

National Hospital Quality Measures Acute Myocardial Infarction (Heart Attack)

(AMI-1) Aspirin at Arrival

Description: Acute myocardial infarction (AMI) patients without aspirin contraindications who received aspirin within 24 hours before or after hospital arrival.

Rationale: Early treatment with aspirin, whether alone or in conjunction with reperfusion, markedly reduces mortality from AMI. Accordingly, aspirin now plays an important role in the early management of all patients with suspected AMI and should be administered promptly.

(AMI-2) Aspirin Prescribed at Discharge

Description: Acute myocardial infarction (AMI) patients without aspirin contraindications who are prescribed aspirin at hospital discharge.

Rationale: The long-term use of aspirin after AMI confers a significant reduction in mortality, non-fatal re-infarction, and non-fatal stroke.

(AMI-3) ACEI or ARB for LVSD

Description: Acute myocardial infarction (AMI) patients with left ventricular systolic dysfunction (LVSD) and without both angiotensin converting enzyme inhibitor (ACEI) and angiotensin receptor blocker (ARB) contraindications who are prescribed an ACEI or ARB at hospital discharge. For purposes of this measure, LVSD is defined as chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular systolic (LVS) function consistent with moderate or severe systolic dysfunction.

Rationale: ACEI therapy reduces mortality and morbidity in patients with left ventricular systolic dysfunction (LVSD) after AMI (Flather, 2000; Pfeffer, 1992; Torp-Peterson, 1999; and Yusuf, 2000). Recent clinical trials have also established ARB therapy as an acceptable alternative to ACEI, especially in patients with heart failure and/or LVSD who are ACEI intolerant (Granger, 2003 and Pfeffer, 2003). National guidelines strongly recommend ACEI for patients hospitalized with AMI who have either clinical heart failure or LVSD (Antman, 2004 and Braunwald, 2002). Guideline committees have also supported the inclusion of ARBs in performance measures for AMI (Antman, 2004). Despite these recommendations, ACEIs remain under-utilized in eligible older patients hospitalized with AMI (Jencks, 2000).

(AMI-4) Adult smoking cessation advice/counseling

Description: Acute myocardial infarction (AMI) patients with a history of smoking cigarettes, who are given smoking cessation advice or counseling during hospital stay. For the purposes of this measure, a smoker is defined as someone who has smoked cigarettes anytime during the year prior to hospital arrival.

Rationale: Smoking cessation is essential in patients with AMI. Smoking triggers coronary spasm, reduces the anti-ischemic effects of beta blockers, and doubles mortality after AMI. Patients who receive even brief smoking-cessation advice from their physicians are more likely to quit than those who receive no counseling at all. Hospitalization can be an ideal opportunity for a patient to stop smoking, and smoking cessation may promote the patient's medical recovery.

(AMI-5) Beta blocker prescribed at discharge

Description: Acute myocardial infarction (AMI) patients without beta blocker contraindications who are prescribed a beta blocker at hospital discharge.

Rationale: The use of beta blockers in post-myocardial infarction is associated with a lower risk of long-term morbidity and mortality. In spite of the documented benefits of these agents, there is evidence of substantial under-use in appropriate patients nationwide.

(AMI-6) Beta blocker at arrival

Description: Acute myocardial infarction (AMI) patients without beta blocker contraindications who received a beta blocker within 24 hours after hospital arrival.

Rationale: Beta blockers administered to patients with AMI during the initial hours of presentation reduce morbidity and/or mortality. Immediate administration of beta blocker therapy appears to reduce the magnitude of infarction and associated complications in subjects not receiving concomitant thrombolytic therapy. Beta blockers also reduce the rate of reinfarction in patients receiving thrombolytic therapy. Results from the National Cooperative Cardiovascular Project demonstrate that beta blockers are substantially underutilized nationwide.

(AMI-7) Time to thrombolysis

Description: Mean time from arrival to administration of thrombolytic agent in patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to hospital arrival time.

Rationale: The timing of reperfusion is critical to the effective management of patients with AMI. Patients presenting with AMI and ST segment elevation or LBBB are at relatively high risk of death. This risk may be reduced by thrombolytic therapy, but only if it is administered in a timely manner. Delays in the administration of thrombolytic agents may reflect a wide range of factors including misdiagnosis at presentation, flaws in institutional structures, or factors beyond the control of the caregiver.

(AMI-7a) Thrombolytic agent received within 30 minutes of hospital arrival

Description: Acute myocardial infarction (AMI) patients receiving primary thrombolytic therapy during the hospital stay with a time from hospital arrival to thrombolysis of 30 minutes or less.

Rationale: Time to thrombolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1000 patients are lost per hour of delay (Fibrinolytic Therapy Trialists' (FTT) Collaborative Group, 1994). National guidelines recommend that thrombolytic therapy be given within 30 minutes of hospital arrival in patients with ST elevation myocardial infarction (Ryan, 1999).

(AMI-8) Time to PCI

Description: Mean time from arrival to percutaneous coronary intervention (PCI) in patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to hospital arrival time.

Rationale: The timing of reperfusion is critical to the effective management of patients with AMI. Patients presenting with AMI and ST segment elevation or LBBB are at relatively high risk of death. This risk may be reduced by PCI, but only if it is performed in a timely manner. Delays in the implementation of PCI may reflect a wide range of factors including misdiagnosis at presentation, flaws in institutional structures, or factors beyond the control of the caregiver.

(AMI-8a) PCI received within 90 minutes of hospital arrival

Description: Acute myocardial infarction (AMI) patients receiving primary percutaneous coronary intervention (PCI) during the hospital stay with a time from hospital arrival to PCI of 90 minutes or less.

Rationale: The early use of primary angioplasty in patients with acute myocardial infarction who present with ST-segment elevation or LBBB results in a significant reduction in mortality and morbidity. The earlier primary coronary intervention is

provided, the more effective it is (Brodie, 1998). National guidelines recommend initiation of PCI within 90 minutes after hospital arrival inpatient with ST elevation myocardial infarction (Ryan, 1999). Despite these recommendations, few older patients hospitalized with AMI receive primary angioplasty within a timely manner (Jencks, 2000).

