Process to Ensure Correct Classification of Myocardial Infarction-Related Deaths

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Background

Accurate identification of type 1 myocardial infarction (MI) is central to appropriate delivery of guideline-directed medical care. In cases, however, where documentation specificity is lacking, cases of type 2 MI or myocardial injury without MI may be incorrectly combined with this group, resulting in DRG misassignment. In-hospital death among those in this latter group artificially inflates the MI-related mortality rate and may contribute to unwarranted Value Based Purchasing penalties by CMS.

Objectives

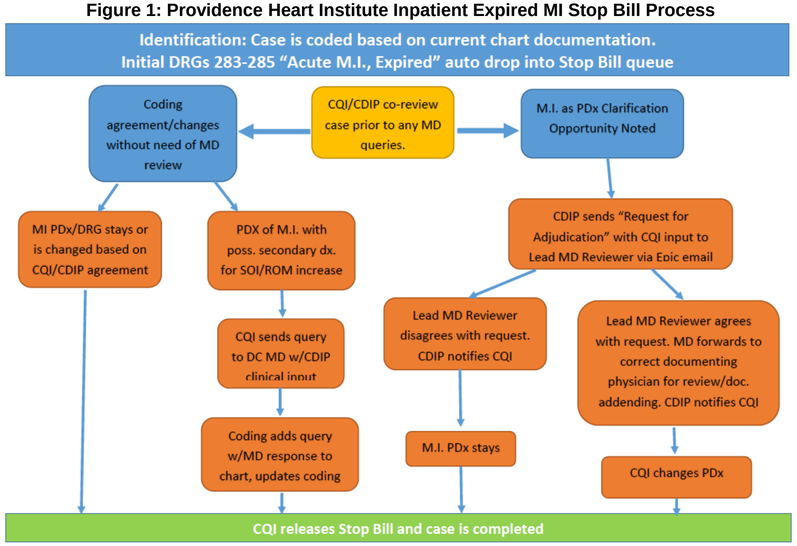
We sought to develop an audit process for assessing and reconciling in-hospital mortalities in which an MI DRG was incorrectly assigned. We engaged multiple stakeholders, including clinicians, inpatient Coding Quality Improvement (CQI) and Clinical Documentation Improvement (CDI) personnel, and our revenue-cycle team.

Methods

In June 2018, we implemented an automated stop-bill process in our Electronic Medical Record (EMR) to allow review of all in-hospital deaths assigned to a MI DRG for 8 of our Oregon hospitals (Figure 1).

- Identified cases underwent immediate, but separate review by members of our CQI and CDI teams using an auditing tool (Figure 2).
- If both groups felt that documentation supported a MI DRG, the stop bill was reversed, coding was finalized, and the bill was submitted.
- If either of the two groups felt that further clarification was required, a request for adjudication was sent to a lead physician reviewer using a separate auditing tool (Figure 3).
- Among cases requiring further clarification, a request was sent to the discharging provider to addend their documentation.
- If either the lead physician reviewer or the discharging provider felt no further clarification was warranted, the stop bill was reversed, coding was finalized, and the bill was submitted.
- Turnaround time for this process was 2 business days for the CQI/CDI review and 7 business days for the provider review (Figures 2 & 3).

Figure 1: Providence Heart Institute Inpatient Expired MI Stop Bill Process



CDI=Clinical Documentation Improvement, QI=Quality Improvement, PDX=Primary Diagnosis, MI=Myocardial Infarction, DRG=Diagnosis Related Group, SOI=Severity of Illness, ROM=Risk of Mortality

Figure 2: Providence Heart Institute CQI/CDI Auditing Tool

Does the documentation in the record support a principal diagnosis of Myocardial Infarction (MI)?

a. Yes
b. No. (List alternative here)

Is Code Status and/or changes to code status clearly documented?

a. Yes
b. No, additional documentation of code status is needed:

Does the documentation in the record support the **coded** secondary diagnoses without changes?

a. Yes
b. No, Additional documentation, is needed:

Does the clinical information in the chart reflect further potential secondary diagnoses to either shift the DRG or increase SOI/ROM scores not already coded? (If case is already a 4/4, no need to query for additional secondary dxs.)

a. No
b. Yes, Additional documentation is recommended:

Are there additional secondary diagnoses identified in the original EMR that should be coded based on the existing documentation? **(can be addressed with coding Q.I. only/no need for MD review)**

a. No
b. Yes, The documentation in the chart reflects support for the following un-coded secondary diagnoses:

CDI=Clinical Documentation Improvement, QI=Quality Improvement, PDX=Primary Diagnosis, STEMI=ST-Elevation Myocardial Infarction, NSTEMI=Non-ST-Elevation Myocardial Infarction, MI=Myocardial Infarction, DRG=Diagnoses Related Group, SOI=Severity of Illness, ROM=Risk of Mortality

Figure 3: Providence Heart Institute Physician Quality Improvement Assessment

Situation: Primary Diagnosis currently listed as _____. Upon clinical documentation review, potential for alternative PDx has been noted.

Background: (briefly list chief complaint, etc. pt. came in with)

Assessment/Recommendations: (list potential alternatives with clinical indicators)

Primary Dx:

Clarity: MD Response here

Do you agree with recommendations by the CDIP related to the principal diagnosis?

a. Yes
b. No, because:

Dx=Diagnosis, CDIP=Clinical Documentation Improvement Program

Table 1: Documentation Guide to Categorize Elevated Troponin Levels

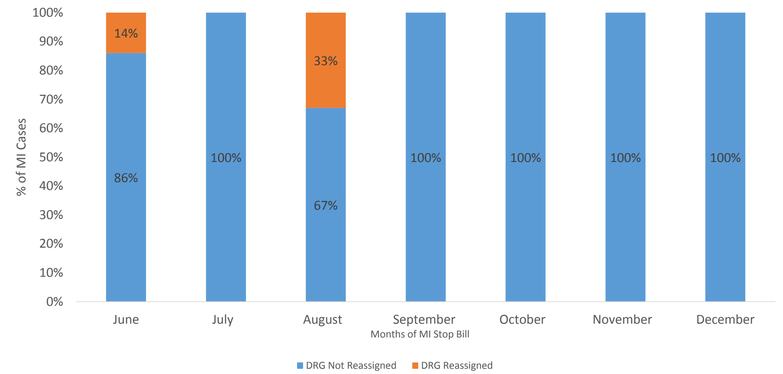
Category	Etiology of Myocardial Injury	Documentation Suggestion	ICD 10 Codes
Type 1 STEMI	Acute coronary thrombus	"STEMI of {myocardial wall segment} involving the {coronary artery}	I21.0 to I21.3
Type 1 NSTEMI	Acute coronary plague rupture/erosion	"NSTEMI"	I21.4
Type 2 MI	Ischemic imbalance due to supply/demand mismatch	"Type 2 MI due to {underlying cause(s)} (eg, Type 2 MI because of hypertensive emergency)" Note: "due to demand" will lead to a query. Please specify the cause or probable cause.	Code underlying cause as primary diagnosis; code I21.A1 for Type 2 MI as secondary diagnosis
Non-MI troponin elevation	Non-ischemic mechanism (cardiac stretch, direct injury, or other unclear mechanism as in ESRD)	"Non-MI troponin due to {underlying cause(s)}"	Code underlying cause as primary diagnosis; code R79.89 (abnormal chemistry) as secondary diagnosis

STEMI=ST-Elevation Myocardial Infarction, NSTEMI=Non-ST-Elevation Myocardial Infarction, MI=Myocardial Infarction

Results

- Over 7 months, 44 cases hit the stop bill queue. Of these, 40 (91%) underwent review without changes; 4 (9%) were reviewed and had an alternate DRG assigned (Figure 4).
- Reviews were more common when a cardiologist was not involved in the case.
- Complete concordance was noted with provider reviews.

Figure 4: Results of In-Hospital MI Mortality Reviews



Conclusions and Ongoing Process Improvement

- Implementation of a stop-bill process can help improve appropriate MI-related coding, particularly among patients experiencing in-hospital death.
- Greater education around specificity of documentation is needed for patients with type 2 MI or myocardial injury without MI.
- The impact of this process on the MI-related mortality rate remains to be determined.
- There exists an opportunity to expand this approach to other prevalent cardiac conditions where accurate coding is of key importance (e.g., heart failure).

References:
1. Centers for Medicare & Medicaid Services. (n.d.) What are the value-based programs. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/Value-Based-Programs.html . Accessed February 2nd, 2019.
2. Goyal A, Gluckman TJ, Tcheng JE. What's in a name? The new ICD-10 codes and Type 2 Myocardial Infarction. *Circulation.* 2017;135:1180-1182.

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