CLINICAL AUDIT

Identifying **inappropriate anticholinergic medicine** prescribing

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bpac nz
better medicine

Audit focus

The purpose of this audit is to assess anticholinergic burden in older patients who are prescribed anticholinergic medicines and determine if their current treatment is still appropriate.

Background

Anticholinergic medicines are indicated for range of medical conditions and include antidepressants, antihistamines, antipsychotics and medicines to treat urinary urgency and incontinence (Table 1). People who are prescribed multiple medicines with anticholinergic activity are at increased risk of adverse effects (e.g. dry mouth, blurred vision, urinary retention and drowsiness) and this cumulative anticholinergic influence is referred to as the anticholinergic burden, although it can occur with just one anticholinergic medicine. In New Zealand, more than 40% of people aged over 65 years are exposed to medicines with anticholinergic activity.[1] This group is more likely to experience anticholinergic burden due to age-related changes in physiology, and increased likelihood of multiple morbidities requiring management with anticholinergic medicines. To prevent unnecessary exposure to associated risks, anticholinergic medicines should only be prescribed to people with a specific clinical indication for treatment, and at the lowest effective dose for the shortest period of time.

Given the range of medical conditions that anticholinergic medicines are prescribed to manage, each clinician is likely to have a number of patients who are being treated with these medicines; some for longer than is recommended or with a higher dose than is necessary. These patients may benefit from a dose reduction or deprescribing, depending on the clinical scenario and the patient's therapeutic goals and treatment preferences. Patients who still require pharmacological management may benefit from switching to medicines with lower or no anticholinergic activity, if available. Non-pharmacological interventions should also be prioritised to reduce the required dose of, or overall need for, anticholinergic medicines.

When deprescribing or switching medicines, gradual dose tapering of the original anticholinergic medicine may be required to limit withdrawal symptoms. A general "rule of thumb" for tapering anticholinergic medicines is to reduce the prescribed dose by 25 – 50% over a period of one to four weeks. Close monitoring is required over the tapering period for anticholinergic withdrawal symptoms (over the first one to three days) and recurrence of symptoms associated with the condition originally being treated (after approximately seven days). Patients who develop withdrawal symptoms or a reoccurrence of their original symptoms should restart the medicine at the lowest tolerated dose and reattempt a slower tapered reduction after 6 – 12 weeks. Alternate day dosing may be beneficial in situations where available medicine strengths are not appropriate for tapering. Clinicians should ensure that any anticholinergic medicines prescribed for short-term symptom management are not inadvertently continued, e.g. orphenadrine for muscle spasms associated with a lower back strain, promethazine for nausea and vomiting or motion sickness.

There will be some patients taking anticholinergic medicines long-term for whom reducing the dose or stopping the anticholinergic medicine is not appropriate, e.g. clozapine for schizophrenia. If required, medicines with anticholinergic activity should be prescribed at the lowest effective dose, for the shortest possible duration.

For further information on anticholinergic burden in older people, see: **bpac.org.nz/2024/anticholinergic.aspx**

1. Nishtala PS, Narayan SW, Wang T, et al. Associations of drug burden index with falls, general practitioner visits, and mortality in older people. Pharmacoepidemiology and Drug 2014;23:753–8. doi:10.1002/pds.3624.

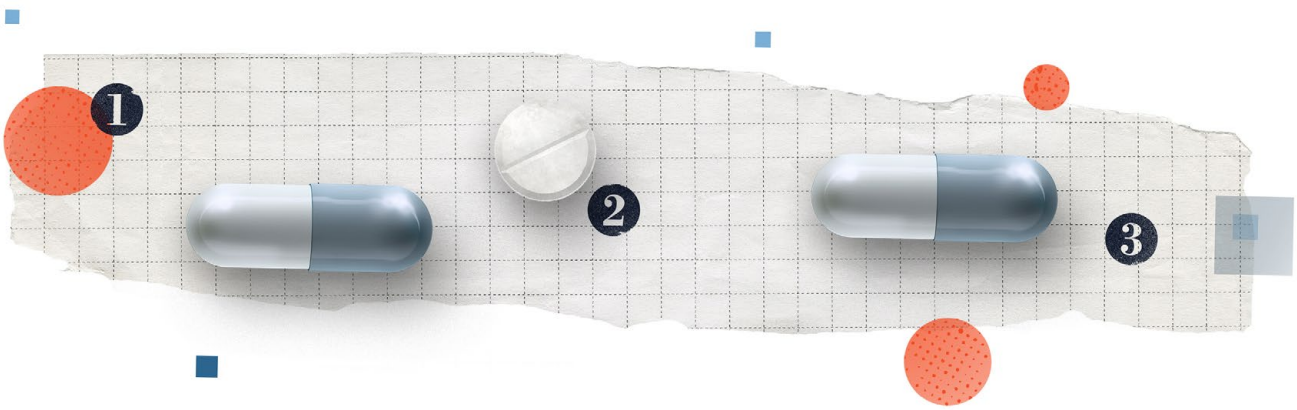

Table 1. Examples of prescription and over-the-counter medicines with anticholinergic activity. N.B. This list is not exhaustive and should be used a general guide only as there is inconsistency in anticholinergic rankings between sources. Any medicine with any level of anticholinergic activity should be used with caution in patients susceptible to the adverse effects, especially if used in combination.

Class	Medicines with anticholinergic activity		
	High anticholinergic activity	**Mixed evidence for high anticholinergic activity***	**Moderate to low anticholinergic activity**
Antidepressants **SSRIs and SNRIs**		Paroxetine	Citalopram, escitalopram, fluoxetine, sertraline, venlafaxine
TCAs and other	Amitriptyline, clomipramine, imipramine	Nortriptyline	Dosulepin, mirtazapine, moclobemide
Antiepileptics			Carbamazepine
Antihistamine	Chlorphenamine, dexchlorpheniramine, diphenhydramine, doxylamine, promethazine		Cetirizine, fexofenadine, loratadine
Antinausea	Meclozine (meclizine)		Cyclizine, prochlorperazine
Antipsychotics	Chlorpromazine, levomepromazine	Clozapine, olanzapine, quetiapine	Amisulpride, aripiprazole, haloperidol, lithium, risperidone, ziprasidone
Benzodiazepines		Alprazolam	Clobazam, clonazepam, diazepam, lorazepam, oxazepam, temazepam
Bronchodilators (antimuscarinic)	Ipratropium		Glycopyrronium, tiotropium, umeclidinium
Cardiac medicines	Atropine	Digoxin	
Diuretics		Furosemide	
Gabapentinoids			Gabapentin, pregabalin
Gastrointestinal medicines	Hyoscine (scopolamine)		Domperidone, loperamide, metoclopramide
Skeletal muscle relaxants	Orphenadrine		
Opioids			Codeine, dihydrocodeine, fentanyl, methadone, morphine, oxycodone, pethidine, tramadol
Parkinson's medicines	Benzatropine, procyclidine		Amantadine, levodopa
Urinary urgency and incontinence medicines	Oxybutynin†, solifenacin		

SNRI = serotonin and noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant

* High anticholinergic activity according to some, but not all anticholinergic rating scales

† The majority of evidence suggests oxybutynin has high anticholinergic activity

Audit Plan

Summary

This audit identifies patients aged 65 years and over who are currently taking an anticholinergic medicine to assess their anticholinergic burden, whether the indication for treatment remains and if reducing the dose (or stopping or switching the medicine) is appropriate.

Recommended audit standards

Ideally, all patients who have been taking an anticholinergic medicine for longer than six months* should have undergone an assessment of their anticholinergic burden and have documented evidence in their patient record of an indication for ongoing treatment or evidence of a discussion about stepping down to a lower dose or stopping completely. This audit identifies patients who are prescribed an anticholinergic medicine and should have their anticholinergic burden assessed.

* The recommended duration of treatment for anticholinergic medicines varies depending on the condition being managed. Six months has been selected pragmatically for this audit to allow sufficient time for patients who are prescribed anticholinergic medicines, e.g. oxybutynin and solifenacin to treat urinary urgency and incontinence, to have experienced an improvement in symptoms.

Audit Data

Eligible patients

All patients aged 65 years or over who are prescribed at least one anticholinergic medicine are eligible for this audit.

Identifying patients

This is a "working audit" where the data sheet is filled in over time when you have a consultation for any reason with an eligible patient until the required number of patients has been reached.

Sample size

The number of eligible patients will vary according to your practice demographic. For the purposes of this audit, continue until at least ten eligible patients have been identified and included.

Criteria for a positive outcome

Anticholinergic burden should be assessed in a patient who is prescribed an anticholinergic medicine for longer than six months. If there is no record of a recent anticholinergic medicine assessment in the patient's clinical notes, this should be undertaken at the time or planned for their next appointment – the audit entry for the patient should remain open until this is completed. The assessment should include evaluation of all anticholinergic medicines currently prescribed to the patient, any over-the-counter use of anticholinergic medicines, and any adverse effects they are experiencing that could be related to their use of anticholinergic medicines (e.g. falls).

Based on the results of the assessment, a decision should be made to continue prescribing the anticholinergic medicine because the patient has an ongoing indication and is benefiting from treatment, or that the patient would benefit more from reducing or stopping (or switching) the anticholinergic medicine because symptom relief is insufficient, or they are experiencing adverse effects.

Following the assessment, a positive result is achieved if the patient's clinical notes contain:

- Documented evidence of assessment of anticholinergic burden in the last six months (either undertaken previously or as part of this audit); **AND EITHER**
- A record of a current indication for ongoing treatment with an anticholinergic medicine, e.g. diagnosis of urinary frequency, urgency or urge incontinence and symptom improvement when taking the anticholinergic medicine **OR**
- A record of a discussion with the patient about reducing the dose or stopping the anticholinergic medicine completely, or switching to an alternative medicine with lower anticholinergic activity (if available)

Data analysis

Use the sheet provided to record your data. Aim to carry out an assessment of anticholinergic burden for as many eligible patients as possible.

Using clinical audits for improving practice and patient outcomes

Clinical audits can be an important tool to identify where gaps exist between expected and actual performance. Once completed, they can provide ideas on how to change practice and improve patient outcomes. General practitioners are encouraged to discuss the suitability and relevance of their proposed audit with their practice or peer group prior to commencement to ensure the relevance of the audit. Outcomes of the audit should also be discussed with the practice or peer group; this may be recorded as a learning activity reflection if suitable.

The Plan, Do, Study, Act (PDSA) model is recommended by the Royal New Zealand College of General Practitioners (RNZCGP) as a framework for assessing whether a clinical audit is relevant to your practice. This model has been widely used in healthcare settings since 2000. It consists of two parts, the framework and the PDSA cycle itself, as shown in **Figure 1**.

1. The framework

This consists of three questions that help define the "what" and "how" of an improvement project (in this case an audit). The questions are:

- "What are we trying to accomplish?" – the aim
- "How will we know that a change is an improvement?" – what measures of success will be used?
- "What changes can we make that will result in improvement?" – the concept to be tested

2. The PDSA cycle

This is often referred to as the "engine" for creating, testing and carrying out the proposed changes. More than one cycle is usually required; each one is intended to be short, rapid and frequent, with the results used to inform and refine the next. This allows an ongoing process of continuous learning and improvement.

Each PDSA cycle includes four stages:

- **P**lan – decide what the change to be tested is and how this will be done
- **D**o – carry out the plan and collect the data
- **S**tudy – analyse the data, assess the impact of the change and reflect on what was learned
- **A**ct – plan the next cycle or implement the changes from your plan

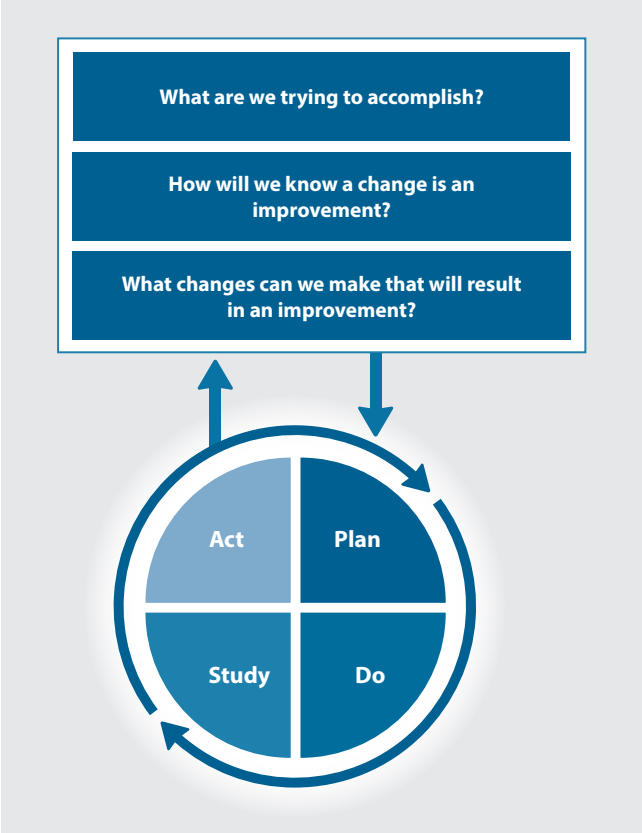

Figure 1. The PDSA model for improvement.

Source: Plan, Do, Study, Act (PDSA) cycles and the model for improvement

Claiming credits for Te Whanake CPD programme requirements

Practice or clinical audits are useful tools for improving clinical practice and credits can be claimed towards the Patient Outcomes (Improving Patient Care and Health Outcomes) learning category of the Te Whanake CPD programme, on a credit per learning hour basis. A minimum of 12 credits is required in the Patient Outcomes category over a triennium (three years).

Any data driven activity that assesses the outcomes and quality of general practice work can be used to gain credits in the Patient Outcomes learning category. Under the refreshed Te Whanake CPD programme, audits are not compulsory and the RNZCGP also no longer requires that clinical audits are approved prior to use. The college recommends the PDSA format for developing and checking the relevance of a clinical audit.

To claim credits go to the RNZCGP website: **www.rnzcgp.org.nz**

If a clinical audit is completed as part of Te Whanake requirements, the RNZCGP continues to encourage that evidence of participation in the audit be attached to your recorded activity. Evidence can include:

1. A summary of the data collected
2. An Audit of Medical Practice (CQI) Activity summary sheet (Appendix 1 in this audit or available on the RNZCGP website).

N.B. Audits can also be completed by other health professionals working in primary care (particularly prescribers), if relevant. Check with your accrediting authority as to documentation requirements.

Data sheet – cycle 1 Identifying inappropriate anticholinergic medicine prescribing

Patient aged ≥ 65 years taking an anticholinergic medicine	Patient has undergone an assessment of anticholinergic burden in the last six months		If no, carry out or arrange follow-up appointment to assess anticholinergic burden		Following assessment of anticholinergic burden	
	Yes	No	Today	Follow-up arranged	Ongoing indication for continued anticholinergic use documented in patient's notes	Documented evidence of **either:** Discussion about reducing the dose; **OR** Stopping or switching the anticholinergic medicine
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Please retain this sheet for your records to provide evidence of participation in this audit.

Data sheet – cycle 2 Identifying inappropriate anticholinergic medicine prescribing

Patient aged ≥ 65 years taking an anticholinergic medicine	Patient has undergone an assessment of anticholinergic burden in the last six months		If no, carry out or arrange follow-up appointment to assess anticholinergic burden		Following assessment of anticholinergic burden	
	Yes	No	Today	Follow-up arranged	Ongoing indication for continued anticholinergic use documented in patient's notes	Documented evidence of **either:** Discussion about reducing the dose; **OR** Stopping or switching the anticholinergic medicine
1						
2						
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Please retain this sheet for your records to provide evidence of participation in this audit.

SUMMARY SHEET
Audit of medical practice (CQI activity)

Topic:

Identifying inappropriate anticholinergic medicine prescribing

Activity designed by (name of organisation, if relevant):

Bpac^{nz}

Doctor's name:

Results discussed with peer group or colleagues?

☐ Yes ☐ No

Date:

FIRST CYCLE

DATA: Date of data collection:

CHECK: Describe any areas targeted for improvement as a result of analysing the data collected.

ACTION: Describe how these improvements will be implemented.

MONITOR: Describe how well the process is working. When will you undertake a second cycle?

SECOND CYCLE

DATA: Date of data collection:

CHECK: Describe any areas targeted for improvement as a result of analysing the data collected.

ACTION: Describe how these improvements will be implemented.

MONITOR: Describe how well the process is working.

COMMENTS:

DECEMBER 2016