



## AMIs Diagnosed Late or Occurring Later into the Hospitalization

Updated: April 2010

---

**Question:** Why don't the AMI measures, like those for pneumonia, use the working diagnosis? What happens if a patient presents with atypical symptoms and is initially treated as having a disease other than MI? The initial treatment is appropriate for the patient's presumptive diagnosis, but the correct diagnosis, AMI, is not made until later in the stay. Shouldn't the early ASA measure account for such cases and exclude them?

**Answer:** The AMI measures and data collection do not use a working diagnosis primarily because of the difficulty in abstracting the working diagnosis of AMI and ascertaining the time at which the appropriate diagnosis was made in a valid manner using retrospective chart review. Cases in which an AMI was diagnosed later in the stay and then listed as the principal diagnosis will be included in the early ASA measure. In data collection, abstractors need to answer questions regardless of the timing of the diagnosis.

The clinical issue underlying the approach used in constructing the AMI measures is the importance of timely diagnosis and treatment of AMI. Excluding patients whose diagnosis was not initially recognized would leave out a population for whom more prompt diagnosis and treatment would have been appropriate. When such cases are identified, providers should take the opportunity to identify any process issues that might have contributed to the untimely diagnosis and work to resolve them.

Of note, if physicians, advanced practice nurses (APNs), physician assistants (PAs), or pharmacists document any reason for not prescribing aspirin on arrival, including notation that they did not give aspirin within 24 hours because the AMI diagnosis was not yet confirmed, such cases will be excluded from the measure.

These policy decisions regarding measure construction were made jointly by CMS and The Joint Commission. It is acknowledged that to some degree, misclassifications are unavoidable in any measure. Measures must be clinically valid and cannot require an excessive burden of abstraction. In this case, the clinical concern about delays in diagnosis and treatment of AMI, as well as the difficulty in ascertaining the information that would be necessary to consider changes in diagnosis from abstraction, motivated the current specifications for the early ASA measure.

**Question:** If an AMI occurs after a patient arrives at the hospital, are we held to the arrival time for the aspirin on arrival measure?

**Answer:** In this case, if the principal diagnosis is coded as an AMI, the patient will be included in the population and will be a candidate for the early aspirin measure based on arrival time. Like many other projects, the AMI project relies on the accuracy of coding for sample inclusion.

## CASE SCENARIOS

**Scenario 1:** Nursing home patient presents with mental status changes and undergoes an emergent head CT. ECG done in ED on return from scan suggests AMI, and the patient is subsequently admitted.

**Response:** If the principal diagnosis is coded as an AMI, then the patient will be included in the measure. If ASA is not given within 24 hours after hospital arrival in this case, and the physician, APN, PA, or pharmacist documents a reason for non-administration (e.g., "No ASA. Suspect intracranial hemorrhage"), the case will be excluded.

---

**Scenario 2:** Patient's ECG shows AMI, but patient has no symptoms suggestive of MI.

**Response:** AMI may present with atypical symptoms or with a relative paucity of symptoms. If the principal diagnosis is coded as an AMI, the patient will be included in the measure. ECG findings in this case make early ASA administration appropriate.

---

**Scenario 3:** A patient presents to the ED with nausea, chest discomfort, or other vague complaints. The ECG is negative, and blood work is unremarkable. The patient is admitted with a diagnosis of cholecystitis. Twenty-seven hours later, cardiac enzyme levels are found to be elevated and the ECG shows ST-segment elevations; a diagnosis of AMI is assigned. In such a case, ASA within 24 hours was not prescribed because the AMI was not diagnosed within that time frame.

**Response:** If the initial ECG is negative, the biomarkers are negative, and the symptoms are not classic, this patient probably did not have an MI on arrival but, rather, developed an MI later in the hospitalization. Troponin should be positive within 6 hours and CK within 12 hours. An elevated CK level at 27 hours suggests that an MI developed subsequently; nevertheless, if an AMI is coded as the principal diagnosis, the case will be included.

---

*This material was prepared by Oklahoma Foundation for Medical Quality, the Medicare Quality Improvement Organization for Oklahoma, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. 4-1021-OK-0410*