Red Flags for Myocardial Infarctions Coding and CDI

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As many HIM professionals know, there are substantial "red flag" terms related to coding myocardial infarctions (MIs) and non-MI troponin elevation, which can cause considerable challenges for providers, coding professionals, and clinical documentation improvement (CDI) staff. Coding accuracy related to MI diagnosis affects a multitude of areas, including:

- Centers for Medicare and Medicaid Services quality claims-based measures
- Public health data tracking
- Physician comparisons
- Reimbursement
- Patient outcomes

With the release of the fourth universal definition of MIs and the implementation of type-specific MI codes released in October 2017, it has become increasingly important to have Type 1 MI, Type 2 MI, and Non-MI troponin elevation documented appropriately.[1] Vague or conflicting terms in documentation such as demand ischemia, demand mismatch, and troponin leak are common.

These statements cause confusion for CDI and coding professionals. Code accuracy is reliant on the appropriate documentation by providers, but it is also dependent on coding and CDI professionals understanding the clinical differences between Type 1 MI, Type 2 MI, and Non-MI troponin elevations. The article "Translating the Fourth Universal Definition of Myocardial Infarction into Clinical Documentation: Ten Pearls for Frontline Clinicians"[2] gives clinical insight into the distinct differences between diagnoses.

Type 1 MI (STEMI, NSTEMI)

A Type 1 MI (acute STEMI and NSTEMI) is defined by infarction due to a coronary thrombus or plaque rupture/erosion. The documentation of STEMI and NSTEMI should be supported by the underlying etiology. Patients having a Type 1 MI should exhibit symptoms of ischemia (chest pain or other angina equivalent) and/or evidence of ischemia on electrocardiography, echocardiography, or stress testing. The diagnosis is usually confirmed by coronary angiography. STEMI (codes I21.01-I21.3) documentation should indicate the underlying etiology of acute coronary thrombus as well as location and artery involved. Equally, a NSTEMI (code I21.4) should include the underlying etiology of plaque rupture/erosion. Documentation that includes the underlying etiology and site serves to support the diagnosis, leading to accurate coding and denial prevention.

Type 2 MI

Type 2 MI (code I21.A1) is defined as a myocardial infarction due to ischemic imbalance from a supply demand mismatch. Typically, the patient will have underlying coronary artery disease (CAD). Patients having a Type 2 MI should exhibit the same symptoms of ischemia (chest, jaw, or arm pain), and/or positive ischemic changes on ECG, echocardiography, or stress testing that would be found in a patient having a Type 1 MI. Documentation of a Type 2 MI should include the underlying cause, such as acute blood loss anemia, acute hypoxia, or coronary artery vasospasm. However, the quintessential requirement when determining etiology and type of MI is dependent on ruling in or ruling out cardiac ischemia. Coding and CDI professionals should also be aware that the treatment for a Type 2 MI will be directed to the underlying cause. It should be noted that the term NSTEMI should be used exclusively when documenting a Type 1 MI, and if the provider documents NSTEMI Type 2 then code I21.A1 should be used, as the MI type takes precedence over NSTEMI. The sequencing of Type 2 MI and its underlying cause is dependent on the circumstances of admission. Coding and CDI professionals should keep in mind that a Type 2 MI is frequently a secondary diagnosis, and resource consumption/treatment will be directed at the underlying cause or the principle diagnosis.

Non-MI Troponin Elevation

Patients may present with elevated troponin levels due to numerous cardiac or systemic factors such as defibrillation from automatic implantable cardioverter-defibrillator, stroke, or myocarditis. The fourth universal definition of MI utilizes the term myocardial injury without infarction for these types of pathophysiological origins of troponin elevation. Currently, this term does not exist in ICD-10-CM. The current code set for myocardial injury refers to a traumatic code such as contusion or laceration. Ideally, providers should utilize the term "Non-MI Troponin Elevation due to [underlying cause]" in this clinical scenario. Documentation of "Non-MI troponin elevation" will code to ICD-10-CM, Chapter 18, Symptoms, Signs and Abnormal Clinical Laboratory Findings, Not Elsewhere Classified[4] and the underlying cause will also be coded. Other causes of Non-MI Troponin Elevations include acute congestive heart failure, end-stage renal disease, pulmonary embolism, sepsis, rhabdomyolysis, intracranial hemorrhage, and trauma.

Education and Documentation Challenges

It is the duty of coding and CDI professionals to educate, query, and re-educate providers to achieve the appropriate documentation habits for coding and reporting. Throughout health information management professional's (HIM's) endeavors to achieve desired goals, HIM must remember providers are here to take care of patients and sometimes view coding and CDI efforts as intrusive. However, HIM is ultimately responsible for making sure conditions are coded and reported accurately. Provider buy-in is a necessity to make this or any documentation endeavor a success.

Education Leads to Strong Coding, CDI

As demonstrated throughout this article, there are many red flags when dealing with the accurate coding and reporting of MIs and Non-MI troponin elevations. The key element of appropriately coding and reporting these conditions is education. Having a strong education component for coding professionals, CDI professionals, and providers is essential to ensure a good understanding of the coding and clinical differences between these diagnoses. According to ACC, having this knowledge will facilitate the education of providers on documentation specifics. This will ultimately improve patient outcomes, quality reporting, and reimbursement for all involved.

The Clinical Picture for Correct MI and Non-MI Designation

The following lists key elements needed for identifying the specific type of MI and non-MI Troponin Elevations for appropriate documentation and reporting.

Troponin Elevation

Troponin elevation alone, or even a rise and fall alone, is not diagnostic of acute myocardial infarction.

Diagnosis of Type 1 or Type 2 MI requires ischemic indicators be present:

- Signs/symptoms of ischemia (e.g., chest pain)
- Ischemic electrocardiogram changes
- Imaging evidence of ischemia (e.g., ischemic perfusion defect, or new wall motion abnormality)
- Diagnosis is usually confirmed by coronary angiography

Type 1 STEMI

Cause: Acute Coronary Thrombus
Treatment: Early Reperfusion Therapy
Documentation: STEMI of vessel or myocardial segment

Type 1 NSTEMI

Cause: Plaque rupture/erosion
Treatment: IV Heparin, early Cath/PCI, etc.
Documentation: NSTEMI

Type 2 MI

Cause: Ischemic imbalance due to supply/demand mismatch
Treatment: Treat underlying cause. IV Heparin, antiplatelet agents, Cath/PCI often not indicated and may even be harmful.
Documentation: Type 2 MI due to_____

Non-MI Troponin Elevation

Cause: Non-ischemic mechanism (cardiac stretch, direct injury, or other unclear mechanism as in ESRD)
Treatment: Underlying cause or no treatment
Documentation: Non-MI troponin elevation due to_____

Other Cardiac Types

- Type 3 MI (Sudden Cardiac Death)
- Type 4 MI (MI due to PCI)
- Type 5 MI (MI due to CABG)
- AMI Unspecified should be avoided

Acknowledgment

A special thank you is extended to Dr. Thad Waites, MD, MACC, based at Hattiesburg Clinic/Forrest General Hospital, for his contributions, insight, and collaboration on this piece.

Notes

1. Thygesen, Kristian et al. "Fourth Universal Definition of Myocardial Infarction (2018)." *Journal of the American College of Cardiology*. August 2018. www.acc.org/latest-in-cardiology/ten-points-to-remember/2018/08/24/00/09/fourth-universal-definition-of-mi-esc-2018.
2. Goyal, Abhinav et al. "Translating the Fourth Universal Definition of Myocardial Infarction into Clinical Documentation: Ten Pearls for Frontline Clinicians." *Cardiology Magazine*. November 6, 2018. www.acc.org/latest-in-cardiology/articles/2018/11/06/12/42/translating-the-fourth-universal-definition-of-myocardial-infarction-into-clinical-documentation-ten-pearls-for-frontline-clinicians.
3. American Hospital Association. *Coding Clinic*. (Fourth Quarter 2017): 12-14.
4. Centers for Medicare and Medicaid Services. "ICD-10-CM Official Guidelines for Coding and Reporting FY 2019." www.cms.gov/Medicare/Coding/ICD10/Downloads/2019-ICD10-Coding-Guidelines-.pdf.

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Article citation:
Mills, Lorie B. Susan Sweeney, Laura Little, Abhinav Goyal. "Red Flags for Myocardial Infarctions Coding and CDI." *Journal of AHIMA*, no. 7 (Jul-Aug): 54-55.

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