

Population Health NEWS

Predicting Readmission Risk in a Cardiac Population

by Deirdre Baggot, Ph.D., R.N.

With good reason, the Centers for Medicare & Medicaid Services (CMS) has signaled a move toward holding providers accountable for 90-day readmission rates as opposed to 30 days that have been the focus since the Hospital Readmission Reduction Program (HRRP) was first announced in 2010. While there have been steady declines over the last five years in 30-day readmission rates in the Medicare population overall, 90-day readmission rates in a number of populations remain high.

In 2015, for example, nearly 40% of patients were readmitted within 90 days of discharge in the Medicare acute myocardial infarction (AMI) population. Similarly, in 2015 nearly 20% of Medicare beneficiaries having coronary artery bypass grafting were readmitted within 90 days of being discharged from a hospital.

Generally speaking, a hospital readmission occurs when a patient is admitted to a hospital within a specified time period after being discharged from a previous hospitalization.

The Affordable Care Act (ACA) established HRRP in which Medicare reduces payments to hospitals that have relatively high readmission rates for patients in traditional Medicare. Beginning in 2013 (Table 1), under the HRRP, hospitals with readmission rates that exceed the national average receive a reduction in payments across all of their Medicare admissions—not just those which resulted in readmissions.

Prior to comparing a hospital's readmission rate to the national average, CMS adjusts for certain demographic factors, such as age and illness severity. CMS then calculates a rate of "excess" readmissions, which determines a hospital's readmission penalty.

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Historically, Medicare has used an “all-cause” definition of readmission, meaning that hospital stays within 30 days of a discharge from an initial hospitalization are considered readmissions, regardless of the reason for the readmission. It is expected that over the next few years, CMS will shift to 90-day, all cause as the time period. This definition is used in calculating both the national average readmission rate and each hospital’s specific readmission rate.

Starting in 2014, CMS began making an exception for planned hospitalizations (such as a scheduled coronary angioplasty) within the 30-day window; these are no longer counted as readmissions.

Table 1. The Hospital Readmission Reduction Program (HRRP) 3 year phase in			
Year penalty applied (Penalties: percentage reductions in payments for all Medicare admissions in the year)	FY 2013	FY 2014	FY 2015
Performance (measurement) period	June 2008-July 2011	June 2009-July 2012	June 2010-July 2013
Diagnoses of initial hospitalization	Heart attack Heart failure Pneumonia	Heart attack Heart failure Pneumonia	Heart attack Heart failure Pneumonia COPD Hip or knee replacement
Maximum rate of penalty	1%	2%	3%
Average hospital payment adjustment (among penalized and non-penalized hospitals)	-0.27%	-0.25%	-0.49%
Average hospital penalty (among penalized hospitals only)	-0.42%	-0.38%	-0.63%
Percent of hospitals penalized	64%	66%	78%
Percent of hospitals at maximum penalty	8%	0.6%	1.2%
CMS estimate of total penalties	\$290 million	\$227 million	\$428 million

NOTES: Penalties are applied to each hospital in the fiscal year shown, based on its performance during a preceding three-year measurement period. Analysis excludes hospitals not subject to HRRP, such as Maryland hospitals and other hospitals not paid under the Medicare Hospital Inpatient Prospective Payment System, such as psychiatric hospitals.

[Source: Kaiser Family Foundation]

Much of CMS’s focus with HRRP is on readmissions in the cardiac population—namely, heart attack and heart failure. In 2015 in the Medicare population for AMI patients, readmission costs averaged \$7,239 per patient for MS-DRG 282 (acute myocardial infarction, discharged alive without complication or comorbidity or a major complication or comorbidity).

Key Strategies in Predicting, Avoiding Unnecessary Readmission in Cardiac Populations

Interviews with 36 hospitals illuminated a number of strategies that organizations are deploying in their efforts to more effectively manage readmission risk in the cardiac population:

- 1. Culture of accountability.** Organizations that are having success with managing against unnecessary readmission have taken accountability for patients and view it as their responsibility to ensure that their patients don’t return to an emergency room unnecessarily. As one cardiologist described, “Our patients are our patients for their entire life; our accountability doesn’t end when they leave the hospital.”
- 2. Predictive analytics.** Critical to scaling any readmission avoidance program is the ability to use predictive analytics in an effort to identify and intervene with those most at risk.

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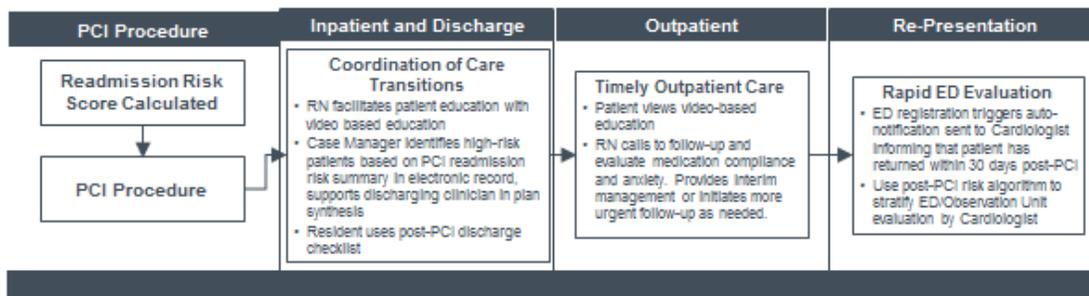
3. **Frequency of touch points.** Discharge phone calls, call-centers, cross-setting care management and follow-up appointments within three to seven days are common strategies built into care protocols in an effort to reduce readmission risk.
4. **Line of sight.** Prior to HRRP, there was no clear line of sight on the care team member accountable for managing against avoidable readmission. This metric is now included on dashboards and scorecards of providers across settings.
5. **Emergency room rapid response.** When a patient does return to an ER, many organizations are using their IT systems in an effort to rapidly communicate to a care team that a patient has been readmitted. Care navigators and care managers mobilize immediately in an effort to assess appropriateness of readmission. In cases where it is determined that a patient does not need to be readmitted, a care management team has a protocol to follow, ensuring ensure that necessary communication and follow-up occur.

Table 2. Acute Myocardial Infarction Average Cost Per Episode

Post Acute Care	Average Cost Per Episode			
	Days 0–30	Days 31–60	Days 61–90	Total
Part A				
Acute Inpatient Readmission — Facility Costs	\$5,467	\$983	\$790	\$7,239
Other Inpatient	\$41	\$32	\$35	\$108
Acute Inpatient Rehab — Facility Costs	\$125	\$75	\$38	\$239
Long Term Acute Care (LTAC) — Facility Costs	\$0	\$78	\$22	\$100
Skilled Nursing Facility — Facility Costs	\$907	\$445	\$248	\$1,600
Home care ¹	\$343	\$220	\$109	\$672
Part B				
Inpatient Professional	\$609	\$165	\$128	\$901
OP rehab	\$13	\$13	\$9	\$35
Part B drugs	\$28	\$28	\$27	\$82
Other outpatient facility (lab, radiology, etc.)	\$449	\$371	\$279	\$1,098
Other outpatient professional	\$331	\$230	\$194	\$755
Other outpatient (including DME)	\$399	\$131	\$113	\$642
Total Post Acute Care — Part A and B	\$8,712	\$2,770	\$1,991	\$13,472

[Source: CMS, 2015]

The Massachusetts General Hospital worked to reduce preventable readmissions post-PCI with interventions during three episodes of post-PCI care. From 2011 to 2015, the index hospital **readmission rate declined from 9.6% to 5.3%.**



Source: Circulation: Cardiovascular Quality and Outcomes. 2016, originally published August 23, 2016.

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