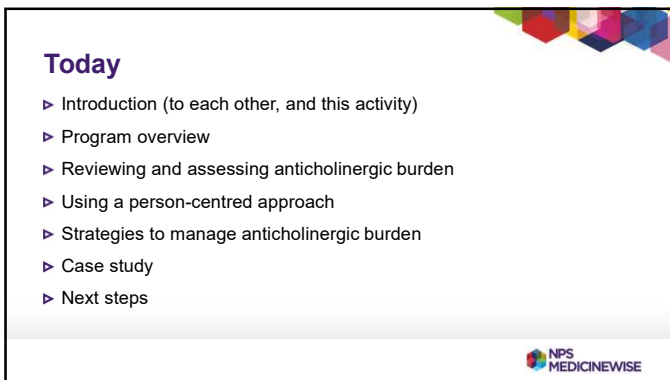


Anticholinergic burden program

Face-to-face/online training
[EV Name] ^(Post Nominals)
Educational Visitor
NPS MedicineWise

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1

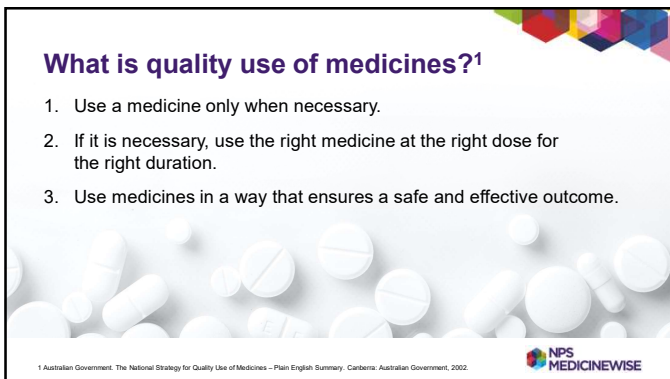


Today

- ▶ Introduction (to each other, and this activity)
- ▶ Program overview
- ▶ Reviewing and assessing anticholinergic burden
- ▶ Using a person-centred approach
- ▶ Strategies to manage anticholinergic burden
- ▶ Case study
- ▶ Next steps

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What is quality use of medicines?¹

1. Use a medicine only when necessary.
2. If it is necessary, use the right medicine at the right dose for the right duration.
3. Use medicines in a way that ensures a safe and effective outcome.

¹ Australian Government. The National Strategy for Quality Use of Medicines – Plain English Summary. Canberra: Australian Government, 2002.

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3



Anticholinergic burden... What comes to mind?

4

Anticholinergic burden: an important QUM issue

- ▶ Anticholinergic burden is the cumulative effect on a person from taking one or more medicines with anticholinergic effects.¹
- ▶ Cumulative burden may be caused by multiple medicines including those not typically thought of as having anticholinergic effects.^{2,3}
- ▶ The impact on patient health outcomes includes large increases in fall-related hospitalisation, the risk of dementia and mortality,^{4,5} and overall reduced quality of life.

1. Kauligan D, Dornell L, et al. J Pharm Pract Res 2017;47:67-77.
2. Parkinson L, et al. Med J Aust 2015;202:91-4.
3. Williams-Roberts C. Medicines: the hidden contributors to falls and hip fractures. Canberra: Australian Government, 2018.
4. Nairnata PS, et al. Pharmacopsychiatry Drug Saf 2014;23:193-8.
5. Dinichewale RR, et al. Neurosci Update 2021;4(2):26-37.

5

Compounding effects of anticholinergic and sedative medicines

- ▶ Medicines with anticholinergic or sedative properties may cause adverse events by contributing to an older person's anticholinergic or sedative burden.¹
- ▶ High long-term cumulative exposure is associated with poorer cognitive and physical functioning.²
- ▶ This burden may be decreased by reducing the number and dose of medicines with anticholinergic and sedative effects.¹

1. Bell JB, et al. Aust Fam Physician. 2012;41:45-9.
2. Wooten R, et al. J Geriatr A Biol Sci Med Sci. 2020;75:357-65.

6

Quality Indicator Program

From **1 July 2021**, RACFs must collect and report on new quality indicators under the National Aged Care Mandatory Quality Indicator Program (QI Program).¹

Quality indicators measure important aspects of quality of care that can affect a resident's health and wellbeing.

Falls and major injury	Medication management
% of residents who experienced one or more falls	% of residents who were prescribed nine or more medications
% of residents who experienced one or more falls resulting in major injury	% of residents who received antipsychotic medications

¹ Department of Health, QI Program, Canberra: Australian Government Department of Health, 2021.



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Anticholinergic effects and potential outcomes

Central effects:
Drowsiness
Fatigue
Inability to concentrate
Restlessness
Dizziness
Confusion & agitation
Headache & fever
Incontinence
Memory loss
Cognitive impairment
Falls & accidents
Hallucinations
Delirium
Seizures
Functional decline & increased dependency
Diminished quality of life

Eye:
Mild dilation of pupil
Dry eyes
Inability to focus
Blurred vision
Increased risk of angle-closure glaucoma

KEY System:
Mild
Moderate
Severe

Mouth:
Dry mouth
Thirst
Oral discomfort
Reduced appetite
Difficulty in eating and swallowing
Malnutrition
Difficulty with speech
Respiratory infections
Dental or denture problems

Gastrointestinal tract:
Dyspepsia
Constipation
Gastro-oesophageal reflux
Nausea or vomiting
Faecal impaction
Paralytic ileus
GI obstruction

Genitourinary tract:
Urinary hesitancy
Difficulty urinating
Incontinence
Urinary retention or obstruction
Urinary tract infection
Exacerbation of prostatic hypertrophy

Heart:
Tachycardia
Arrhythmias
Exacerbation of angina
Exacerbation of heart failure
Postural hypotension

Skin:
Decreased sweating
Dry and flushed skin
Rash
Hyperthermia/heat stroke

Courtesy of the Australian Department of Veterans Affairs. Adapted from Figure 1 of Veterans' MATES Therapeutic Brief Brochure for Topic 39: Thinking clearly about the anticholinergic burden.



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Meet Colin

Colin is an 81-year-old resident in your facility and has been newly diagnosed with Parkinson's disease. His wife died 2 years ago. His care staff reported that he has been more forgetful and unsteady on his feet. He has also been complaining of dry eyes and constipation.

Medical history	Social history	Medicines
Parkinson's disease Hypertension Hyperlipidaemia Depression Type 2 diabetes Chronic back pain Osteoarthritis	Widowed Requires 1x assistance in activities of daily living (ADLs)	metformin 1 g tablet twice daily lipirartolol 100 mg SR tablet daily rosuvastatin 10 mg tablet at night sertraline 50 mg tablet daily telmisartan 80 mg tablet in the morning temazepam 10 mg tablet at night levodopa/carbidopa 100 mg/25 mg tablet three times daily diclofenac with xerese two tablets twice daily Movalac sachet when required Optive lubricant eye drops one to two drops in each eye when required
	Allergies Nil	



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Examples of medicines with anticholinergic effects^{1,2}

Class	Medicines*	Class	Medicines*
Antidepressants	SSRIs: citalopram, escitalopram, fluoxetine, paroxetine, sertraline SNRIs: desvenlafaxine, duloxetine, venlafaxine Other: mirtazapine	Antihistamines	Sedating: cyproheptadine, promethazine Less sedating: cetirizine, fexofenadine, loratadine
Antipsychotics	olanzapine, quetiapine, risperidone	Urinary anticholinergics	oxybutynin
Benzodiazepines	diazepam, temazepam	Drugs for Parkinson's	amantadine, benzotropine, entacapone, levodopa/carbidopa
Opioids	codeine, fentanyl, oxycodone, tapentadol, tramadol	Gastrointestinal drugs	domperidone, loperamide, metoclopramide
Adjuncts for pain management	TCA: amitriptyline, nortriptyline Gabapentinoids: gabapentin, pregabalin SNRIs: duloxetine, venlafaxine		

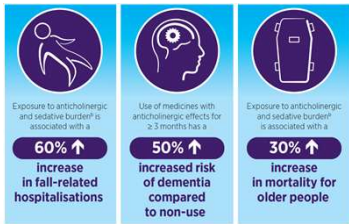
* List is not exhaustive
SNRI = serotonin and norepinephrine reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant

¹ Australian Medicines Handbook. Adelaide: AMH Pty Ltd, 2021.
² Therapeutic Guidelines. West Melbourne: Therapeutic Guidelines Ltd, 2021.



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Impact on patient health outcomes^{1,2}



¹ Based on the Drug Burden Index (DBI), which measures cumulative exposure to medicines with anticholinergic and sedative effects²
² Statistics are approximated and reflect patients in a community setting (statistics may be higher in RACFs)

¹ Nairn RG, et al. Pharmacoepidemiol Drug Saf 2014;23:753-8.
² Driouchaki RR, et al. Neurolog 2021;90:28-37.
³ The University of Sydney. The generalised medication review electronic decision support system G-MEDSS. Sydney: USYD, 2019.



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How would you assess anticholinergic burden?



- Health checks**
Comprehensive medical assessment (CMA), case conference, routine assessments, GP consults
- Validated assessment tools**
Eg, Drug Burden Index (DBI) Calculator
- Medication management reviews**
Residential Medication Management Review (RMMR), medication chart review




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Anticholinergic burden: a person-centred approach

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Back to Colin






Colin is an 81-year-old resident in your facility and has been newly diagnosed with Parkinson's disease. His wife died two years ago. His care staff reported that he has been more forgetful and unsteady on his feet. He has also been complaining of dry eyes and constipation.

Medical history Parkinson's disease Hypertension Hyperlipidaemia Depression Type 2 diabetes Chronic back pain Osteoarthritis	Social history Widowed Requires 1x assistance in activities of daily living (ADLs)	Allergies Nil	Medicines metformin 1 g tablet twice daily laparbidol 100 mg SR tablet daily rosuvastatin 10 mg tablet at night sertraline 50 mg tablet daily telmisartan 80 mg tablet in the morning temazepam 10 mg tablet at night levodopa/carbidopa 100 mg/25 mg tablet three times daily docusate with senna two tablets twice daily Movicol sachet when required Optive lubricant eye drops one to two drops in each eye when required
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Person-centred care for older people¹

What matters to the resident?  <p>A shared understanding of the resident's personal goals and preferences may improve health outcomes, facilitate patient-centred RMMRs, and drive comprehensive care planning^{2,3}</p>	Medicines  <p>Consider reviewing the resident's current medicines list, including non-prescription and over-the-counter medicines, at any transition of care or change in condition¹</p>	Mobility and cognitive function  <p>Consider anticholinergic burden when a resident experiences a fall or cognitive decline¹</p>
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1 Institute for Healthcare Improvement. Age-friendly health systems: Guide to using the 4Ms in the care of older adults. USA. 04, 2020.
 2 Venable, B. et al. PLoS Med 2015; 16(1):e1002798
 3 Australian Commission on Safety and Quality in Health Care. Implementing the comprehensive care standard: identifying goals of care. Sydney: ACSQHC; 2019


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Multidisciplinary opportunities

Multidisciplinary opportunities may support person-centred care and help address any concerns or issues.


- ▶ Case conferences
- ▶ RMMRs
- ▶ Medication Advisory Committee (MAC) meetings
- ▶ Quality Use of Medicine (QUM) services



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RMMR patient consent changes after June 2020

- ▶ Consent must be obtained from the resident or their authorised representative for each individual RMMR.¹
- ▶ If there is no other suitable person to give consent, the service may still be completed if:¹
 - the resident's physical or mental health or safety may be significantly and detrimentally impacted
 - the resident may be exposed to a potentially life-threatening situation
 - the resident might reasonably be exposed to serious injury or illness.




¹ Pharmacy Programs Administrator - Residential medication management review patient consent, Victoria, PPA, 2020.

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RMMR referrals¹

- ▶ A recommendation based on the resident's clinical need may be provided by the medical practitioner, pharmacist, nursing staff, the resident or their carer. However, a medical practitioner is required to provide the initial referral.
- ▶ The referral should include the reason for referral and all relevant prescribing and clinical history.
- ▶ Accredited pharmacists need to ensure that appropriate consent has been gained prior to conducting the RMMR.
- ▶ The resident interview (if relevant) must take place within 90 days of the date of the referral to be remunerated under the RMMR program.



¹ Pharmaceutical Society of Australia. Guidelines for pharmacists providing Residential Medication Management Review (RMMR) and Quality Use of Medicines (QUM) services. Sydney: PISA Ltd, 2017.


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Managing anticholinergic burden

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Back to Colin



Colin is an 81-year-old resident in your facility and has been newly diagnosed with Parkinson's disease. His wife died two years ago. His care staff reported that he has been more forgetful and unsteady on his feet. He has also been complaining of dry eyes and constipation.

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	Allergies Nil	

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Management guidance¹⁻³

Medicines*	Non-anticholinergic alternative considerations	Non-pharmacological options (optimize throughout management)
SSRIs (depression) citalopram escitalopram fluoxetine paroxetine sertraline SNRIs (depression) duloxetine/levulnirine venlafaxine Other (depression) mirtazapine	All antidepressants have some degree of anticholinergic or sedative effects. If considered essential, use lowest possible dose.	Lifestyle modifications <ul style="list-style-type: none"> Sleep hygiene Adequate physical activity Healthy diet Minimize alcohol consumption Reduce stress Social support
Antipsychotics (dementia with changed behaviour) (non-cognitive response)⁴ Benzodiazepines (dementia with changed behaviour) clonazepam	All antipsychotics have some degree of anticholinergic or sedative effects. If considered essential, use lowest possible dose. When stopping or tapering an antipsychotic, create a management plan that includes psychosocial interventions (to decrease caregiver depression and delay RACF admission). Note: Avoid benzodiazepines to treat agitation, aggression and psychosis of dementia. If an antipsychotic or antidepressant cannot be used, a benzodiazepine with a short half-life and no active metabolites may be considered for a maximum of 2 weeks.	Person-centred approach <ul style="list-style-type: none"> Person-centred care techniques Behavioural therapies Environmental changes

* List is not exhaustive
 CBT = cognitive behavioural therapy; SSRI = serotonin and norepinephrine reuptake inhibitor; SNRI = selective serotonin reuptake inhibitor

1 Australian Medicines Handbook. Adelaide: Abel-Phy Ltd, 2021.
 2 Therapeutic Guidelines. West Melbourne: Therapeutic Guidelines Ltd, 2021.
 3 The University of Sydney. The guard-rail medication review electronic decision support system G.MEDRS. Sydney: UeYD, 2019.

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Management guidance¹⁻³

Medicines ^a	Non-anticholinergic alternative considerations	Non-pharmacological options (optimise throughout management)
Benzodiazepines temazepam Opioids (chronic non-cancer pain) codeine fentanyl oxycodone tapentadol tramadol Non-opioids (chronic non-cancer pain) TCAs amitriptyline nortriptyline Gabapentinoids gabapentin pregabalin SNRIs duloxetine venlafaxine	Use non-pharmacological alternatives to assist with sleep. Melatonin may be an option for people aged > 55 years. Consider melatonin for an initial period of 3 weeks then review. If needed, continue use for an additional 10 weeks. Consider an integrated multidisciplinary approach to pain management. Paracetamol and NSAIDs ⁴ have no anticholinergic or sedative effects. Topical NSAIDs have fewer adverse effects than oral NSAIDs and may be more suitable in aged care. Lidocaine 5% patches are preferred if the patient has localised neuropathic pain.	<ul style="list-style-type: none"> Sleep hygiene/education Relaxation techniques Sleep restriction Stimulus control Physical therapies <ul style="list-style-type: none"> Exercise and activity⁵ Physiotherapy⁵ TENS⁵ Engage the patient in self-management strategies that focus on the patient's active contribution to their pain management. This includes physical activity, social connection, good nutrition and sleep.

^a List is not exhaustive

CBT = cognitive behavioural therapy; NSAID = nonsteroidal anti-inflammatory drug; SNRI = serotonin and noradrenaline reuptake inhibitor; TCA = tricyclic antidepressant; TENS = transcutaneous electrical nerve stimulation

¹ Australian Medicines Handbook, Adelaide: AMH Pty Ltd, 2021.
² Therapeutic Guidelines, West Melbourne: Therapeutic Guidelines Ltd, 2021.
³ The University of Sydney. The goal-directed medication review electronic decision support system G-MEDDS. Sydney: USYD, 2019.
⁴ NPS Medicinewise. First opoids, then what? Sydney: NPS Medicinewise, 2019.
⁵ Vargo KL, et al. *Pain Med*. 2014; 15(11):197-209.



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Management guidance¹⁻³

Medicines ^a	Non-anticholinergic alternative considerations	Non-pharmacological options (optimise throughout management)
Antihistamines (sergine) Sedating cypripredine promethazine Less sedating cetirizine fexofenadine loratadine Anticholinergics (urinary urge incontinence) oxybutynin	Intranasal corticosteroids are most effective for symptoms of allergic rhinitis, particularly for nasal congestion. Topical treatments (moisturisers, eye drops, anti-inflammatories, local anaesthetics) have fewer adverse effects than oral antihistamines. ⁴ Mirabegron may be an option for people with urge incontinence intolerant of anticholinergic effects, or when anticholinergics are not effective or contraindicated. Botulinum toxin may be considered for people with urge incontinence intolerant of anticholinergic effects.	Environmental <ul style="list-style-type: none"> Minimise contact with allergens Physical^a <ul style="list-style-type: none"> Sodium chloride irrigation for eyes/nose Wet/cold compress Moisturise skin <ul style="list-style-type: none"> Bladder assessment pelvic floor exercises Modify fluid intake Lifestyle (weight loss/smoking cessation) Incontinence aids Avoid constipation Minimise diuretics

^a List is not exhaustive

¹ Australian Medicines Handbook, Adelaide: AMH Pty Ltd, 2021.
² Therapeutic Guidelines, West Melbourne: Therapeutic Guidelines Ltd, 2021.
³ The University of Sydney. The goal-directed medication review electronic decision support system G-MEDDS. Sydney: USYD, 2019.
⁴ NSW Therapeutic Advisory Group. Prescribing guide for sedating antihistamines. Sydney: NSW TAG Inc., 2018.



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Monitoring withdrawal effects when de-prescribing¹

Monitor short term (within 1–3 days)	Monitor long term (> 7 days)
Monitor for withdrawal symptoms Symptoms can occur within 1–3 days of dose reduction <ul style="list-style-type: none"> Common withdrawal symptoms when de-prescribing medicines with anticholinergic effects include irritability, anxiety, insomnia and sweating. Withdrawal symptoms usually mild and can last up to 6–8 weeks. If severe symptoms (eg, tachycardia, profuse and persistent sweating, severe anxiety, or severe insomnia) occur, restart at the previous lowest effective dose. 	Monitor for recurrence of symptoms Recurrence of previous or new symptoms may occur within 1–2 weeks of dose reduction or cessation

¹ NSW Therapeutic Advisory Group Inc. De-prescribing tool. NSW TAG, 2021. <https://www.nswtag.org.au/de-prescribing-tool/>




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Managing anticholinergic side effects

- ▶ Review falls as part of the usual falls assessment protocols.
- ▶ Dry mouth management strategies^{1,2}
 - Dental products with high fluoride, calcium or casein to help prevent tooth decay
 - White petroleum jelly for dry lips
 - Avoid lollies and alcohol-containing mouthwashes
 - Stabilise dentures with adhesives to prevent ulcers and remove during sleep
 - High pH artificial saliva without citric acid
- ▶ Dry eye management strategies³
 - Lubricating eye drops, gels or ointments (best given at night)
- ▶ Constipation management strategies⁴
 - High-fibre diet (eg, prunes)
 - Drinking plenty of fluids (unless there are fluid intake restrictions)
 - Exercising

1 Better Health Channel. Dry mouth. Victoria: Department of Health State Government of Victoria, 2021.
 2 Deuschl A, Jay E. Aust Prescr 2021;44:153-160.
 3 Better Health Channel. Dry eye. Victoria: Department of Health State Government of Victoria, 2021.
 4 Veterans MATES. What you can do about constipation. Canberra: Australian Government, 2007.



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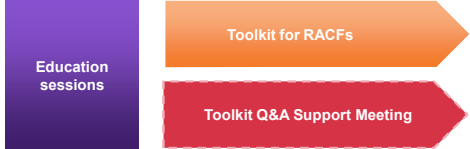



Next steps



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Anticholinergic burden activity

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Anticholinergic burden: a toolkit to improve resident outcomes in aged care facilities

Aim

- ▶ To help RACFs improve health outcomes for residents with identified anticholinergic burden, by reducing side effects such as dry mouth and constipation, and by decreasing the risk of falls due to dizziness. Reducing falls can assist with meeting quality indicators in the QI Program.

Objectives

- ▶ Raise awareness amongst RACF staff of anticholinergic burden and its impact on residents, such as increasing falls risk, cognitive impairment and other adverse effects.
- ▶ Improve current RACF processes to support a person-centred multidisciplinary approach to reduce anticholinergic burden.
- ▶ Optimise the use of non-pharmacological and pharmacological (where appropriate) alternatives to medicines with anticholinergic effects to reduce medicine-related harm in aged care residents.



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Anticholinergic burden: a toolkit to improve resident outcomes in aged care facilities

Benefits

- ▶ Improve current workflow and processes to improve resident outcomes

Content

- ▶ Identifying anticholinergic burden
- ▶ Assessing anticholinergic burden
- ▶ Managing anticholinergic burden
- ▶ Using a person-centred approach



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THANK
YOU!



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Toolkit: identifying and assessing anticholinergic burden


- ▶ Identifying residents at risk of anticholinergic burden
 - infographic of anticholinergic effects, table with examples of medicines, NPS MedicineWise resources (presentation template, online information session, webinars), guidelines for medication management, QUM services and polypharmacy in RACFs
- ▶ Assessing anticholinergic burden – existing systems, services and tools
 - Drug Burden Index (DBI) calculator, falls risk assessment tool (FRAT), guidelines for falls assessment
- ▶ Assessing anticholinergic burden - RMMRs
 - NPS MedicineWise resources (RMMR patient fact sheet), guidelines for RMMRs



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Toolkit: managing anticholinergic burden


- ▶ Deprescribing medicines with anticholinergic effects, managing withdrawal and optimising non-pharmacological options
 - examples of guidance to manage anticholinergic effects of medicines, deprescribing tools and guidelines, NPS MedicineWise resources (deprescribing patient action plan)
- ▶ Managing symptoms of anticholinergic burden (falls, constipation, dry mouth)
 - guidelines for managing falls, constipation and dry mouth



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Toolkit: using a person-centred approach

- ▶ Multidisciplinary opportunities for collaboration within RACFs (RMMRs, case conferences, QUM services, MACs)
 - toolkit Q&A support meeting, guidelines for collaboration within RACFs
- ▶ Person-centred care for aged care residents
 - NPS MedicineWise resources (Choosing Wisely 5 questions, patient decision aid, online case study), 4Ms guideline, Aged Care Quality Standards guideline



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