Continuity of care

5.2 Percentage of patients with systolic heart failure that are prescribed appropriate medicines at discharge

Purpose

This indicator addresses the effectiveness of processes that promote appropriate pharmacotherapy for systolic heart failure (HF).

Background and evidence

Medication is the foundation of evidence-based HF management. Angiotensin converting enzyme inhibitors (ACEIs) or angiotensin receptor antagonists (ARAs) and beta-blockers increase survival, reduce hospitalisations and improve symptoms in patients with systolic HF when taken according to recommendations.[1-4] However, gaps in applying HF treatment guidelines have been demonstrated in Australia.[5-7] A similar issue has been demonstrated in international studies.[8-9] The prescription of ACEIs/ARAs and beta-blockers at discharge from hospital has been shown to improve patient mortality and morbidity.[10]

ACEIs, unless not tolerated or contraindicated, are recommended for all patients with systolic HF whether symptoms are mild, moderate or severe. ARAs may be used as an alternative in patients who do not tolerate ACEIs due to kinin-mediated adverse effects (e.g. cough).[1-4] Selected beta-blockers are recommended, unless not tolerated or contraindicated, for all patients with systolic HF who remain mildly to moderately symptomatic despite appropriate doses of an ACEI.[1-4]

Ensuring appropriate medication management after discharge is a guiding principle of the Australian Pharmaceutical Advisory Council Guiding Principles to Achieve Continuity in Medication Management.[11] This indicator provides a measure of compliance with these guidelines.

Key definitions

Systolic heart failure refers to a weakened ability of the heart to contract in systole, and is the most common type of chronic HF. It is diagnosed with a finding of a left ventricular ejection fraction (LVEF) of less than 40% on echocardiography.[1] Patients should have documentation of either their HF type or their LVEF in their discharge summary, so that the specific diagnosis is clear to ongoing care providers. For the purposes of this indicator, patients with no documentation of HF type or LVEF in their discharge summary are assumed to have systolic heart failure.

Appropriate medicines means the patient is discharged on either an ACEI or ARA and a beta-blocker. Examples of suitable medicines from each class are shown in Table 1. If one or more of these medicine classes is not prescribed for the patient on discharge then the medication regimen can only be deemed as "appropriate" if there is a documented reason in the patient's discharge summary for omission of that class of medicine, such as a contraindication, allergy or a documented plan to initiate that class of medicine in the future.

At discharge means there is documentation in the discharge summary or letter at time of transfer to community, residential care or other hospital that these medicines are to be taken on an ongoing basis. A supply of the medicines may or may not be dispensed by the hospital.

Table 1. Appropriate medicines: medicine classes and examples

Medicine class	Examples of appropriate medicines available in Australia
ACEIs*	captopril, enalapril, fosinopril, lisinopril, perindopril, quinapril, ramipril, trandolapril
OR	OR
ARAs*	candesartan, eprosartan, irbesartan, losartan, olmesartan, telmisartan, valsartan
Beta-blockers	bisoprolol, carvedilol, metoprolol (extended release formulation), nebivolol**

* Although not all agents have been studied in HF patients the clinical effects of the agents within each drug class are generally considered to be similar.[12] Most HF guidelines do not distinguish between specific ACEIs or specific ARAs despite variations in approved (licensed) indications in Australia.[1-4,12,13]

** Nebivolol may be considered an appropriate beta-blocker in patients aged 70 years or older.[1]

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 18 years and over with either a principle or secondary diagnosis of HF (according to ICD coding).

Exclusion criteria: Patients with diastolic HF or LVEF >40% documented in the discharge summary; patients receiving clinical trial medicines; patients discharged against medical advice; and patients receiving palliative/end of life care.

Recommended data sources: Discharge referral documentation.

The data collection tool for QUM Indicator 5.2 assists data collection and 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 patients with systolic HF that are prescribed appropriate medicines at discharge

Denominator = Number of patients with systolic HF in sample

Limitations and interpretation

This indicator looks at a bundle of care, not individual medicines. However it is recommended that individual components of the indicator are also collected to inform post-audit interventions.

All patients with suspected HF should undergo an echocardiogram to determine the HF type and guide management.[1] The patient's LVEF or HF type should be clearly documented in the discharge summary to inform the patient's ongoing management plan. Effective communication during transitions of care is a critical component of continuity in medication management.[11] Furthermore, under-use of echocardiography is recognised as a gap in the current management of HF patients in Australia.[1] Therefore this indicator assumes that where an HF type or LVEF has not been explicitly documented, the type of HF has not been determined. It is recommended that the rate of undocumented LVEF or HF type is recorded to inform post-audit interventions. It may also be informative to look at the data on medicine use in patients with documented systolic HF separately from those with undocumented HF type.

This indicator does not assess appropriate therapy in patients with HF with preserved systolic function (LVEF >40%) for which there is no conclusive data regarding the efficacy of any medicine class.[1] This indicator does not take into consideration evidence-based dosing of the individual medicines.

Further information

Medication Safety Self Assessment for Australian Hospitals[14] (MSSA) can help identify potential strategies for improvement with this and other indicators. MSSA encourages development of robust systems for safe prescribing, dispensing, administration and monitoring of medicines. MSSA is available at **www.cec.health.nsw.gov.au**

This indicator can be used to assist hospitals in meeting the National Safety and Quality Health Service Standard 1 [items 1.2.1, 1.2.2, 1.5.2, 1.6.1, 1.6.2, 1.7.2] and Standard 4 [items 4.1.2, 4.2.2, 4.5.1, 4.5.2, 4.12.4].[15]

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