8.4 Percentage of older patients at high risk of medication-related harms that receive a hospital-based medication review and, if applicable, a deprescribing plan.

Purpose

This indicator addresses the effectiveness of processes that ensure older patients at high risk of medication-related harms receive timely and appropriate intervention to mitigate potential medication-related harm during hospitalisation and post-discharge.

Background and evidence

Older people are at greater risk of medication harm due to the numbers of medicines they are taking for complex and often multiple medical conditions, and the reduced ability of the ageing body to metabolise and excrete medicines.[1] Hospitalised older adults are often living with, or at risk of frailty and present with acute diseases, which may increase their susceptibility to medication-related harms and intensify the severity of drug-related illnesses.[2] 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.[3] Inappropriate medicines (where the risk of harm outweighs the likely benefit for the individual patient) are a major burden to older adults and the health system and are low value health care.[4] Supervised withdrawal of inappropriate medicines (deprescribing) is safe and may improve quality of life in older people.[5]

Medications commonly implicated in medication-related harm in older patients include:

- Those designated as high risk medicines (HRMs) by local and jurisdictional policies.[6,7] HRMs commonly include anti-infectives (especially aminoglycoside antibiotics), electrolytes, all insulins, opioids, chemotherapeutic agents, anticoagulants and antipsychotic medications.[6]
- Fall-risk-increasing-drugs (FRIDs)*[8,9]
- Those which may decrease cognition and worsen confusion and/or impair physical function†[10,11]

Various interventions to reduce potentially inappropriate prescribing in older patients have been studied including medication reviews and the intervention of geriatric services.[1] Results of these studies suggest these interventions are most effective when delivered using a multidisciplinary team framework and conducted in partnership with the patient, carer or family member. The National Safety and Quality Health Service (NSQHS) Standards 2nd edition, Medication Safety Standard, requires health service organisations to have processes to perform medication reviews, enable prioritisation of medication reviews based on clinical need and minimising the risk of medication-related problems, and support documentation of medication reviews and subsequent actions.[12]

*Examples of FRIDs include antipsychotics, antidepressants, anxiolytics/sedatives, dopamine D2 agonists, opioids, anticholinergic drugs, antihistamines, anti-vertigo drugs, hypoglycaemics, beta-blocker eye drops, anti-hypertensives, anti-arrhythmics, digoxin, nitrates and other vasodilators. The AMH Aged Care Companion has a section that discusses medicines that may contribute to risk of falls. A table in the NSW TAG tool MFRAT lists common FRIDs.

†The AMH Aged Care Companion has a section that discusses medicines that may decrease cognition and worsen confusion. A table in the NSW TAG tool FUN-RAT lists common medicines associated with impairment of cognitive and/or physical function in older persons.

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]

At high risk of medication-related harms means that, due to the medications that they are on or that have been temporarily withheld, the patient has been assessed as being at high risk of adverse effects such as adverse drug reactions, falls, and impairment of cognitive and/or physical function. NSW Therapeutic Advisory Group's (TAG's) tool, *Criteria to Identify Patients at High Risk of Medication-Related Harm*, can be used to assist identification of sample patients for auditing of in the event that health service organisations do not have locally-approved tool(s) for risk categorisation of medication-related harm.

Hospital-based medication review (HBMR) is a multidisciplinary responsibility and refers to the following person-centred process:

- a comprehensive and systematic review of all a patient's regular, when necessary, complementary and over the counter medications, including those that are temporarily withheld during hospital admission;
- contains findings and recommendations to optimise the patient's medicines and outcomes of therapy (i.e. optimising effectiveness and minimising harms) and includes implementation of strategies to mitigate risk of medication-related harm such as changes in doses or dosage regimens, adherence education, initiation of deprescribing plans and/or commencement of medicines for unmet clinical needs and takes into account a patient's values and preferences;
    - documentation must include supporting evidence or rationale for any strategies recommended or implemented
- is undertaken by an *appropriate health care professional or team*. (See definition below); AND
- should be conducted during hospitalisation and documented no later than by the end of the third calendar day after hospital admission. If delayed past three days, the HBMR should be conducted at least one calendar day prior to planned hospital discharge.[12,15]

The findings and recommended actions from the HBMR, that may include initiation of a deprescribing plan, must be explicitly documented in the medical record or in another designated place as determined by local policy. If there are no findings and recommendations to be made as a result of the HBMR, this must be explicitly stated.

HBMRs may use telehealth platforms e.g. video, telephone or review of scanned/electronic medical record documents to obtain necessary information and appropriate health care professional involvement (see below).

In the event that a HBMR cannot be undertaken, a post-discharge medication review recommendation or referral should occur (See NSW TAG QUM Indicator 8.5 and further reading below). In some circumstances, both hospital-based and post-discharge medication reviews may be appropriate.

Appropriate health care professional or team for medication review refers to:

- A geriatric, general medicine or clinical pharmacology team, or other medical practitioner as determined by local policy; OR
- An HBMR-approved pharmacist**:** a pharmacist who has been endorsed by the Director of Pharmacy (or delegate) as having appropriate expertise and/or experience to conduct aged care HBMRs.

Deprescribing plan describes documented guidance on how to withdraw (wean or cease) any inappropriate medicines identified from the hospital-based medication review under the supervision of a health care professional with the goal of managing polypharmacy and improving outcomes.

The deprescribing plan should:

- take into account the patient's preferences and document their agreement with the plan.
- be clearly and consistently documented in the patients' medical record (as per local policy) with appropriate amendments on the patient's medication chart.
- be documented in the discharge summary (including any amendments already made to the medication regimen) and medicine list to ensure continuity of care.

Resources to support implementation of deprescribing plans including guides and consumer information leaflets are available via:
http://www.nswtag.org.au/deprescribing-tools/.

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 for greater than 24 hours who are at high risk of medication-related harm.

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, hospital-based medication reviews, and discharge documentation such as the discharge summary and patient's medication list.

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

The data collection tool (DCT) for NSW TAG QUM Indicator 8.4 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 at HIGH risk of medication-related harms that have a documented hospital-based medication review and, if appropriate, a deprescribing plan.

Denominator = Number of older patients at HIGH risk of medication-related harms in sample.

[‡]Australian accreditation bodies: the Australian Association of Consultant Pharmacy (AACP) and The Society of Hospital Pharmacists of Australia (SHPA).

Limitations and interpretation

Formal medication reconciliation processes that include obtaining a best possible medication history (BPMH), are essential in providing the optimal platform for a patient-centred and accurate HBMR. In some instances, these processes may be completed at the same time as an HBMR.

There may be patients not categorised as high risk of medication-related harm (e.g. at moderate or low risk of medication-related harm or those with social or other risk factors) who may still benefit from an HBMR. Health service organisations may also wish to measure recommendations and outcomes for HBMR in these patients.

Other interventions for individual patients apart from medication review may be implemented to reduce medication-related harm such as dose administration aids. Health service organisations may also wish to measure these interventions in addition to medication review provision.

Criteria for appointment as an HBMR-approved pharmacist may vary between health service organisations. The following is a suggested framework that could be used to demonstrate appropriate expertise and/or experience:

- current accreditation to conduct home medicines reviews from an approved accreditation body[‡];
- number of years of experience in aged care;
- assessed as competent to undertake hospital-based medication review by a Clinical Competency Assessment Tool (ClinCAT)[§] assessment; and/or,
- number of continuing professional development (CPD) activities in aged care in recent past.

This indicator does not measure the quality of the completed HBMR. Results from this indicator 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.

There may be variation in the location of documented HBMRs. Some organisations may have documentation templates or handover tools locally developed to record useful patient information, such as organisational programs or reports identifying hospital readmissions or other high risk patient cohorts. 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 as well as any future repeat auditing.

[§]**Clin**ical **C**ompetency **A**ssessment **T**ool: a competency framework that supports Australian pharmacists training and development. It includes activities defined by national standards of clinical pharmacy practice that may be expected of a pharmacist practising at the general level. https://www.shpa.org.au/shpa-clincat

Collecting data for 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.

It is recommended that this indicator be read and measured in conjunction with NSW TAG QUM Indicator 8.5 *Percentage of older patients at high risk of medication-related harms with a recommendation for a post-discharge medication review, when hospital-based medication review is not performed*. Furthermore, it may be desirable for health service organisations to consider measurement of indicators 8.1, 8.2 and 8.3 at the same time as indicators 8.4 and 8.5 to demonstrate the systematic process of optimal medicines management of older patients.

See NSW TAG QUM Indicators 8.1 to 8.3 (Assessing risk of medication-related harms) and 8.6 and 8 .7 (Discharge procedures/actions for patients at high risk of medication-related harms) for further information regarding the management of older patients at high risk of medication-related harms.
Indicators available here:
https://www.nswtag.org.au/qum-indicators/

Further reading

Health services may be using a local tool or a published tool such as the Clinical Excellence Commission's Guide to Medication Review. This resource provides health service organisations and clinicians with processes to develop and perform medication reviews for patients. The Guide is intended to form a basis for a common understanding of medication review and provides guidance on best practice.[16] The World Health Organisation also provides a step-by-step approach to conducting a patient-centred medication review.[4]

The Department of Health Medication Management Reviews business rules for Home Medicines Review (HMR) and Residential Medication Management Review (RMMR) services may apply for post-discharge medication reviews.[17] See also The Society of Hospital Pharmacists of Australia's (SHPA's) *Hospital-initiated medication reviews (HIMR): Hospital pharmacy practice update* for a framework of medication review pathways.[18]

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