

## 5.1 Percentage of patients with acute coronary syndrome that are prescribed appropriate medications at discharge

### Purpose

This indicator addresses the effectiveness of processes that promote appropriate pharmacotherapy for secondary prevention of acute coronary syndromes (ACS).

### Background and evidence

Indicators of appropriate management of ACS have previously been used in Australian hospitals<sup>1-3</sup> and general practice.<sup>4</sup> There is high level evidence supporting the use of anti-platelet (or anticoagulant), beta-blocker and statin medications for secondary prevention of coronary heart disease.<sup>5,6</sup> Improving management of patients with ACS, including appropriate ongoing medication management, has been associated with reduced mortality.<sup>7,8</sup> However, despite widespread evidence, many patients admitted with ACS are not discharged on appropriate medications.<sup>1,8</sup>

Ensuring appropriate medication management after discharge is a guiding principle of the Australian Pharmaceutical Advisory Council *Guiding principles to achieve continuity in medication management*.<sup>9</sup> This indicator provides a measure of compliance with these guidelines.

### Key definitions

**Acute coronary syndrome** refers to the following groups of conditions:<sup>5</sup>

- ST-segment-elevation myocardial infarction (STEMI)
- Non-ST-segment-elevation acute coronary syndrome (NSTEMI)
- Unstable angina pectoris (UAP)

**Appropriate medications** means patients are discharged on one of the medications from each of the following three classes of drugs:<sup>5,10</sup>

Drug Class	Medications currently available in Australia
Anti-platelet agents	aspirin, clopidogrel, ticlodipine
OR	OR
Anticoagulants	warfarin
Beta-blockers	atenolol, metoprolol, propranolol OR carvedilol, bisoprolol, metoprolol (extended release)
Statins	atorvastatin, fluvastatin, pravastatin, rosuvastatin, simvastatin

**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 medications are to be taken on an ongoing basis. A supply of appropriate medications may or may not be dispensed by the hospital.

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## Data collection for local monitoring

**Recommended sample selection:** A random sample of records of patients admitted with ACS over a one month period. Patients who were electively admitted for coronary artery bypass grafting should be included. Random means each patient has an equal chance of inclusion in the audit.

**Recommended sample size:** Based on international work<sup>11</sup> the following sample sizes are recommended:

Average no. of ACS patients / month	Minimum sample size required / month
516 or more	104
131-515	20% of patients admitted with ACS
26-130	26
Less than 26	Collect data on all ACS patients

**Recommended methodology:** Review of medical records including discharge documentation.

## 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 ACS who are prescribed appropriate medications at discharge

**Denominator** = Number of patients with ACS in sample

## References

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4. Indicators of Quality Prescribing in Australian General Practice: National Prescribing Service, 2006.
5. Acute Coronary Syndrome Guidelines Working Group. Guidelines for the management of acute coronary syndromes 2006. *Medical Journal of Australia* 2006; 184:S9-29.
6. Smith SC, Jr., Allen J, Blair SN, et al. AHA/ACC guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease: 2006 update: endorsed by the National Heart, Lung, and Blood Institute. *Circulation* 2006; 113:2363-72.
7. Bradley EH, Herrin J, Elbel B, et al. Hospital quality for acute myocardial infarction: correlation among process measures and relationship with short-term mortality. *The Journal of the American Medical Association* 2006; 296:72-78.
8. Peterson ED, Roe MT, Mulgund J, et al. Association between hospital process performance and outcomes among patients with acute coronary syndromes. *The Journal of the American Medical Association* 2006; 295:1912-20.
9. Guiding principles to achieve continuity in medication management: Australian Pharmaceutical Advisory Council, 2005:1-55.
10. Australian Medicines Handbook: Australian Medicines Handbook Pty Ltd, 2007.
11. Specifications Manual for National Hospital Quality Measures (Specifications Manual) version 2.3: Centers for Medicare & Medicaid Services (CMS) and The Joint Commission, 2007.
12. Medication Safety Self Assessment for Australian Hospitals: Institute for Safe Medication Practices (Adapted for Australian use by the NSW Therapeutic Advisory Group and the Clinical Excellence Commission), 2007.

## Limitations and interpretation

This indicator looks at a bundle of care, not individual medications. It does not examine whether patients are discharged on angiotensin converting enzyme inhibitors (ACEIs) or angiotensin II receptor antagonists (ATRAS), which are considered optional in patients who don't have: reduced left ventricular ejection fraction; hypertension; diabetes; or chronic kidney disease.<sup>6</sup> The importance of ACEIs or ATRAS in managing secondary prevention of ACS is acknowledged and should not be neglected.

This indicator does not consider contraindications to these medications. Data from the NSW Towards a Safer Culture<sup>3</sup> project from 2004-2006 shows contraindications to these medications are uncommon. No medication had a mean annual rate of contraindications greater than 2% [Personal communication, Cate Ferry, Project Leader TASC Program, 26/4/07]. Therefore it would be reasonable to expect at least a 95% compliance rate with this indicator.

This indicator does not consider the use of combined therapy with aspirin and clopidogrel which may be appropriate in some patients.

This indicator excludes patients with ACS who presented to the emergency department with UAP but were not admitted. Nevertheless, the need for appropriate ongoing medication management for these patients should not be neglected.

## Further information

The *Medication Safety Self Assessment for Australian Hospitals*<sup>12</sup> (MSSA) can help identify potential strategies for improvement with this and other indicators. The MSSA encourages development of robust systems for safe prescribing, dispensing, administration and monitoring of medications. The MSSA is available at [www.cec.health.nsw.gov.au](http://www.cec.health.nsw.gov.au)