamics. They also often have multiple co-morbidities leading to drug-drug interactions or cautions and contraindications to preferred treatments.

These patients however are often excluded from drug trials making it difficult for the clinician to weigh up the benefits versus risks, let alone explain them to the patient. Furthermore, although with increasing age a patient can move from benefiting from a treatment to being at significant risk from it, there can be difficulty in stopping medication for the fear of being accused of ageism.

The NHS Scotland document on Polypharmacy[3] provides a useful overview of conducting a medication review, including the 7 steps process and ‘number needed to treat’ (NNT) which this document can support.

This document is based on the STOPP START (version 2) Tool[1] a medication review tool designed to identify medication where the risks outweigh the benefits in the elderly and vice versa. Eighteen experts in geriatric pharmacotherapy initially contributed to suggesting and then rating the criteria. The STOPP criteria were evaluated (along with Beer’s criteria[4]) against hospital

10. Boustani M et al. Impact of anticholinergics on the aging brain; a re-view and practical application. Aging health. 2008; 4:3; 311-20

11. SIGN Guideline 95 Heart failure, annex 5

12. MHRA Drug Safety Updates and alerts available at www.mhra.gov.uk

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2. Task Force on Medicines Partnership. Room for Review. A guide to medication review: the agenda for patients, practitioners an managers. Medicines Partnership. London. 2002

3. Scottish Government Model of Care Polypharmacy Working Group. Polypharmacy Guidance (2nd edition). March 2015. Scottish Government

4. Beers MH. Explicit Criteria for Determining Potentially Inappropriate Medication Use by Elderly. An Update. Arch Intern Med. 1997;157:1531-1536

5. NICE Guidance available from: **www.nice.org.uk/guidance/index.jsp**

6. British National Formulary available from: https://www.medicinescomplete.com

7. Guthrie et al. High risk prescribing in primary care patients particularly vulnerable to adverse drug events: cross sectional population database analysis in Scottish general practice. BMJ 2011; 342;d3514

8. Pirmohamed M et al. Adverse drug reactions as cause of admission to hospital: prospective analysis of 18,820 patients. BMJ 2004; 329; 15-17

9. Howard R et al. Which drugs cause preventable admissions to hospital? A systematic review. Br J Clin Pharmacol 2006; 63:2; 136-147

admissions — one third of the patients with "potentially inappropriate prescriptions" according to STOPP criteria presented with an associated adverse drug event.

All recommendations from the STOPP START Tool are included here; except where recommendations have been superseded by the National Institute for Health and Care Excellence (NICE)[5]. Where space allows, local and national guidance (in blue-edged boxes) is included. These can only be considered correct at time of publication.

The tool was validated in patients aged 65 and over but there is still a place for clinical judgement in deciding whether a person is "elderly" in terms of the potential effects of medication.

The recommendations are grouped according to the main British National Formulary chapters[6] with the STOPP items coloured red and the START items coloured green.

As well as using the list of drugs here to decide which might need to be stopped in the frail elderly it should also be considered if the drug gives daily symptomatic benefit, prevents rapid worsening of symptoms or replaces a hormone vital for normal function e.g. levothyroxine. If so it should normally be continued.

A study of prescribing in general practice in Scotland[7] used a panel of GPs and pharmacists to develop "prescribing safety indicators" (PSI) to judge the prescribing against. These were mostly either high risk drug combinations (drug interactions) or drug-disease combinations (contraindications). The indicators not already covered by STOPP are given in the blue supporting information boxes however it is the clinicians' responsibility to consider other drug interactions or contra-indications not listed here.

The following drugs or drug classes were most often implicated in a UK study[8] looking at cause of admission in two hospitals over a six month period (result given as percentage of adverse drug reaction—ADR—related admissions which in turn were 6.5% of all admissions).

1. NSAIDs including aspirin 29.6%
2. Diuretics 27.3%
3. Warfarin 10.5%
4. ACEI/A2RAS 7.7%
5. Antidepressants including lithium 7.1%
6. Beta-blockers 6.8%
7. Opiates 6.0%
8. Digoxin 2.9%
9. Prednisolone 2.5%
10. Clopidogrel 2.4%

This study was in patients over the age of 16, but clinicians will recognise that these drugs are commonly prescribed in older people.

The authors suggested that over 70% of the ADRs were avoidable. These findings are supported by a 2006 systematic review[9] which found the four most common drug groups associated with preventable drug-related admissions to be antiplatelets (16%), diuretics (15.9%), NSAIDs (11%) and anticoagulants (8.3%). In addition to those listed above, they found drugs used in diabetes (3.5%), positive inotropes (3.2%), calcium channel blockers (2.8%) and antiepileptics (2.3%) were also implicated. (This review was not confined to the UK population and not all studies were specific to older people).

Wound Management

Local Wound Management Prescribing Guidelines are available from the **Medicines Management** formulary pages.

www.northeast.devonformularyguidance.nhs.uk/formulary/chapters/17.-wound-management

www.southwest.devonformularyguidance.nhs.uk/formulary/chapters/17-wound-management

Anticholinergic Burden Scale (ACB)[10]
A total score of three or more is considered clinically relevant.

ACB score 1	ACB score 2	ACB score 3
Atenolol Codeine Colchicine Diazepam Digoxin Haloperidol Fentanyl Furosemide Loperamide Morphine Nifedipine Ranitidine Warfarin	Carbamazepine Pethidine	Amitriptyline Chlorphenamine Clozapine Hydroxyzine Olanzapine Oxybutynin Paroxetine Promethiazine Tolterodine

Vaccines BNF Chapter 14

START

Seasonal trivalent **influenza vaccine** annually

Pneumococcal vaccine at least once after age 65 according to national guidelines

STOPP

Renal System

The following drugs are potentially inappropriate in older people with acute or chronic kidney disease with renal function below particular levels of eGFR (refer to summary of product characteristics datasheets and local formulary guidelines)

Digoxin at a long-term dose greater than 125µg/day if eGFR < 30 ml/min/1.73m2 (risk of digoxin toxicity if plasma levels not measured).

Direct thrombin inhibitors (e.g. dabigatran) if eGFR < 30 ml/min/1.73m2 (risk of bleeding)

Factor Xa inhibitors (e.g. rivaroxaban, apixaban) if eGFR < 15 ml/min/1.73m2 (risk of bleeding)

NSAID's if eGFR < 50 ml/min/1.73m2 (risk of deterioration in renal function).

Colchicine if eGFR < 10 ml/min/1.73m2 (risk of colchicine toxicity)

Metformin if eGFR < 30 ml/min/1.73m2 (risk of lactic acidosis).

If wanting to reduce the burden of polypharmacy in gradual steps it might be prudent to tackle the above drugs as a priority after removing ineffective or unnecessary treatment.

Many anticholinergic (antimuscarinic) drugs are included in the STOPP sections already but as combining anticholinergic drugs increases the risk of side effects (including confusion, falls and death) the Anticholinergic Cognitive Burden scale[10] for some commonly prescribed drugs is given at the end of the document.

Particular caution should be taken if considering stopping the following drugs (continue treatment, gradual withdrawal or specialist advice before stopping):

- ACEI and diuretics used in heart failure.
- Amiodarone, CCBs, beta-blockers or digoxin used to control heart rate or rhythm.
- Anticonvulsants used in epilepsy.
- Antidepressant, antipsychotic or mood stabilizing drugs.
- Antimuscarinic or other drugs used in Parkinson's disease.
- Steroids, DMARDs or immunosuppressant drugs.

Screening Tool of Older Persons' Prescriptions (STOPP) version 2.

The following prescriptions are potentially inappropriate to use in patients aged 65 years and older.

Indication of medication

1. Any drug prescribed without an evidence-based clinical indication.

2. Any drug prescribed beyond the recommended duration, where treatment duration is well defined.

3. Any duplicate drug class prescription e.g. two concurrent NSAIDs, SSRIs, loop diuretics, ACE inhibitors, anticoagulants (optimisation of monotherapy within a single drug class should be observed prior to considering a new agent).

Drugs that predictably increase the risk of falls in older people

Benzodiazepines (sedative, may cause reduced sensorium, impair balance)

Neuroleptic drugs (may cause gait dyspraxia, Parkinsonism).

Vasodilator drugs (e.g. alpha-1 receptor blockers, calcium channel blockers, long-acting nitrates, ACE inhibitors, angiotensin I receptor blockers) with persistent postural hypotension i.e. recurrent drop in systolic blood pressure ≥ 20mmHg (risk of syncope, falls).

Hypnotic Z-drugs e.g. zopiclone, zolpidem, zaleplon (may cause protracted daytime sedation, ataxia).

NICE TA160 and **TA161** cover **prevention of osteoporosis.**

In primary prevention, women aged 75 and over do not require a DEXA scan before starting alendronic acid if they have two or more clinical risk factors or indicators of low BMD; for secondary prevention this is reduced to one or more.

For treatments other than alendronic acid a DEXA scan is required because the treatments are only indicated at certain T scores; unless, in secondary prevention, the clinician considers it inappropriate or unfeasible.

In 2011 concerns were raised about cardiovascular risks of calcium and vitamin D supplements. The MHRA[13] issued guidance that the data limitations meant that there should be no change to current practice.

There were also reports of atypical fractures with long term bisphosphonate therapy. The MHRA advice was to periodically review the benefits and risks, particularly after 5 years therapy.

Further information on Drugs affecting Bone Metabolism is available on local formularies:
www.northeast.devonformularyguidance.nhs.uk/
www.southwest.devonformularyguidance.nhs.uk/formulary/

Guidance to support the safe use long term oral bisphosphonate therapy by The All Wales Medicine Strategy Group

www.awmsg.org/docs/awmsg/medman/Guidance%20to%20Support%20the%20Safe%20Use%20of%20Long-term%20Oral%20Bisphosphonate%20Therapy.pdf

Musculoskeletal System BNF Chapter 10

START

Disease-modifying anti-rheumatic drug (DMARD) with active, disabling rheumatoid disease.

Bisphosphonates and **vitamin D and calcium** in patients taking long-term systemic corticosteroid therapy.

Vitamin D and calcium supplement in patients with known osteoporosis and/or previous fragility fracture(s) and/or (Bone Mineral Density T-scores more than -2.5 in multiple sites).

Bone anti-resorptive or anabolic therapy (e.g. bisphosphonate, strontium ranelate, teriparatide, denosumab) in patients with documented osteoporosis, where no pharmacological or clinical status contraindication exists (Bone Mineral Density T-scores -> 2.5 in multiple sites) and/or previous history of fragility fracture(s).

Vitamin D supplement in older people who are house-bound or experiencing falls or with osteopenia (Bone Mineral Density T-score is > -1.0 but < -2.5 in multiple sites).

Xanthine-oxidase inhibitors (e.g. allopurinol, febuxostat) with a history of recurrent episodes of gout.

Folic acid supplement in patients taking methotrexate.

The STOPP START recommendations should be read in conjunction with local formulary guidance. Some START recommendations will be undertaken by specialists and not GPs

Colour key

Medication to consider stopping in patients over 65 from the STOPP Tool

Medication to consider starting in patients over 65 from the START Tool

National and local guidance e.g. NICE Guidelines or other supporting/useful information e.g. prescribing safety indicators (PSI).

STOPP: Screening Tool of Older People's potentially inappropriate Prescriptions.

The following STOPP prescriptions are potentially inappropriate in persons aged ≥65 years of age

Gastrointestinal System BNF Chapter 1

Prochlorperazine or **metoclopramide** with Parkinsonism (risk of exacerbating Parkinsonian symptoms).

Proton pump inhibitor (PPI) for uncomplicated peptic ulcer disease or erosive peptic oesophagitis at full therapeutic dosage for > 8 weeks (dose reduction or earlier discontinuation indicated).

Drugs likely to cause constipation (e.g. antimuscarinic/ anticholinergic drugs, oral iron, opioids, verapamil, aluminium antacids) in patients with chronic constipation where non-constipating alternatives are available (risk of exacerbation of constipation).

Oral elemental iron doses greater than 200 mg daily (e.g. ferrous fumarate> 600 mg/day,
ferrous sulphate > 600 mg/day,
ferrous gluconate> 1800 mg/day; no evidence of enhanced iron absorption above these doses).

Review enteral nutrition: **NICE CG32** (Nutrition support in adults) recommends assessment using a tool such as MUST:

http://www.devonformularyguidance.nhs.uk/
www.bapen.org.uk/pdfs/must/must_full.pdf

STOPP

COX-2 selective NSAIDs with concurrent cardiovascular disease (increased risk of myocardial infarction and stroke)

NSAID with concurrent corticosteroids without PPI prophylaxis (increased risk of peptic ulcer disease)

Oral bisphosphonates in patients with a current or recent history of upper gastrointestinal disease i.e. dysphagia, oesophagitis, gastritis, duodenitis, or peptic ulcer disease, or upper gastrointestinal bleeding (risk of relapse/exacerbation of oesophagitis, oesophageal ulcer, oesophageal stricture)

Prescribing safety indicators: NSAIDs should not be prescribed in patients with peptic ulcer disease or in patients aged 75 or over without gastro protection.

NSAIDs should not be prescribed in patients aged 65+ with eGFR <60 or to patients with heart failure.

Musculoskeletal System BNF Chapter 10

STOPP

Non-steroidal anti-inflammatory drug (NSAID)

- other than COX-2 selective agents with history of peptic ulcer disease or gastrointestinal bleeding, unless with concurrent PPI or H2 antagonist (risk of peptic ulcer relapse).
- With severe hypertension (risk of exacerbation of hypertension) or severe heart failure (risk of exacerbation of heart failure).
- Long-term use (>3 months) for symptom relief of osteoarthritis pain where paracetamol has not been tried (simple analgesics preferable and usually as effective for pain relief).

Corticosteroids

- Long-term (>3 months) as monotherapy for rheumatoid arthritis (risk of systemic corticosteroid side-effects).

- Other than periodic intra-articular injections for mono-articular pain for osteoarthritis (risk of systemic corticosteroid side-effects).

Long-term **NSAID or colchicine** (>3 months) for chronic treatment of gout where there is no contraindication to a xanthine-oxidase inhibitor (e.g. allopurinol, febuxostat) (xanthine-oxidase inhibitors are first choice prophylactic drugs in gout).

START: Screening Tool to Alert doctors to Right i.e. appropriate, indicated Treatments.

These START medications should be considered for people ≥65 years of age with the following conditions, where no contraindication exists.

Gastrointestinal System BNF Chapter 1

Proton Pump Inhibitor with severe gastro-oesophageal reflux disease or peptic stricture requiring dilatation.

Fibre supplements (e.g. bran, ispaghula, methylcellulose, sterculia) for diverticulosis with a history of constipation

NICE CG177 Osteoarthritis
When paracetamol or topical NSAID is ineffective consider substitution with oral NSAID. Use lowest dose for shortest possible time. Offer a standard NSAID...Co-prescribe with a **proton pump inhibitor**

Local dyspepsia and gastric ulcer prescribing guidelines are available from the Devon Formulary pages
http://www.devonformularyguidance.nhs.uk/

For diarrhoea of unknown cause consider the possibility of Clostridium difficile infection (CDI) if there is a history of antibiotic use or recent hospital discharge.
Stop antimotility agents and PPIs
Stop antibiotics

Cardiovascular System BNF Chapter 2

STOPP

Digoxin for heart failure with normal systolic ventricular function (no clear evidence of benefit)

Verapamil or **diltiazem** with NYHA Class III or IV heart failure (may worsen heart failure).

Beta-blocker

- In combination with verapamil or diltiazem (risk of heart block).
- with bradycardia (< 50/min), type II heart block or complete heart block (risk of complete heart block, asystole).

Amiodarone as first-line antiarrhythmic therapy in supra-ventricular tachyarrhythmia (higher risk of side-effects than beta-blockers, digoxin, verapamil or diltiazem)

Loop diuretic

- as first-line treatment for hypertension (safer, more effective alternatives available).
- for dependent ankle oedema without clinical, biochemical evidence or radiological evidence of heart failure, liver failure, nephrotic syndrome or renal failure (leg elevation and /or compression hosiery usually more appropriate).
- for treatment of hypertension with concurrent urinary in-continence (may exacerbate incontinence).

Thiazide diuretic with current significant hypokalaemia (i.e. serum K+ < 3.0 mmol/l), hyponatraemia (i.e. serum Na+ < 130 mmol/l), hypercalcaemia (i.e. corrected serum calcium > 2.65 mmol/l) or with a history of gout (hypokalaemia, hyponatraemia, hypercalcaemia and gout can be precipitated by thiazide diuretic).

Urogenital System BNF Chapter 7

START

Alpha-1 receptor blocker with symptomatic prostatism, where prostatectomy is not considered necessary.

5-alpha reductase inhibitor with symptomatic prostatism, where prostatectomy is not considered necessary.

Topical **vaginal oestrogen** or vaginal oestrogen pessary for symptomatic atrophic vaginitis.

NICE CG171 Urinary incontinence in women

There is evidence to support the use of pelvic floor muscle training and bladder training ahead of medication.

Immediate release oxybutynin should be offered to women with OAB or mixed UI if bladder training has been ineffective. If the first treatment for OAB or mixed UI is not effective or well -tolerated, offer another drug with the lowest acquisition cost. Do not offer oxybutynin (immediate release) to frail older women

OAB: overactive bladder syndrome

UI: urinary incontinence

Urogenital System BNF Chapter 7

STOPP

Antimuscarinic drugs

- with dementia, or chronic cognitive impairment (risk of increased confusion, agitation)
- with narrow-angle glaucoma (risk of acute exacerbation of glaucoma),
- with chronic prostatism (risk of urinary retention)

Selective alpha-1 blockers in those with symptomatic orthostatic hypotension or micturition syncope (risk of precipitating recurrent syncope).

Improvement with antimuscarinic drugs is generally small (less than 20% compared to placebo) so patients may have been tried on several brands. Even if on a formulary drug consider a drug holiday to reassess efficacy. There is no reason to expect patches or slow release versions to be more effective.

Further information is in the local formularies:

www.northeast.devonformularyguidance.nhs.uk/

www.southwest.devonformularyguidance.nhs.uk/

Centrally-acting antihypertensives (e.g. methyldopa, clonidine, moxonidine, rilmenidine, guanfacine), unless clear intolerance of, or lack of efficacy with, other classes of antihypertensives (centrally-active antihypertensives are generally less well tolerated by older people than younger people).

ACE inhibitors or **Angiotensin Receptor Blockers** in patients with hyperkalaemia.

Aldosterone antagonists (e.g. spironolactone, eplerenone) with concurrent potassium-conserving drugs (e.g. ACEI's, ARB's, amiloride, triamterene) without monitoring of serum potassium (risk of dangerous hyperkalaemia i.e. > 6.0 mmol/l – serum K should be monitored regularly, i.e. at least every 6 months).

Phosphodiesterase type-5 inhibitors (e.g. sildenafil, tadalafil, vardenafil) in severe heart failure characterised by hypotension i.e. systolic BP < 90 mmHg, or concurrent nitrate therapy for angina (risk of cardiovascular collapse)

Prescribing safety indicators: The combination of NSAIDs, ACEI/A2RA and diuretic is considered particularly risky. Antiplatelets should not be combined with warfarin - even if indicated the benefits are unlikely to outweigh the harms in the frail elderly.

STOPP

Antiplatelet/Anticoagulant Drugs

Aspirin

- Long-term at doses greater than 160mg per day (increased risk of bleeding, no evidence for increased efficacy).

- With a past history of peptic ulcer disease without concomitant PPI (risk of recurrent peptic ulcer).

Aspirin, clopidogrel, dipyridamole, vitamin K antagonists, direct thrombin inhibitors or factor Xa inhibitors with concurrent significant bleeding risk, i.e. uncontrolled severe hypertension, bleeding diathesis, recent non-trivial spontaneous bleeding (high risk of bleeding).

Aspirin plus clopidogrel as secondary stroke prevention, unless the patient has a coronary stent(s) inserted in the previous 12 months or concurrent acute coronary syndrome or has a high grade symptomatic carotid arterial stenosis (no evidence of added benefit over clopidogrel monotherapy)

Aspirin in combination with vitamin K antagonist, direct thrombin inhibitor or factor Xa inhibitors in patients with chronic atrial fibrillation (no added benefit from aspirin)

Endocrine System BNF Chapter 6

START

ACE inhibitor or **Angiotensin Receptor Blocker** (if intolerant of ACE inhibitor) in diabetes with evidence of renal disease .

In 2009 The MHRA issued advice that aspirin is not licensed for primary prevention and recent studies supported its use only in secondary prevention. However they did state that the benefits and risks have to be considered for individual patients particularly the benefits with vascular disease including diabetes (but also the risks of gastrointestinal harms).

Offer statin treatment for the primary prevention of CVD to adults with type 1 diabetes who:

- are older than 40 years **or**
- have had diabetes for more than 10 years **or**
- have established nephropathy **or**
- have other CVD risk factors

Offer atorvastatin 20 mg for the primary prevention of CVD to people with type 2 diabetes who have a 10% or greater

Endocrine System BNF Chapter 6

STOPP

Sulphonylureas with a long duration of action (e.g. glibenclamide, chlorpropamide, glimepiride) with type 2 diabetes mellitus (risk of prolonged hypoglycaemia).

Thiazolidenediones (e.g. rosiglitazone, pioglitazone) in patients with heart failure (risk of exacerbation of heart failure)

Beta-blockers in diabetes mellitus with frequent hypoglycaemic episodes (risk of suppressing hypoglycaemic symptoms).

Oestrogens with a history of breast cancer or venous thromboembolism (increased risk of recurrence).

Oral oestrogens without progestogen in patients with intact uterus (risk of endometrial cancer).

Androgens (male sex hormones) in the absence of primary or secondary hypogonadism (risk of androgen toxicity; no proven benefit outside of the hypogonadism

NICE NG28 Type 2 Diabetes covers:

- offering lifestyle advice as well as medication to achieve individually set HbA1c levels (

- self monitoring of blood glucose only when it can be used as part of the overall management

- which medication to use

Prescribing safety indicators: Glitazones should not be used in heart failure. The BNF advises caution prescribing glitazones in the elderly because of increased risk of fracture, bladder cancer and heart failure.

STOPP

Antiplatelet agents with vitamin K antagonist, direct thrombin inhibitor or factor Xa inhibitors in patients with stable coronary, cerebrovascular or peripheral arterial disease (No added benefit from dual therapy).

Ticlopidine in any circumstances (clopidogrel and prasugrel have similar efficacy, stronger evidence and fewer side-effects).

Vitamin K antagonist, direct thrombin inhibitor or factor Xa inhibitors for first deep venous thrombosis without continuing provoking risk factors (e.g. thrombophilia) for > 6 months, (no proven added benefit).

Vitamin K antagonist, direct thrombin inhibitor or factor Xa inhibitors for first pulmonary embolus without continuing provoking risk factors (e.g. thrombophilia) for > 12 months (no proven added benefit).

NSAID and vitamin K antagonist, direct thrombin inhibitor or factor Xa inhibitors in combination (risk of major gastrointestinal bleeding).

NSAID with concurrent antiplatelet agent(s) without PPI prophylaxis (increased risk of peptic ulcer disease)

Local prescribing guidelines are available from the Devon Formulary pages
www.northeast.devonformularyguidance.nhs.uk
www.southwest.devonformularyguidance.nhs.uk

NICE CG180 Atrial Fibrillation (AF)
When to start apixaban, dabigatran etexilate, rivaroxaban or a vitamin K antagonist in AF:

Consider anticoagulation for men with a CHA2DS2-VASc score of 1. Take the bleeding risk into account.

Offer anticoagulation to people with a CHA2DS2-VASc score of 2 or above, taking bleeding risk into account.

Discuss the options for anticoagulation with the person and base the choice on their clinical features and preferences.

Patients taking **a vitamin K antagonist** monitor TTR:

Calculate TTR over a maintenance period of at least 6 months. Poor anticoagulation control shown by any of the following:

- 2 INR values higher than 5 or 1 INR value higher than 8 within the past 6 months
- 2 INR values less than 1.5 within the past 6 months
- TTR less than 65%.

NICE TA 210 covers which antiplatelet to use to prevent occlusive vascular events e.g. **MI** use aspirin first line; **ischaemic stroke** use clopidogrel first line and **TIA** use MR dipyridamole AND aspirin.

NICE CG 181 Lipid Modification Prescribing Guidelines do not specify a degree of independence or life expectancy for secondary prevention (offer to all adults with clinical evidence of CVD); in primary prevention they suggest systematic strategies are used to identify people aged 40- 74 likely to be at high risk— statins can be started in older people but risk calculators are inaccurate, they may be at greater risk from the treatment and benefit is unlikely to be gained until after five years of therapy.

NICE CG42 Dementia covers the use of **acetylcholinesterase inhibitors (AChEIs) and memantine** in dementia. They should be started by a specialist and reviewed by a specialist team to ascertain if it is worthwhile continuing them.

Acetylcholinesterase inhibitors are indicated in mild to moderate Alzheimer's disease (AD). Memantine is indicated in moderate AD if AChEIs are contraindicated or not tolerated and is indicated in severe AD.

In elderly patients with dementia, antipsychotic drugs are associated with a small increased risk of mortality and an increased risk of stroke or transient ischaemic attack. Furthermore, elderly patients are particularly susceptible to postural hypotension and to hyper- and hypothermia in hot or cold weather. Guidance on treating BPSD (behavioural and psychological symptoms in patients with dementia) is available from the Devon Formulary

www.northeast.devonformularyguidance.nhs.uk/formulary/chapters/4.-central-nervous-system/behavioural-and-psychological-symptoms-of-dementia-bpsd

www.southwest.devonformularyguidance.nhs.uk/formulary/chapters/4.-central-nervous-system/behavioural-and-psychological-symptoms-of-dementia-bpsd

Central Nervous System and Psychotropic Drugs BNF Chapter 4

START

Levodopa or **a dopamine agonist** in idiopathic Parkinson's disease with functional impairment and resultant disability.

Non-TCA antidepressant drug in the presence of persistent major depressive symptoms.

Acetylcholinesterase inhibitor (e.g. **donepezil, rivastigmine, galantamine)** for mild-moderate Alzheimer's dementia or Lewy Body dementia (rivastigmine).

Topical prostaglandin, prostamide or beta-blocker for primary open-angle glaucoma.

Selective serotonin reuptake inhibitor (or SNRI or pregabalin if SSRI contraindicated) for persistent severe anxiety that interferes with independent functioning.

Dopamine agonist (ropinirole or pramipexole or rotigotine) for Restless Legs Syndrome, once iron deficiency and severe renal failure have been excluded.

High-potency opioids in moderate-severe pain, where paracetamol, NSAIDs or low-potency opioids are not appropriate to the pain severity or have been ineffective.

Laxatives in patients receiving opioids regularly

Cardiovascular System BNF Chapter 2

START

Vitamin K antagonists or **direct thrombin inhibitors** or **factor Xa inhibitors** in the presence of chronic atrial fibrillation.

Antiplatelet therapy (aspirin or clopidogrel or prasugrel or ticagrelor) with a documented history of coronary, cerebral or peripheral vascular disease.

Antihypertensive therapy where systolic blood pressure consistently > 160 mmHg and/or diastolic blood pressure consistently >90 mmHg; or systolic blood pressure > 140 mmHg and /or diastolic blood pressure > 90 mmHg if diabetic.

Statin therapy with a documented history of coronary, cerebral or peripheral vascular disease, unless the patient's status is end-of-life or age is > 85 years.

Angiotensin Converting Enzyme (ACE) inhibitor with systolic heart failure and/or documented coronary artery disease.

Beta-blocker with ischaemic heart disease.

Appropriate **beta-blocker** (bisoprolol, carvedilol or nebivolol) with stable systolic heart failure.

Respiratory System BNF Chapter 3

STOPP

Theophylline as monotherapy for COPD (safer, more effective alternative; risk of adverse effects due to narrow therapeutic index).

Systemic corticosteroids instead of inhaled corticosteroids for maintenance therapy in moderate-severe COPD (unnecessary exposure to long-term side-effects of systemic corticosteroids and effective inhaled therapies are available).

Anti-muscarinic bronchodilators (e.g. ipratropium, tiotropium) with a history of narrow angle glaucoma (may exacerbate glaucoma) or bladder outflow obstruction (may cause urinary retention).

Non-selective beta-blocker (whether oral or topical for glaucoma) with a history of asthma requiring treatment (risk of increased bronchospasm).

Benzodiazepines with acute or chronic respiratory failure i.e. $pO2 < 8.0$ kPa ± $pCO2 > 6.5$ kPa (risk of exacerbation of respiratory failure).

NICE CG 101 COPD
Theophylline
Only offer theophylline after trials of short- and long-acting bronchodilators or to people who cannot use inhaled therapy.

Oral Corticosteroids
Maintenance use of oral corticosteroid therapy in COPD is not normally recommended.
Some people with advanced COPD may need maintenance oral corticosteroids if treatment cannot be stopped after an exacerbation. Keep the dose as low as possible, monitor for osteoporosis and offer prophylaxis.

NICE CG90 Depression in Adults:
The first step in mild depression is not routinely to prescribe e.g. offer cognitive behavioural therapy (CBT).

Prescribing safety indicators: The combination of tricyclic antidepressants and heart failure is considered risky (reduced contractility and pro-arrhythmic).

When reviewing antipsychotics the original diagnosis must be carefully considered—if for psychosis then benefit may well outweigh risks.

Central Nervous System
BNF Chapter 4
Further information:

Welsh MeReC gives guidance on stopping benzodiazepines, antidepressants and antipsychotics available at **www.wemerec.org**.

Patient.co.uk has both patient information and professional resources on stopping benzodiazepines.

For **palliative care** the websites
http://www.devonformularyguidance.nhs.uk/
www.northdevonhealth.nhs.uk/gp/end-of-life-care/
contains local information

WHO analgesic ladder:
Mild Opioid: codeine, dihydrocodeine, tramadol.
Strong opioid: morphine, fentanyl, diamorphine, buprenorphine, oxycodone, pethidine, tramadol—at high doses.

STOPP

Phenothiazines as first-line treatment, since safer and more efficacious alternatives exist (phenothiazines are sedative, have significant anti-muscarinic toxicity in older people, with the exception of prochlorperazine for nausea/vomiting/ vertigo, chlorpromazine for relief of persistent hiccoughs and levomepromazine as an anti-emetic in palliative care).

Levodopa or dopamine agonists for benign essential tremor (no evidence of efficacy).

First generation antihistamines (safer, less toxic antihistamines now widely available).

Opiates

Use of **oral or transdermal strong opioids** (morphine, oxycodone, fentanyl, buprenorphine, diamorphine, methadone, tramadol, pethidine, pentazocine) as first line therapy for mild pain (WHO analgesic ladder not observed).

Use of **regular** (as distinct from PRN) opioids without concomitant laxative (risk of severe constipation).

Long-acting opioids without short-acting opioids for breakthrough pain (risk of persistence of severe pain).

Respiratory System BNF Chapter 3

START

Inhaled B2 agonist or antimuscarinic bronchodilator (e.g. ipratropium, glycopyrronium) for mild to moderate asthma or COPD.

Regular inhaled corticosteroid for moderate-severe asthma or COPD, where FEV1 <50% of predicted value and repeated exacerbations requiring treatment with oral corticosteroids.

Home continuous **oxygen** with documented chronic hypoxaemia (i.e. pO2 < 8.0 kPa or 60 mmHg or SaO2 < 89%)

NICE CG 101 COPD

Assess the need for **oxygen** therapy in people with any of the following:
- very severe airflow obstruction (FEV1 <30% predicted)
- cyanosis
- polycythaemia
- peripheral oedema
- raised jugular venous pressure
- oxygen saturations less than or equal to 92% breathing air.

Give people with FEV1 < 30% or risk of exacerbation a course of **antibiotic** and **oral corticosteroid** tablets to keep at home.

www.northeast.devonformularyguidance.nhs.uk

www.southwest.devonformularyguidance.nhs.uk

COPD Local formulary recommendations are adapted from the **GOLD** Chronic obstructive pulmonary disease (COPD) guidance which is intended to guide and rationalise initial treatment choice when managing patients with COPD.

Central Nervous System and Psychotropic Drugs
BNF Chapter 4

STOPP

Tricyclic Antidepressants (TCAs)

- with dementia,
- with narrow angle glaucoma,
- with cardiac conduction abnormalities,
- with prostatism, or prior history of urinary retention
- (risk of worsening these conditions).
- as first-line antidepressant treatment (higher risk of adverse drug reactions with TCAs than with SSRIs or SNRIs).

Neuroleptics with moderate-marked antimuscarinic/ anticholinergic effects (chlorpromazine, clozapine, flupenthixol, fluphenzine, pipothiazine, promazine, zuclopenthixol) with a history of prostatism or previous urinary retention (high risk of urinary retention).

Neuroleptic antipsychotic in patients with behavioural and psychological symptoms of dementia (BPSD) unless symptoms are severe and other non-pharmacological treatments have failed (increased risk of stroke).

Neuroleptics as hypnotics, unless sleep disorder is due to psychosis or dementia (risk of confusion, hypotension, extra-pyramidal side effects, falls).

Benzodiazepines for ≥ 4 weeks (no indication for longer treatment; risk of prolonged sedation, confusion, impaired balance, falls, road traffic accidents; all benzodiazepines should be withdrawn gradually if taken for more than 2-4 weeks as there is a risk of causing a benzodiazepine withdrawal syndrome if stopped abruptly.

Selective serotonin re-uptake inhibitors (SSRI's) with current or recent significant hyponatraemia i.e. serum Na+ <130 mmol/l (risk of exacerbating or precipitating hyponatraemia).

Antipsychotics (i.e. other than quetiapine or clozapine) in those with parkinsonism or Lewy Body Disease (risk of severe extra-pyramidal symptoms)

Anticholinergics/antimuscarinics

- to treat extra-pyramidal side-effects of neuroleptic medications (risk of anticholinergic toxicity)
- In patients with delirium or dementia (risk of exacerbation of cognitive impairment).

Acetylcholinesterase inhibitors with a known history of persistent bradycardia (< 60 beats/min.), heart block or recurrent unexplained syncope or concurrent treatment with drugs that reduce heart rate such as beta-blockers, digoxin, diltiazem, verapamil (risk of cardiac conduction failure, syncope and injury).