8.1 Percentage of older patients that are appropriately assessed for risk of harm from inappropriate polypharmacy.

Purpose

This indicator addresses the effectiveness of processes for identifying and managing inappropriate polypharmacy in older hospitalised patients.

Background and evidence

Medicines use in older people is a complex balance between managing disease and avoiding medicine-related problems. Medicine-related problems (MRPs) encompass any event involving treatment with a medicine that has a negative effect on a patient's health or prevents a positive outcome. MRPs include adverse drug reactions (ADRs) and use of inappropriate medicines, where the potential for harm outweighs the likelihood of benefit. MRPs not only significantly impact the quality of life of patients, but are costly and associated with significant burdens on the health care sector. It is estimated that in Australia during 2016 – 2017, 250,000 hospital admissions annually were a result of medication-related problems costing approximately $1.4 billion, and an additional 400,000 presentations to emergency departments were due to medication-related problems with 50% of this harm being preventable.[1] Numerous patient, clinical and medicine factors are associated with an increased risk of medicine-related problems in hospitalised patients (Table 1).[2]

Inappropriate polypharmacy in older people is common and imposes a substantial burden of adverse drug events, ill health, disability, hospitalisation and even death. The single most important predictor of inappropriate prescribing and risk of adverse drug events in older patients is the number of prescribed medicines.[3]
Given the limited resources for in-hospital medication review and the growing numbers of hospitalisations especially of older patients, there is a need to target patients thought to be at high risk of experiencing inappropriate polypharmacy or ADRs in order to prioritise timely medication-related interventions such as hospital-based medication review. Furthermore, the National Safety and Quality Health Service (NSQHS) Standards 2nd edition, requires health service organisations to have systems for managing and monitoring high-risk medicines.[4] This indicator has relevance for monitoring of hospital-acquired complications related to medication use, in particular use of antithrombotics, hypoglycaemics and respiratory depressants.[5]

Table 1: Factors associated with increased risk of medicine-related problems

Patient factors	Increasing age, recent and/or frequent hospitalisation, low socio-economic status, multiple prescribers, use of multiple pharmacies, poor English comprehension and/or health literacy
Clinical factors	Presence of renal impairment, frailty, dementia and/or polymorbidity; increased acuity of care such as admission to an intensive care unit
Medicine factors	Concurrent use of five or more medicines (polypharmacy), presence of high-risk medicines (HRMs) #; presence of 'red-flag' medicine classes^; previous ADR*

#*HRMs: High-risk medicines (also known as high-alert medicines) are those that have a high risk of causing significant patient injury or harm (including death) if they are misused or used in error. Medicines considered to be HRMs may vary between hospitals and other healthcare settings.*[4,6-8]

^*Red-flag medicine classes: these classes are commonly implicated in medicine-related hospitalisations. They include antiplatelets, anticoagulants, diuretics, non-steroidal anti-inflammatory drugs, opioids, antidepressants, renin-angiotensin system antagonists, beta-blockers, digoxin, diabetes medicines.*[9,10]

**ADR: An Adverse Drug Reaction is defined as "a response to a medicinal product which is noxious and unintended and which occurs at doses normally used in man for the prophylaxis, diagnosis or therapy of disease or for the restoration, correction or modification of physiological function". ADRs include interactions (medicine-medicine, medicine-disease, medicine-nutrient, medicine-laboratory test) and allergy or anaphylaxis.*[4,11]

Various tools to identify risk of harm from inappropriate polypharmacy are available for use in Australian hospitals; however, few categorise risk.[12] The Inappropriate Polypharmacy Risk Assessment Tool (IPRAT) developed by the NSW Therapeutic Advisory Group (TAG) can be used to stratify the degree of risk of harm from inappropriate polypharmacy and recommended actions according to risk category in the event health service organisations do not have a locally-approved tool.

Key definitions

Older patients refers to all patients aged 65 years and over.
Note: Other age definitions may be appropriate for some high risk patient groups e.g. 50 years and older for Aboriginal and Torres Strait Islander people, residents of aged care facilities or patients with low literacy skills.[13,14]

Inappropriate polypharmacy is present, when one or more drugs are prescribed that are not or no longer needed, because:

- there is no current evidence based supporting indication; OR
- they fail to achieve the therapeutic objectives they are intended to achieve; OR
- one, or the combination of several drugs cause unacceptable ADRs, or put the patient at an unacceptably high risk of such ADRs; OR
- the patient is not willing or able to take one or more medicines as intended.[14]

Appropriately assessed for risk from inappropriate polypharmacy means that there is explicit documentation in the medical record (or in another designated place as determined by local policy), of the patient's risk of harm from inappropriate polypharmacy, including the degree of risk (high, moderate or low risk) and the rationale for assigning this risk category (Table 2).

Table 2: Requirements for appropriate assessment for risk from inappropriate polypharmacy

• Documentation of the risk category assigned to the patient after using a risk assessment tool for assessing risk of harm from inappropriate polypharmacy. Facilities may use a locally approved tool. Alternatively, an example of a risk assessment tool for inappropriate polypharmacy (IPRAT) can be found here.
AND • Documented rationale for risk category: o Hospitalisation due to a medicine-related problem*; OR o A count of medicines (includes regular, when necessary medicines and any that the patient has had temporarily withheld during hospital admission); AND/OR o The names of any identified HRMs (as designated by the local authority) and their indication(s) or lack thereof. All relevant information used for categorisation should be documented. (Note: a local risk assessment tool may use or include other reasons to determine risk categorisation).
AND • Completion by one or more health care professionals trained/credentialed (according to local policy) to identify inappropriate polypharmacy;
AND • Completion by the end of the next calendar day after admission.

* For the purposes of this indicator, medicine-related problems do not include intentional overdoses.

Data collection for local use

Please refer to the section *Using the National Quality Use of Medicines Indicators for Australian Hospitals* for guidance on sample selection, sample size, measurement frequency and other considerations.

Inclusion criteria: Patients aged 65 years and over, or other ages for high risk groups as appropriate, admitted to hospital, and who have a length of stay in hospital greater than 24 hours from the time of hospital admission.

Exclusion criteria: Patients with length of stay less than 24 hours from the time of hospital admission, patients cared for in the emergency department.

Recommended data sources: Medical records, medication charts, medication management plans or reconciliation forms, if available.

As lists of HRMs may vary between health service organisations or change over time, it is recommended that prior to auditing, the auditor documents medicines against which they will audit.

The data collection tool (DCT) for NSW TAG QUM Indicator 8.1 assists data collection and provides automatic indicator calculation.

Data collection for inter-hospital comparison

This indicator may be suitable for inter-hospital comparison. In this case, definitions, sampling methods and guidelines for audit and reporting need to be agreed in advance in consultation with the coordinating agency.

Indicator calculation

$$\frac{\text{Numerator}}{\text{Denominator}} \times 100\%$$

Numerator = Number of older patients that have a documented inappropriate polypharmacy risk assessment identifying degree of risk.

Denominator = Number of older patients in sample.

Limitations and interpretation

This indicator only measures assessment at one point in time (within approximately 24 hours of hospital admission). However, preventable risk of inappropriate polypharmacy may continue or increase during hospitalisation and repeat assessment and intervention may be required.

There may be variation in the location of documented risk assessments. It is recommended that sites determine useful local data sources prior to auditing and consider collecting data about the location of documentation to inform quality improvement projects as well as future repeat auditing.

This indicator does not measure the quality of the completed risk assessment of inappropriate polypharmacy, e.g. the documentation may not accurately identify medication-related admissions or HRMs. Results should be interpreted in the context of the overall performance in reducing the risk of medicine-related problems in older hospitalised patients at the organisational level.

Collecting data regarding identified HRMs or different patient groups (e.g. patients admitted to specific wards such as geriatric wards, orthopaedic wards; or patients admitted under a specific team/specialty; or those admitted due to medication-related harm) may inform post-audit interventions (this may be documented in the 'Comments' column of the DCT).

Some performance monitoring and/or quality improvement projects may wish to include additional risk criteria or limit the patient sample e.g. patients with specific conditions, prescribed certain medication classes, or under the care of a specific specialty.

See NSW TAG QUM Indicators 8.2 *Percentage of older patients that are appropriately assessed for risk of medication-related falls* and 8.3 *Percentage of older patients that are appropriately assessed for risk of medication-related impairment of cognitive and/or physical function* for further information regarding the management of older patients at high risk of other types of medication-related harms. Available here: https://www.nswtag.org.au/qum-indicators/

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