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You are Leaving Money on the Table by Admitting Low-Risk PCIs

In this month's article, **Larry Sobal, MedAxiom Executive Vice President, and Nicole Knight, Director, Revenue Cycle Solutions, MedAxiom Consulting**, share their qualified and experienced views and observations regarding what has become a contentious and incomplete understanding of what hospitals believe they are being reimbursed versus the costs they and their patients are incurring for the CMS patient undergoing a PCI procedure. Same-day discharge for PCI is fast becoming a hot-button topic, but the benefits financially for the hospital and patient, not to mention providing a service the customer (patient) may very well prefer compared to conventional overnight stays, should be strongly considered for any program addressing the growing trend towards patient consumerism, population health, and meeting the quadruple aim.

— *Gary Clifton, Vice President, Terumo Business Edge*

AN HMP PUBLICATION

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Larry Sobal

Nicole Knight

The title of this article is intended to catch the attention of cath lab administrators, medical directors, hospital administrators, CFOs, and cardiovascular (CV) service line administrators. Although we are not interventional cardiologists, we are coding and reimbursement experts, and know one thing: we repeatedly see heart programs that have not wholeheartedly (no pun intended) adopted a formalized same-day discharge (SDD) program for percutaneous coronary intervention (PCI) procedures (or electrophysiology [EP] procedures, for that matter) to their financial detriment and the financial detriment of their Medicare patients.

This is a mystery to us. In an era of reduced financial margins at hospitals, a struggle for access to inpatient beds, a plethora of evidenced-based studies showing the efficacy and advantages of safe SDD, and the inability of patients to absorb unnecessary out-of-pocket costs, one would think this approach would be more widespread.

The bottom line is: when hospitals admit Medicare low-risk PCI patients who should be candidates for SDD overnight, they don't get reimbursed at all for the inpatient portion of that stay. At the same time, they expend various costs (bed, food, nursing, etc.) that are not reimbursed, other than what hospitals received as part of the cAPC. Yes, you read that right — hospital reimbursement for the costs incurred to keep the patient overnight (not the PCI

Table 1. A meta-analysis[1] of data from 13 randomized and observational studies and involving 111,830 patients showed similar rates of complications, major adverse cardiac events, and re-hospitalizations between SDD and overnight PCI patients. Reprinted with permission from *JACC Cardiovasc Interv.* 2013 Feb; 6(2): 99-112.

First Author, Year (Ref. #)	Study Design*	Number of Centers	Population Total (N)	Definition of Complications
Knopf et al., 1999 [a]	1	1	90	Death, MI, urgent revascularization, acute vessel dissection/occlusion, cardiac arrhythmia, AV fistula with repair, recurrent chest pain
Carere et al., 2000 [b]	1	1	100	Need for vascular surgery, external bleeding, hematoma, blood transfusion
Koch et al., 2000 [c]	0	1	1,015	Death, MI, urgent revascularization during hospitalization, pericardial effusion, or any complication requiring prolonged hospitalization
Slagboom et al., 2001 [d]	0	1	159	Cardiac death, MI, urgent revascularization, MI, UA, major access site complication, major bleeding
Dalby et al., 2003 [e]	0	1	70	Death, MI, TVR
Yee et al., 2004 [f]	0	1	75	MACE, vascular access site complications
Slagboom et al., 2005 [g]	0	1	644	Cardiac death, urgent revascularization, MI, rehospitalization, major access site complications and bleeding
Bertrand et al., 2006 [h]	1	1	1,005	Death, MI, urgent revascularization, major bleeding, repeat hospitalization, severe thrombocytopenia, and access site complications
Heyde et al., 2007 [i]	1	1	800	Cardiac death, MI, stroke, urgent revascularization, access site complications
Khater et al., 2007 [j]	0	1	150	Death, MI, urgent revascularization, access site complications
Chung et al., 2010 [k]	0	1	660	Death, MI, urgent revascularization, stroke, bleeding, transfusion, rehospitalization, access site complication
Rao et al., 2011 [l]	0	903	107,018	Death, rehospitalization, bleeding, access site complications
Falcone et al., 2011 [m]	1	1	44	Death, MI, stroke, rehospitalization, access site complications

Significant heterogeneity of the definition of outcomes and complications was noted between studies.
AV = arteriovenous; MACE = major adverse cardiovascular events; MI = myocardial infarction; TVR = target vessel revascularization; UA = unstable angina

*0 = observational study; 1 = randomized.

a. *J Invasive Cardiol.* 1999;11:290-295.
b. *Am Heart J.* 2000;139:52-58.
c. *Heart.* 2000;83:557-563.
d. *Catheter Cardiovasc Interv.* 2001;53:204-208.
e. *Catheter Cardiovasc Interv.* 2003;60:18-24.
f. *J Interv Cardiol.* 2004;17:315-320.
g. *Catheter Cardiovasc Interv.* 2005;64:421-427.
h. *Circulation.* 2006;114:2636-2643.
i. *Circulation.* 2007;115;2299-2306.
j. *Coron Artery Dis.* 2007;18:565-569.
k. *Int Heart J.* 2010;51:371-376.
l. *JAMA.* 2011;306:1461-1467.
m. *Proc (Bayl Univ Med Cent).* 2001;24:192-194.

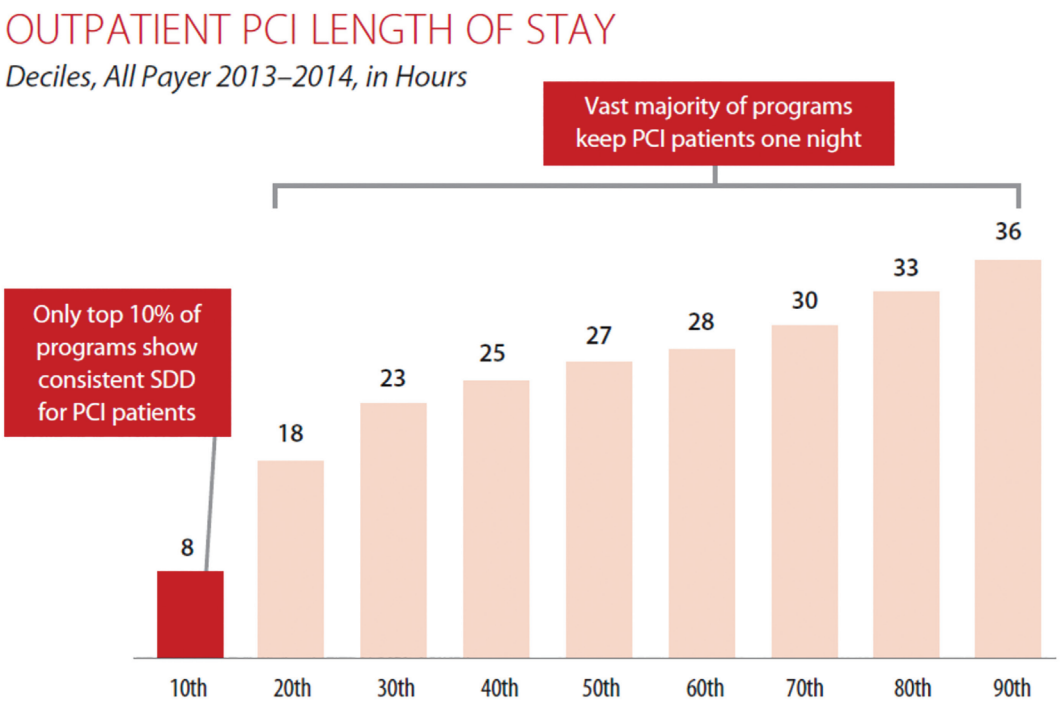

Figure 1. Outpatient PCI length of stay in hours.[3] *Reprinted with permission from Advisory Board.*

Table 2. Hospital reimbursement for a bare metal coronary stent with angioplasty.

CPT	Description	Hospital APC Payment	Hospital DRG Payment
92928	Percutaneous transcatheter placement of intracoronary stent(s), with coronary angioplasty when performed; single major coronary artery or branch	$9,748	MS-DRG 248 with MCC $18,157 MS-DRG 249 w/o MCC $11,545

procedure itself) is zero, zilch, nada. And by keeping the patient overnight, hospitals potentially move from a profitable to an unprofitable PCI event. Let's examine the facts and possibly uncover why this happens.

Is Same-Day Discharge Safe?

Patient care is increasingly shifting from inpatient to outpatient settings. Day surgery has become the standard of care for many procedures (e.g., cholecystectomy, transurethral prostatectomy) that only a few years ago required the patient to stay hospitalized overnight.

Going back to the early 1990's, some heart programs began to demonstrate that same-day PCI discharge programs are clinically safe for low-risk PCI patients with asymptomatic, stable angina and no significant comorbidities. Since then, the efficacy and safety of outpatient PCI has been demonstrated and described in a large series of publications from different groups. In fact, in several countries, outpatient PCI has become clinically routine and the United States cardiology community has validated that same-day PCI strategies are recognized as both efficient and beneficial to patients.

For example, a meta-analysis published in 2013[1] taking data from 13 randomized and observational studies and involving 111,830 patients, showed similar rates of complications, major adverse cardiac events, and re-hospitalizations between SDD and overnight PCI patients. It concluded that SDD after uncomplicated PCI seems a reasonable approach in selected patients (Table 1).

As our colleague Anne Beekman has written about[2], there has been a 45% decrease in inpatient PCI procedures in the U.S., with similar changes in inpatient pacemaker implantations, yet there are many programs that have less than 10% of PCI patients being discharged in 8 hours or less, which may still be incurring a financial hit by not being paid for the admission (Figure 1).

What are the Financial Benefits?

Since its first inception over three decades ago, PCI has become the most commonly performed cardiac intervention worldwide. In 2010, an estimated 492,000 patients underwent PCI (previously referred to as percutaneous transluminal coronary angioplasty, or PTCA) procedures in the United States.[4] The Centers for Medicare and Medicaid Services (CMS) is the largest payer for PCI procedures in the United States. A 2010 *JACC* article[5] estimated that the U.S. health care system could save between $200 and $500 million per year if 50% of the patients undergoing PCI in the United States were discharged the same day.

Furthermore, a 2017 study[6] published by Dr. Amit Amin at Barnes-Jewish Hospital demonstrated that combining same-day PCI discharges and procedures performed transradially (TR) can be as much as $3500 lower in costs, much of that due to lower length of stay.

What are the Hospital Reimbursement Implications?

If you agree with the evidence that SDD is safe and accepted, then consider the following financial implications. Administrative reluctance towards adopting SDD for PCI can sometimes be predicated upon misconceptions regarding reimbursement. Where it gets confusing is that an "outpatient" PCI can be in the hospital for several days after, whereas an "inpatient" PCI could be discharged the next day, depending on what status was or wasn't assigned by the physician. This is because the decision for inpatient hospital admission is a complex medical determination based on the physician's judgment and the patient's need for medically necessary hospital care. Based on the CMS Two-Midnight Rule[7], an inpatient admission is generally appropriate when a patient is expected to need two or more midnights of medically necessary hospital care, but the physician must order such admission and the hospital must formally admit the patient in order for them to become an inpatient admission.

Historically, it has been to a hospital's financial advantage if a Medicare PCI patient is admitted and reimbursed as an inpatient via a DRG. For example, as you can see in Table 2, for a simple PCI, such as CPT 92928, compared to a SDD, an inpatient without complications (MS-DRG 249) might result in additional reimbursement of $1,800, or as much as an additional $8,400 (MS-DRG 248) if the patient has documented complications.[8,9]

However, CMS' opinion was that they were too often reimbursing PCI on an inpatient designation model when PCI patients without complications did not meet the medical necessity criteria to be appropriate inpatients. Thus, if the patient does not have the medical necessity to qualify as an inpatient, there is not any part of the costs incurred to care the patient overnight that are reimbursed.

But where we see some hospitals forgoing a financial opportunity is when they keep an elective PCI overnight, knowing that there is not any reimbursement related to the overnight stay and also incurring considerable costs to keep that patient overnight. By developing a radial SDD program and achieving its estimated cost avoidance, high-volume PCI hospitals can achieve a significant benefit.

What is the Patient Impact?

The most potentially negative impact of keeping patients overnight after PCI may be to their checkbooks. That is because a Medicare patient who is kept overnight in a standard hospital bed will

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SDD for stable PCI recipients will benefit patients, caregivers, and medical centers, and represents an opportunity for your hospital to gain a competitive advantage, increase bed availability, and improve profitability.

incur significant out-of-pocket expenses which can vary, depending on whether they are a traditional Medicare Part A or Medicare Advantage.

What is patient out-of-pocket as an inpatient?

- Medicare Part A (Hospital Insurance) covers inpatient hospital services.
- Generally, this means the patient pays a one-time deductible for all of their hospital services for the first 60 days they are in a hospital.
- Medicare Part B (Medical Insurance) covers most of the patient's doctor services when they are an inpatient. Patients pay 20% of the Medicare-approved amount for doctor services after paying the Part B deductible.

What is patient out-of-pocket as an outpatient?

- Part B covers outpatient hospital services. Generally, this means patients pay a copayment for each individual outpatient hospital service. This amount may vary by service.

It is important to note that the copayment for a single outpatient hospital service can't be more than the inpatient hospital deductible. However, the patient's total copayment for all outpatient services may be more than the inpatient hospital deductible.

A secondary issue is whether patients have greater satisfaction if sent home the same day of the procedure. This can depend on many variables, such as how the procedure was communicated at the time of scheduling and whether the procedure was performed via TR or femoral access. Patients who have experienced procedures from both femoral and TR access have voiced increased satisfaction with the TR approach and typically request it when future procedures are indicated. One study[10] noted a strong patient preference for TR procedures as a result of less pain, being able to ambulate more quickly, shorter length of stay, and having fewer overall activity restrictions post procedure. In addition, many patients would prefer to sleep in their own bed versus staying overnight in a hospital.

Summary

The major question appears to be: do you send qualified patients home in 23 hours, or do you send them home in six hours? That is a decision to work out with your physicians, and hospital interventional and inpatient departments. From our point of view, promoting SDD for stable PCI recipients will benefit patients, caregivers, and medical centers, and represents an opportunity for your hospital to gain a competitive advantage, increase bed availability, and improve profitability. Please let us know your point of view. ■

The authors can be contacted via Larry Sobal at lsobal@medaxiom.com.

References

1. Abdelaal E, Rao SV, Gilchrist IC, et al. Same-day discharge compared with overnight hospitalization after uncomplicated percutaneous coronary intervention: a systematic review and meta-analysis. *JACC Cardiovasc Interv.* 2013 Feb; 6(2): 99-112. doi: 10.1016/j.jcin.2012.10.008.
2. Beekman A. The ambulatory approach, answering questions about the shift in cardiology from inpatient to outpatient procedures. *Cardiac Interventions Today.* 2017 May/June; 11(3): 73-75.
3. Contos B. Why you should be working toward same-day discharges for PCI. January 19, 2016. Available online at https://www.advisory.com/technology/crimson-continuum-of-care/members/expert-insights/same-day-discharge-for-pci. Accessed September 11, 2017.
4. Benjamin EJ, Blaha MJ, Chiuve SE, et al; American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics — 2017 update: a report from the American Heart Association. *Circulation.* 2017 Mar 7; 135(10): e146-e603.
5. Popescu AM, Weintraub WS. Outpatient percutaneous coronary interventions: hospital and health system costs saving while maintaining patient safety. *JACC Cardiovasc Interv.* 2010 Oct; 3(10): 1020-1021. doi: 10.1016/j.jcin.2010.09.001.
6. Amin AP, Patterson M, House JA, et al. Costs associated with access site and same-day discharge among Medicare beneficiaries undergoing percutaneous coronary intervention. *JACC Cardiovasc Interv.* 2017 Feb 27; 10(4): 342-351. doi: 10.1016/j.jcin.2016.11.049.
7. Fact Sheet – Two Midnight Rule, https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2015-Fact-sheets-items/2015-07-01-2.html. Accessed September 11, 2017.
8. 2017 Physician Fee Schedule Search, https://www.cms.gov/apps/physician-fee-schedule/search/search-criteria.aspx, Accessed September 11, 2017.
9. FY 2017 IPPS Final Rule Homepage, https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/FY2017-IPPS-Final-Rule-Home-Page.html. Accessed September 11, 2017.
10. Cooper CJ, El-Shiekh RA, Cohen DJ, et al. Effect of transradial access on quality of life and cost of cardiac catheterization: A randomized comparison. *Am Heart J.* 1999 Sep; 138(3 Pt 1): 430-436.