



Polypharmacy

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Agenda

Introduction

Current trends in Australia and our region

Implications of polypharmacy

Managing polypharmacy in a primary healthcare setting

Medications of concern /Deprescribing

Medication management reviews

Questions

Introduction

What is polypharmacy ?

-WHO defines polypharmacy as greater than 5 prescribed medications

How is this measured and assessed in Australia ?

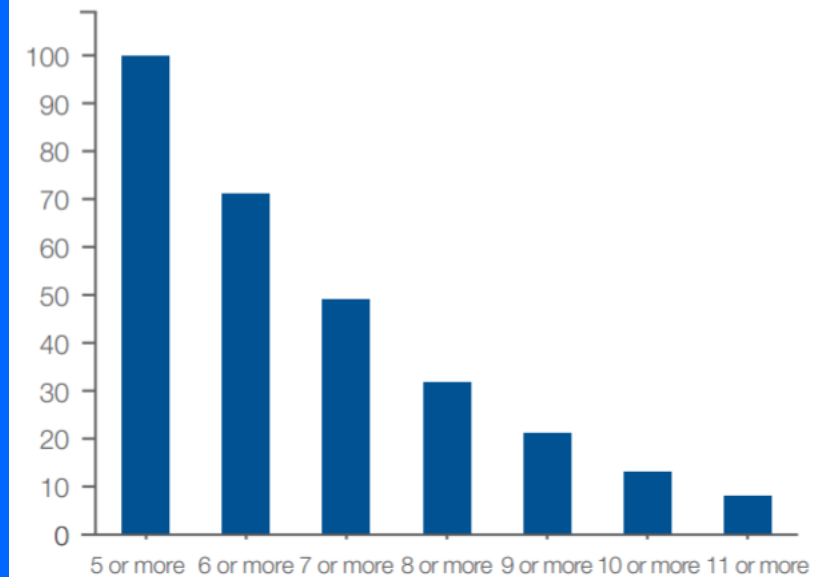
-PBS dispensing data in individuals >75 years old

-limitations to this data

Trends in polypharmacy across regions in Australia .

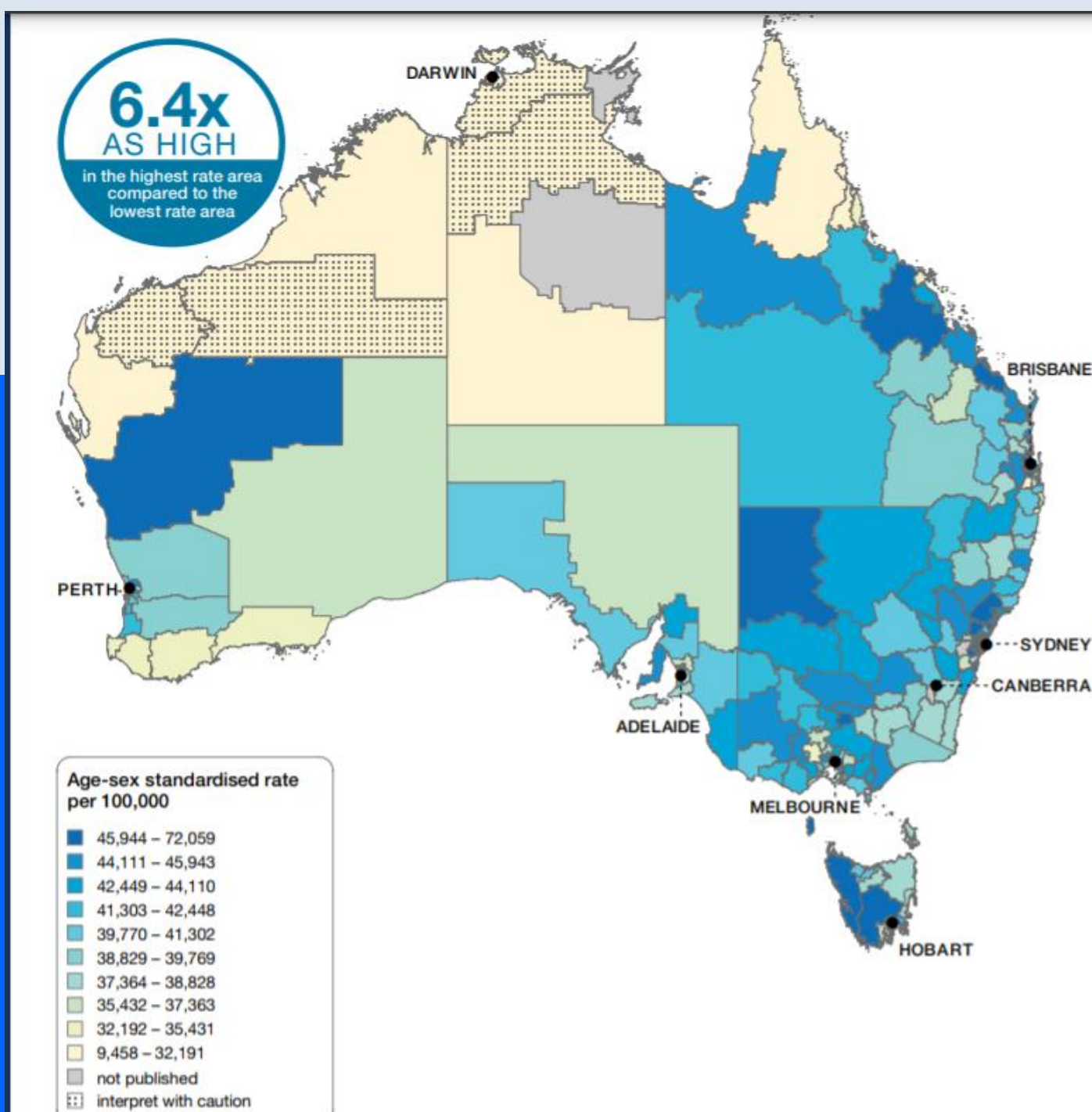
Rates of polypharmacy were higher in major cities and inner regional areas than in outer regional areas and remote areas. With the exception of remote areas, areas with the most disadvantage had the highest rates for polypharmacy compared to all other socioeconomic groups in the same remoteness

Figure 6.1: Percentage of people by the number of medicines dispensed, for patients with polypharmacy aged 75 years and over, 2018–19



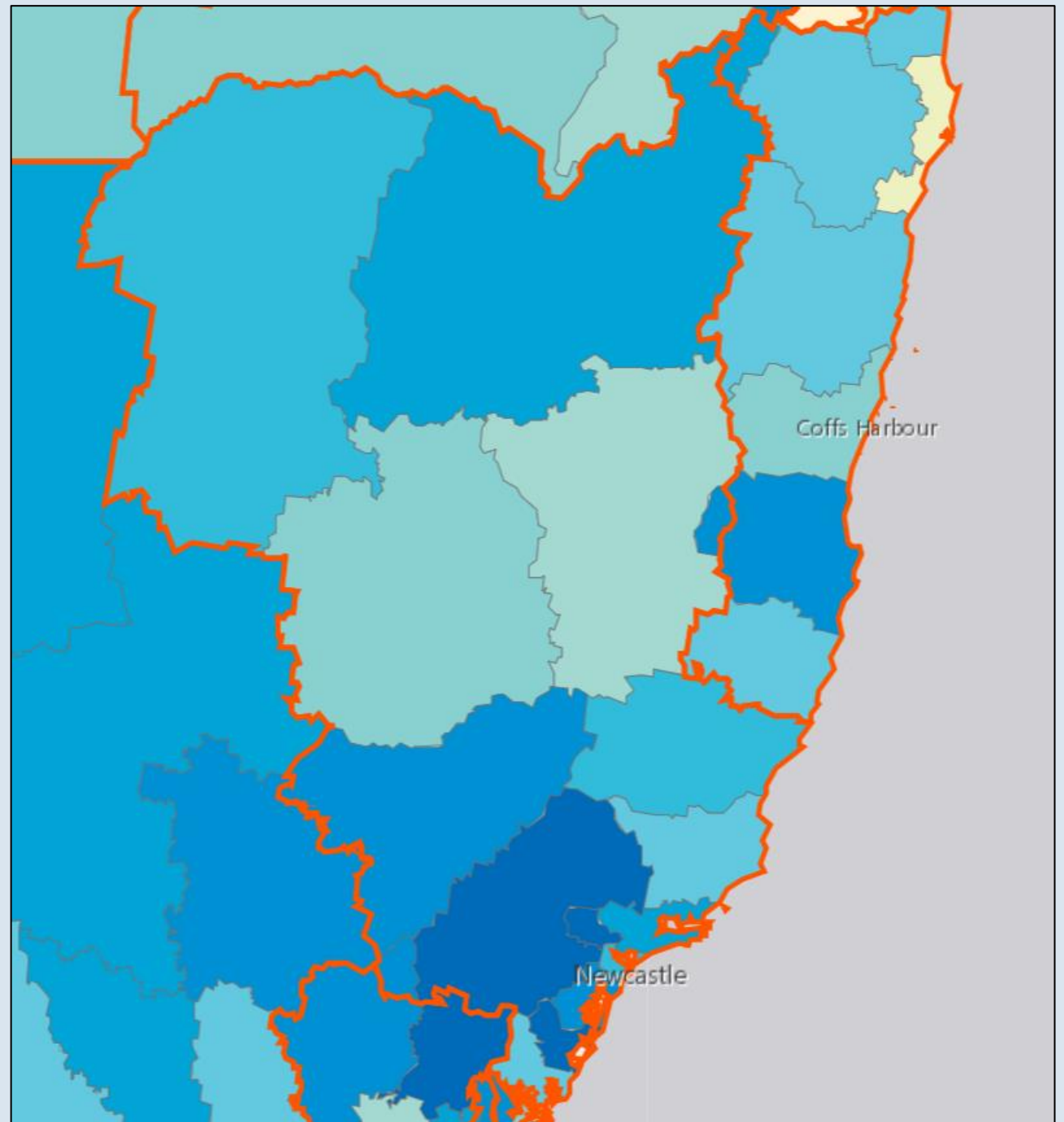
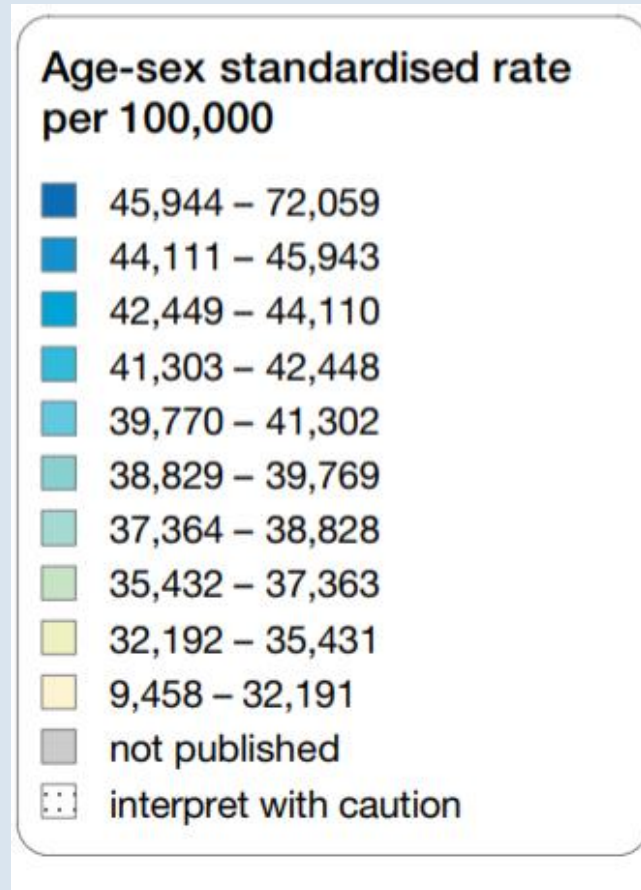
Polypharmacy

Number of people dispensed 5 or more medicines per 100,000 people aged 75 years and over, age and sex standardized, by Statistical Area Level 3 (SA3) of patient residence, 2018–19

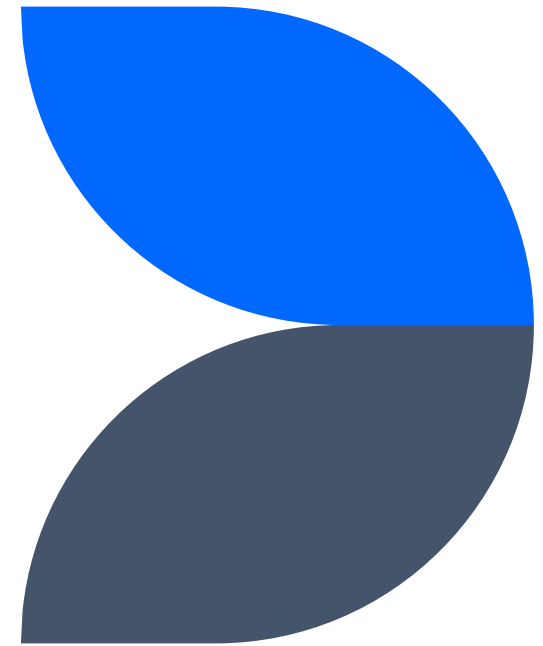


Hunter / New England / Central Coast

(rates of polypharmacy)



**What are the
implications of
polypharmacy ?**



Burden on the Australia health care system

- Current estimates suggest 2-3% of all hospital admissions are directly related to medication issues , with indirect estimates many fold higher
- This equates to approximately 250,000 to 300,000 hospital admissions per year (= \$1.4 Billion)



Risks Associated with Polypharmacy

- Increased risk of adverse drug reactions
- Drug – Drug Interactions
- Drug – Health Condition interactions
- Reduced Adherence / Compliance to prescribed medicines
- Duplication of medication / missed doses

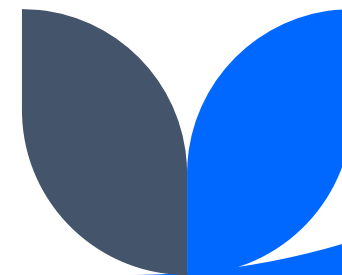
Implications of polypharmacy for the individual

- Delirium
- Falls
- Reduced quality of life
- Premature morbidity and mortality
- Hospitalization
- Cost
- Lifestyle Implications

How do we manage polypharmacy ?

This position statement from the International Group for Reducing Inappropriate Medication Use & Polypharmacy briefly summarizes the current situation and provides a call to action for moving forward, proposing 10 recommendations for action

1. **Review the medications** of all older adults with an eye to **deprescribing**, particularly those who are vulnerable to the adverse effects of medication.
2. Before initiating a potentially 'appropriate' medication, consider the validity of the evidence based on **patient characteristics and preferences**.
3. **Consider each medication for potential withdrawal**, extending beyond standardized lists.
4. Employ **mixed implicit and explicit** approaches to polypharmacy.
5. Address the **underrepresentation of older patients in clinical trials**.
6. Address **commercial influences** on polypharmacy
7. Approaches to multimorbidity should teach **prioritization skills**
8. Medical training should **review methods to stop treatments**
9. When patients have multimorbidity, the **single disease model** (and its incentivization) should be **spurned**
10. Decisions in older complex patients should routinely **consider expected survival and quality of life**, giving the highest priority to patient/family preferences.



How do we manage polypharmacy ?

Patient

- Minimize the number of prescribers (where possible)
- Consider a single pharmacy
- Use a dose administration aid or dose set box
- Keep an up to date current Medication list

Pharmacist

- Ensure any medication brand changes are highlighted
- In pharmacy Mischke Service
- Dose Administration Aid packing (Webster Pack)
- Recognizing changes in dispensing frequency

How do we manage polypharmacy ?

General Practitioner - Prescriber

- Maintaining up to date medication lists
- Ensuring documentation from other prescribers /specialists is addressed/updated in a timely manner
- Maintaining more frequent appointments with patients of concern – this may be implemented by providing reduced repeats for regular medications (3 months)
- Prescribing with active ingredients on prescriptions
- Being aware of the prescribing cascade

Reassess goals of care :

- Advanced age >80 years old
- Cancer Patients
- Palliative care
- Changes in mobility /dexterity

Review relevant drug interactions

- AusDI
- EMIMS interaction Checker

Request a medication management review

Drug Interaction Programs -eMIMS

[Add/Remove Drugs](#)

Interaction results for : Warfarin sodium

Interaction Search | **Interaction Details**

Severity Level : All Interactions | Documentation Level : All

Search Results : 375

Molecule	ROA	Interacting Molecule	ROA	Severity	Documentation Level	Adverse Effect
Warfarin sodium	systemic	Erythromycin ethyl succinate	systemic	1	Good	Roxithromycin Warfarin sodium has its effect increased by Erythromycin ethyl succinate
Warfarin sodium	systemic	Erythromycin	systemic	1	Good	Warfarin sodium has its effect increased by Erythromycin
Warfarin sodium	systemic	Erythromycin lactobionate	systemic	1	Good	Warfarin sodium has its effect increased by Erythromycin lactobionate



Warfarin sodium
vs
Erythromycin

Adverse Effect :

Warfarin sodium has its effect increased by Erythromycin

Severity Level :



Severe - The interaction between these medications may be life-threatening or may cause permanent damage. These medications are not usually used concurrently, medical intervention may be required.

Documentation Level :

Good - Although controlled studies may not have been performed, several case reports have been documented and other data strongly suggests this interaction exists.

Probable Mechanism :

Coadministration of erythromycin and coumarin anticoagulants may result in increased anticoagulant effects. Cases of elevated INR and bleeding events have been reported in warfarin- or acenocoumarol-treated patients given concomitant systemic erythromycin. A study in 12 healthy subjects showed that erythromycin decreased the clearance of warfarin by 14%. INR elevation has also been reported during concomitant ophthalmic erythromycin administration. Closely monitor patient for signs of bleeding and monitor INR upon initiation or discontinuation of erythromycin treatment. Adjust the dose of the anticoagulant as required.

Actions to be Taken :

1. Monitor patient clinically.
2. Use combination with extreme caution.
3. Monitor INR.

Warfarin sodium belongs to the class **Coumarin anticoagulants**

Coumarins are indirect-acting anticoagulants that reduce clotting factor synthesis via inhibition of vitamin K regeneration. CYP2C9 plays a major role in their metabolism.

Erythromycin belongs to the class **Erythromycin**

A macrolide antibiotic. Erythromycin is metabolised by CYP3A; there have been reports of interactions with other drugs metabolised by this enzyme.

Reference :

- Hassell D, Utt JK. Suspected interaction: warfarin and erythromycin. *South Med J* 1985; 78: (Pt 8/Aug): 1015-6.
- Parker DL, Hoffmann TK, Tucker MA et al. Elevated International Normalized Ratio associated with concurrent use of ophthalmic erythromycin and warfarin. *Am J Health Syst Pharm* 2010; 67: (Pt 1/Jan): 38-41.
- Schwartz J, Bachmann K, Perrigo E. Interaction between warfarin and erythromycin. *South Med J* 1983; 76: (Pt 1/Jan): 91-3.
- Sato RI, Gray DR, Brown SE. Warfarin interaction with erythromycin. *Arch Intern Med* 1984; 144: (Pt 12/Dec): 2413-4.

Medications of Concern

Current prescribing guidelines recognize a number of novel medications that may benefit from regular review in elderly people.

Changes in fragility ,goals of care , organ function and bodyweight result in changing drug for the patient . These may include but not limited to :

- Opioid Medications
- Benzodiazepines
- Hypnotics
- Renally Cleared Medications
- Medications with a narrow therapeutic index e.g. Digoxin , Clozapine , Sodium Valproate
- Drugs with Anti-cholinergic effects
- Antipsychotic medications

Deprescribing Guides

NSW TAG – Opioid Deprescribing

DEPRESCRIBING GUIDE FOR RE LONG-TERM OPIOID ANALGES (>3 MONTHS) IN OLDER ADULT

(including morphine, hydromorphone, fentanyl, oxycodone, buprenorphine)

This guide provides deprescribing information that can be applied to written or verbal communication (in the form of "preferred language") between patients and/or carers. This guide is adapted for older adults (>65 years). It may not apply to programs targeting drugs of dependence (e.g. methadone programs) and palliative care. Adapt appropriately for individual patients.

CONSIDER TWO STEPS
WHEN DEPRESCRIBING:

Should I deprescribe?

STEP 1: WHY SHOULD I DEPRESCRIBE?

Deprescribing triggers:

- Inappropriate indication, no current indication, presence of drug-disease interaction, high drug burden index (DBI), or need for escalating dose without adequate response, a

1a) Is there a documented indication or symptom?

Inappropriate indication for continued use:

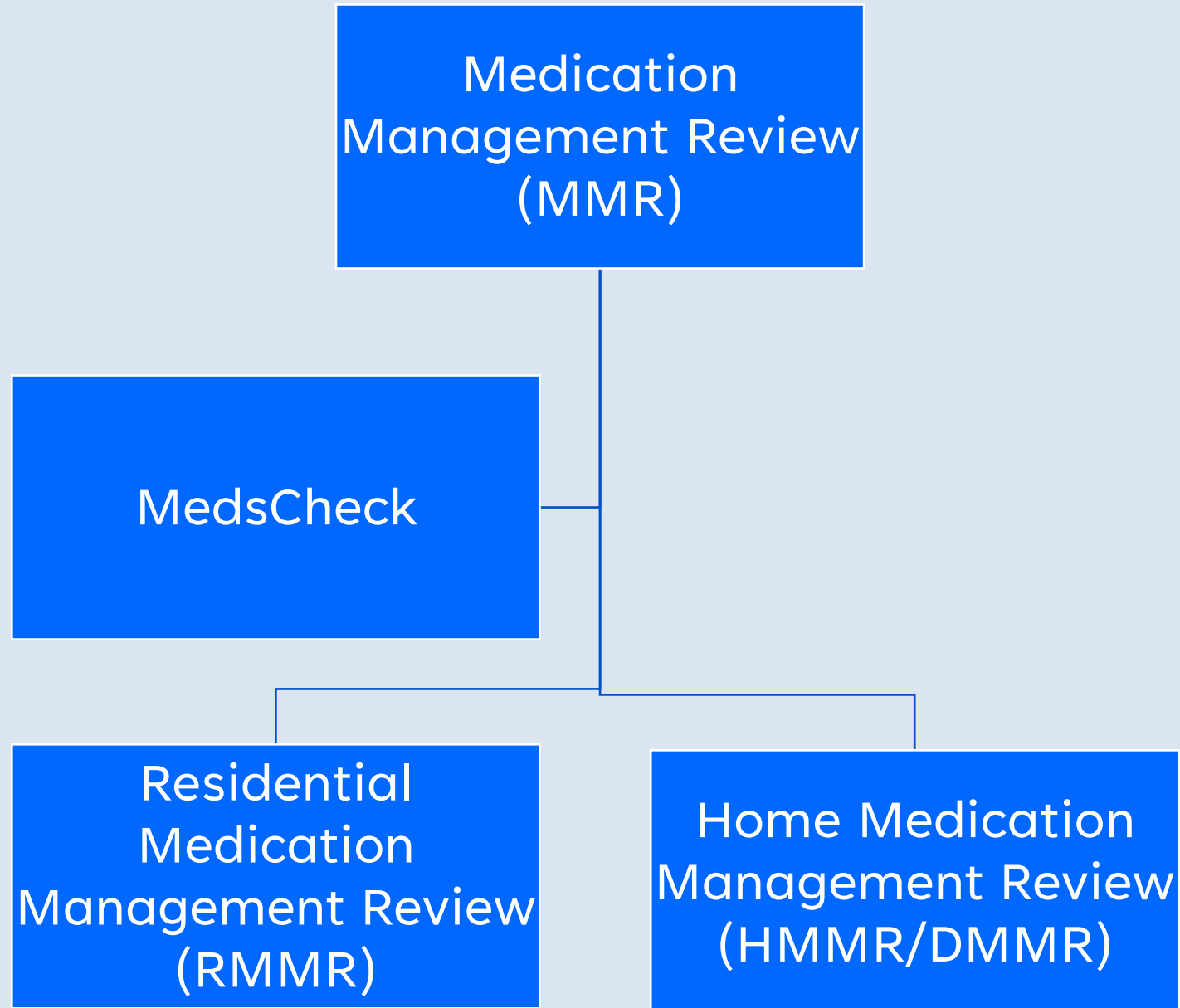
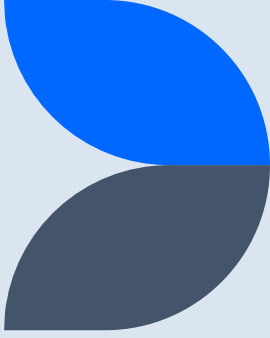
PHN – Benzodiazepine Withdrawal

CONTEXT

This guide considers the use of benzodiazepines for insomnia and anxiety. Their use in alcohol withdrawal, epilepsy and management of acute mania is not discussed.

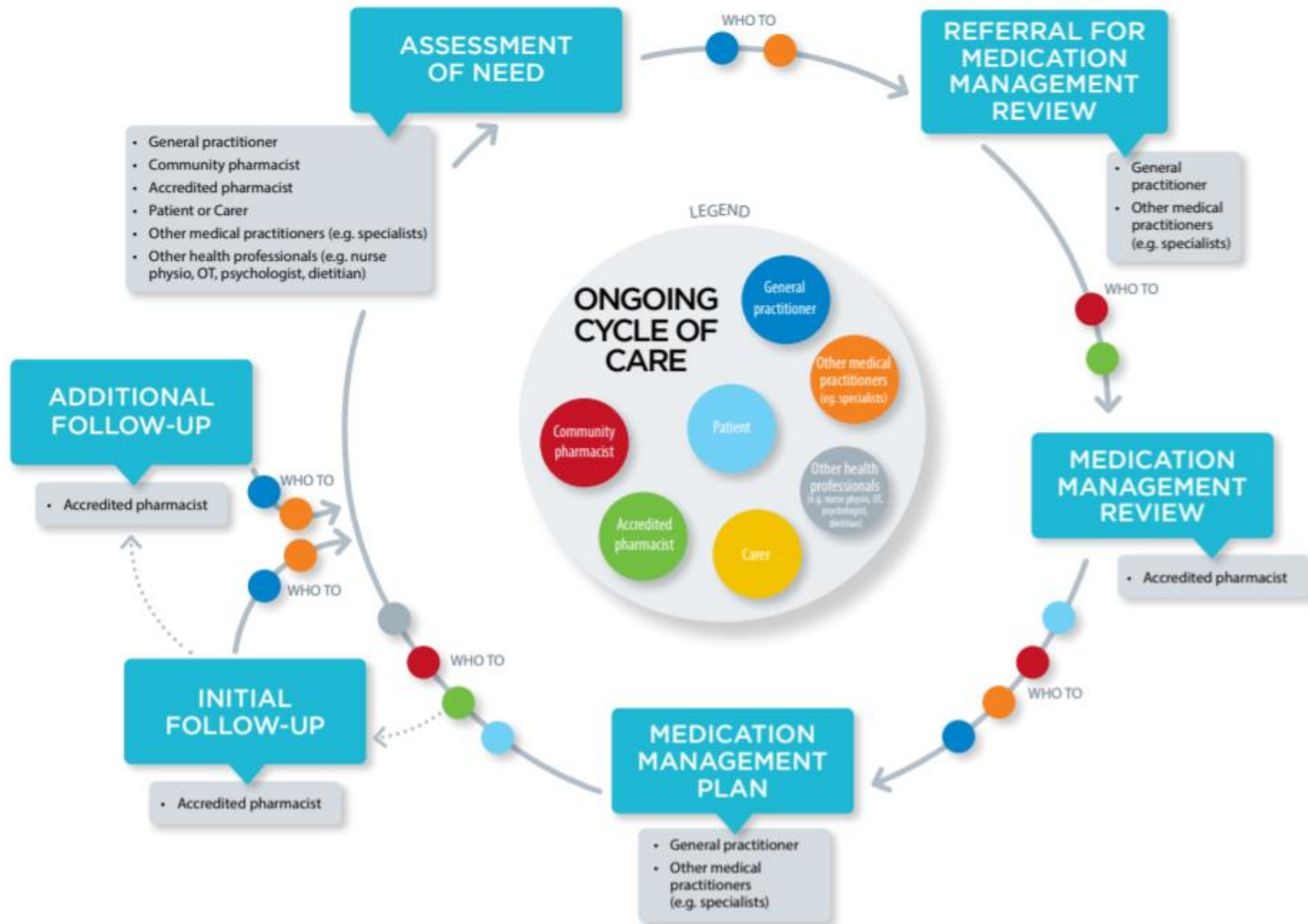
RECOMMENDED DEPRESCRIBING STRATEGY

- Any patients taking benzodiazepines with overt adverse effects (daytime sedation, cognitive impairment, falls or dependence) may benefit from dose reduction and/or cessation. A 20-25% reduction every week or two is usually well tolerated.
- Many patients taking long-term benzodiazepines will gain benefits from cessation even though they do not have overt adverse effects.
- A tapering strategy should be used for all patients, but the duration and amount of tapering is variable.
 - The majority of patients will tolerate tapering by 15-20% per step over 6-8 weeks. One option (for patients using benzodiazepines for insomnia) is to advise not taking the agent one night a week for a week (or two), two nights the next week or two, three nights the next, etc. In most patients, this strategy will enable cessation.
 - If patients develop significant intolerant withdrawal or discontinuation symptoms, a return to the previous tapering step for a longer period of time (e.g. a month) often allows for a reattempt of dose reduction.



	Location	Referral Required	Storage of Medication	Non-Prescribed Medications /Items	Report provided to GP	Education Provided to Patient	Depth of Analysis	Renumeration to GP \$	Frequency
Meds Check	Pharmacy	No	No	No	No	Some discussion	N/A	Nil	12 months
HMMR	Patients Home	Yes	Yes	Yes	Yes	In depth	In-depth	\$154	12 months ** unless deemed necessary **
RMMR	Aged Care Facility	Yes	N/A	N/A	Yes	Variable Levels	Variable	\$106	12 months ** unless deemed necessary

MEDICATION REVIEW CYCLE OF CARE



Eligibility

Home Medicines Medication Review (HMMR/DMMR)

- living in a community setting
- eligible for PBS subsidy
- with a chronic illness
- who see more than one doctor or specialist
- taking more than four regular medications (including non-prescription)
- taking 12 or more doses of medication a day or high doses of medicine
- on complicated medication regimens or having had changes made to the regime
- taking medication with a narrow therapeutic index or requiring therapeutic monitoring
- having recently been discharged from hospital
- showing signs of potential drug-induced problems or interactions
- not showing the expected response to their medication
- having difficulty managing medication or related therapeutic devices because of literacy or language difficulties, dexterity problems or impaired sight, confusion, dementia or other cognitive difficulties
- considered by a general practitioner or other medical professional as likely to benefit from the service

Residential Medication Management Review

- eligible for PBS subsidy
- Full time resident in an aged-care facility

Potential for growth in Medication Management Reviews

- Current estimations suggest that approximately 15% of all patients in a general practice setting are eligible for a Home Medication Management Review (HMMR)
- The average rate is < 0.5% indicating huge potential for increasing practice revenue whilst improving patient outcomes .
- Interprofessional collaboration between pharmacists and general practitioners is improving . E.g. General practice based pharmacist .
- Development of software to facilitate digital referral / management system to be linked through My Health Record



Thank you

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