

## FACT SHEET

### Risk factors for medication-related problems

Medicines are associated with a higher incidence of errors and adverse events than other healthcare interventions. Medication errors, adverse events and inappropriate use of medicines contribute to increased costs in health care and impact on the quality of care provided to patients.

Around 10% of patients seeing a GP have experienced an adverse medication event in the previous 6 months. Approximately 2-3% of all hospital admissions, 12% of all medical admissions and 20-30% of admissions in patients aged 65 years and over are medication-related.<sup>1</sup>

About 50% of patients with chronic disease do not take their medicines as prescribed; this is known to contribute to medication-related problems. In addition, there is a higher incidence of medication-related problems in patients who see multiple doctors, have multiple conditions and do not have a regular doctor.<sup>1</sup>

The *SHPA Standards of Practice for Clinical Pharmacy Services*<sup>2</sup> notes that clinical pharmacy services should be targeted to patients at the highest risk of medication-related problems.

Deciding which patients should receive a clinical pharmacy service and the clinical pharmacist activities they should receive, should be based on evidence and local organisational priorities.

Using a combination of risk factors listed in Table 1 could assist individual pharmacists and organisations to identify patients at greatest risk of medication-related problems to target and maximise the effectiveness of a clinical pharmacy service:

#### **Highest priority patients**

One or more risk factors from EACH of the three risk categories listed in Table 1

OR

Two or more of the patient-specific risk factors listed in Table 1

#### **High priority patients**

Two or more of the patient-group-specific risk factors AND one or more of the medicine-specific risk factors listed in Table 1

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### **Patient-specific risk factors**

**The patient has an identified or known level of risk**

- recent medication-related problem or ADR\* 2,3,4
- suspected or known to be non-adherent with their medicines\* 2,3,4
- clinically significant changes to their medicines or treatment plans within the last 3 months 2,3
- suboptimal response to treatment with medicines 2,3
- multiple presentations or admissions to hospital or healthcare organisation, or unplanned readmission with 28 days of discharge 2

### **Patient-group-specific risk factors**

**The patient belongs to a group with an identified level of risk**

- aged 65 years or older 2
- do not have a regular GP 2
- frailty ( $\geq 1$  indicators of compromised energetics: low grip strength, low energy, slowed walking speed, low physical activity, and/or unintentional weight loss) 5
- difficulty managing their medicines because of literacy or language difficulties, \* 2confusion / dementia or other cognitive difficulties, \* 2,3,4 dexterity problems, impaired sight or cannot read medicine labels\* 2,3,4
- impaired hepatic function\* 2,3
- impaired renal function (GFR < 30mL/min)\* 2,3
- multiple prescribers for their medicines 2
- problems using medication delivery devices or require adherence aid 2,3
- swallowing difficulties or medicines are altered to be administered via enteral feeding tube 6
- obese, class 2 or 3 3 (BMI > 35)
- polymorbidity\* 3
- take 5 or more medicines\* 2,3,4 or take more than 12 doses of medicines per day 2

### **Medicine-specific risk factors**

**The patient is taking a medicine with a known level of risk**

- aminoglycosides or vancomycin# 3
- anticholinergics\* 3
- anticoagulants and antithrombotics\* 3
- anticonvulsants\* 3
- benzodiazepines\* 3
- cytotoxic chemotherapy and targeted therapies (including oral medicines) # 2
- diuretics\* 3
- immune suppressing therapy 3
- insulins and / or oral hypoglycaemic medicines\* 3
- intravenous potassium # 2,3
- medicines that require therapeutic monitoring, or specific biochemistry or haematology monitoring (e.g. digoxin, clozapine)\* 2,3,4
- non-steroidal anti-inflammatory medicines (NSAIDs)\* 3
- opioid analgesics\* 3
- self-prescribed non-prescription medicines\* 3
- tricyclic antidepressants\* 3

### **Additional notes and references**

1. Australian Commission on Safety and Quality in Health Care, Literature Review: Medication Safety in Australia. ACSQHC, Sydney; 2013
2. SHPA Committee of Specialty Practice in Clinical Pharmacy. SHPA. Standards of Practice for Clinical Pharmacy Services. J Pharm Pract Res 2005; 35: 122-46
3. Kaufmann CP, Stämpfli D, Hersberger KE et al. determination of risk factors for drug-related problems: a multidisciplinary triangulation process. BMJ Open 2015; 5:e006376.doi:10.1136/bmjopen-2014-006376 (Available at <http://bmjopen.bmj.com/content/5/3/e006376.full.pdf+html>)
4. Department of Health, Pharmacy Guild of Australia. Home Medicines Review Program Specific Guidelines. Canberra; 2014
5. Gnjidic D, Hilmer SN, Blyth FM et al. High-risk prescribing and incidence of frailty among older community-dwelling men. Clinical Pharmacology and Therapeutics 2012; 91 (3): 521-528
6. Australian Pharmacy Advisory Council. Guiding principles for medication management in the community. Canberra; 2006

\* These risk factors are considered to contribute substantially to the occurrence of medication-related problems

# These medicines are not usually used in the primary care / non-admitted setting.