**Inpatient or Outpatient Status for Elective Percutaneous Coronary Intervention**

**Doctor, “You Gotta Let Me Know, Should I Stay or Should I Go?”**

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**Editorial**

Doctor, “you gotta let me know. Should I stay or should I go?” This (modified) version of The Clash’s song is a fundamental question for physicians and patients after elective percutaneous coronary intervention (PCI). In the current paradigm, third-party payers dictate that the vast majority of patients irrespective of risk should go. The driving force behind this is almost entirely financial. We think this care paradigm must evolve. The Centers for Medicare and Medicaid Services (CMS) is the largest payer for PCI procedures in the United States. In recent years, CMS has made several modifications to reimbursement for PCI procedures. An important aspect of reimbursement is whether PCI is performed in an inpatient or outpatient setting. Although these are fairly intuitive terms, they are in fact not related to duration of hospitalization and historically have carried different implications for reimbursement purposes. Overall, there appeared to be a significant financial advantage to institutions for performing inpatient PCI: reimbursement under the more lucrative Diagnostic-Related Group system rather than the Ambulatory Payment Classification system, as also illustrated by Vora et al in this issue of *Circulation: Cardiovascular Interventions.* What is interesting is that, in this construct, an outpatient PCI could in fact be in the hospital for several days after, whereas an inpatient PCI could be discharged the next day.

**See Article by Vora et al**

Recognizing that cardiovascular services, particularly inpatient procedures, contributed heavily to escalating healthcare costs, CMS pursued several measures to rein in costs and reduce overpayments. One of them was the institution of the much publicized Recovery Audit Contract program in 2008. Based on CMS calculations, among conditions requiring a 1 day length of stay (such as PCI), nearly 75% of improper payments were projected to be because of medically unnecessary causes. In other words, CMS’ opinion was that they were reimbursing PCI on an inpatient designation model all too often versus the much cheaper outpatient designation. In the past few years, Recovery Audit Contract audits have resulted in significant fines and penalties to health systems for PCI procedures deemed to be incorrectly billed as inpatient. In addition, in 11 states with either historically high improper payments (such as California, Florida, and Texas, among others) or high volumes of short inpatient stays (Ohio, North Carolina, Pennsylvania, and Missouri), Recovery Audit Contract review claims can be instituted even before payment is made (so-called prepayment audits). Medicare Administrative Contractors probe audits are further geared toward improper payments, particularly for conditions such as chest pain admissions with a short length of stay. Another change that CMS brought about was the implementation of the 2-midnight rule in 2013 to 2014 to qualify for inpatient reimbursement. All of these measures, coupled with administrative pressures to minimize overall costs, have resulted in an accelerated shift of cardiovascular procedures, such as PCI, to the outpatient setting. Given the current environment, hospitals and providers face a unique challenge. By definition, the vast majority of elective PCIs will be reimbursed as an outpatient. Physicians now need to decide whether to keep individual patients longer than 6 to 8 hours when there is genuine concern for their well-being, at a financial cost to the health system.

This phenomenon of reimbursement-driving practice patterns is not new. However, it is apparent that in this dodging and ducking between physicians, hospital and practice administrators, coders, and third-party payers, what has clearly gotten left behind is the patient. Patient risk is currently not an explicit part of the calculus when deciding on inpatient versus outpatient PCI status and reimbursement. And we think it absolutely should be! A rational step forward would be to develop and use well-calibrated and validated risk models for mortality and important morbidities (bleeding, acute renal failure, stent thrombosis) to decide whether a patient should go home or be watched further. Because the majority of complications happen within the first 24 hours of elective PCI, one could envision a care paradigm where higher-risk patients are held longer somewhere between 8 and 36 hours for continued observation of mortal and morbid complications, and it would be reasonable for the highest-risk cohort to be deemed as inpatient.

A perfect example of such a risk model is the National Cardiovascular Data Registry’s CathPCI registry (NCDR CathPCI) PCI mortality model, which has a c-index of >0.9 for predicting in-hospital mortality based on 8 preprocedure risk factors: age, prior heart failure, peripheral vascular disease, chronic lung disease, renal function, New York Heart Association functional class, PCI urgency, and cardiogenic shock. Vora et al explore the real-world utilization of this model in the current elegantly performed and thought-provoking analysis. They assessed nearly 1 million patients...
undergoing PCI across the United States between 2009 and 2014 in the NCDR CathPCI registry. There was a clear monotonic rise in patients not admitted post PCI over this time frame, which is not surprising because it overlaps with many of the CMS measures discussed earlier. One of the main drivers of admission post PCI was the occurrence of observed complications (for instance, a 5-fold difference was observed in post-PCI bleeding among admitted versus nonadmitted patients). Nearly 1 in 5 patients who were at or above the 75th percentile for predicted inhospital mortality were not admitted, whereas 1 in 6 patients who were at or below the 25th percentile for predicted in-hospital mortality were admitted. Thus, the authors infer that patient risk is not being factored adequately into decisions regarding patient disposition post PCI. They argue that a risk-based approach to PCI reimbursement might, therefore, be more appropriate rather than arbitrary standards for inpatient versus outpatient status, which we are in complete agreement with.

The advent of appropriateness criteria for coronary revascularization in 2009 has had a major impact on the practice of interventional cardiology in the United States.9,10 These criteria were felt to reflect a combination of clinical trial evidence, practice guidelines, and expert opinion, and several parameters such as clinical indication, angiographic severity, magnitude of ischemia, severity of angina symptoms, and intensity of medical therapy were included in the definition. Before its implementation, it was reported that nearly 1 in 6 nonacute PCIs were deemed rarely appropriate, indicating that the benefits of the procedure were unlikely to outweigh the risks.11,12 In 2011, NCDR CathPCI began providing hospitals information about their performance on PCI appropriateness, which was benchmarked against other participating hospitals. This, along with national initiatives such as Choosing Wisely and several carrot-and-stick measures by third-party payers, resulted in a 50% reduction in rarely appropriate PCIs between 2009 and 2014, despite a 34% decrease in PCI volumes for nonacute indications.13–15 It is thus really striking that although the entry of patients into the catheterization laboratory and what providers do to and for them in the catheterization laboratory is largely driven by evidence and guideline-based practice, the final disposition of these patients is driven by regulatory, financial, and administrative decisions.10 We thus strongly believe and advocate that risk-stratification models should be better used in both clinical practice and by third-party payers, such as CMS, to make personalized well-informed decision about designation status after elective PCI. Further, patients with not only observed immediate post-PCI complications but also those at high risk for complications should remain in the hospital for an appropriate period of time. Providers and health systems should not be financially penalized for this personalized, evidence-based, and patient-centered approach to patient care.

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References

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