

EDITORIAL COMMENT

Temporal Trends and Factors Associated With Cardiac Rehabilitation Referral Among Patients Hospitalized With Heart Failure



Awaiting the Uptick*

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The Centers for Medicare & Medicaid Services (CMS) Decision Memo for Cardiac Rehabilitation (CR) Programs—Chronic Heart Failure of February 8, 2014, expanded CR participation to patients with stable systolic chronic heart failure (CHF) and a left ventricular ejection fraction of $\leq 35\%$ (1). Patients need to have been taking evidence-based cardiovascular medications with at least a 6-week period of antecedent clinical stability. The decision was pursuant to a “request for coverage” submitted by the American Association of Cardiovascular and Pulmonary Rehabilitation, the American Heart Association (AHA), the American College of Cardiology (ACC), and the Heart Failure Society of America in 2013. Before February 2014, CMS did not cover CR for CHF unless the patient had an associated diagnosis such as myocardial infarction (MI) or coronary revascularization for which coverage existed. Private medical insurers only rarely provided CR coverage for CHF, often after a case-by-case decision process. Thus, before February 8, 2014, few physicians referred patients hospitalized with CHF for CR because most patients were in the Medicare age category and did not have insurance coverage.

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CR participation requires a chain of processes that includes referral by the provider, uptake and initiation to the CR program (which requires effort by the patient and the CR program), and long-term adherence to CR (which requires behavior change by the patient and professional support from the CR program). The present study by Golwala et al. (2) in this issue of the *Journal* carefully analyzes the first link of that chain: referral to CR at hospital discharge, for patients with acute heart failure (systolic or diastolic) as the primary diagnosis during the time period 2005 to 2013. The framework of the Get With the Guidelines (GWTG) program (3) was used as the platform, and the size of the study of >100,000 participants was more than adequate to study this issue in depth.

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The current (2013) ACC/AHA guideline for the management of heart failure states that “cardiac rehabilitation can be useful in clinically stable patients with CHF to improve functional capacity, exercise duration, health-related quality of life and mortality” with a strong Class IIa, Level of Evidence: B recommendation (4). However, during the time frame of this study, the CHF guideline recommendation for CR from 2005 to 2013 was less strong, and the term *cardiac rehabilitation* was not mentioned (5). It states that “the long-term effects of exercise training have not been completely defined” and that it “might have a favorable effect on the natural history of CHF.” It also states that “exercise training should be considered for all stable outpatients with chronic heart failure who are able to participate in

protocols needed to produce physical conditioning.” Thus, from 2005 to 2013, the CHF management guidelines were not explicit regarding a CR referral, and until 2014, the vast majority of patients would not have had insurance coverage and would have had to self-pay for CR. A high rate of CR referral after an acute hospital admission for CHF would not have been expected.

What did the authors find? An overall 10% referral rate to CR over the study period for all patients admitted with a primary or discharge diagnosis of acute heart failure. There was a slight uptick over the study period from 9.6% in 2005 to 13.3% in 2014. Referrals were higher with CHF with reduced ejection fraction (HFrEF) than with preserved ejection fraction (HFpEF). Referred patients were younger (age 70 vs. 74 years), were more likely male, had fewer comorbidities, and were more likely to have experienced an MI or coronary revascularization, diagnoses that had insurance coverage for CR. Curiously, there were markedly higher referral rates in the South (49%) than in the Midwest (14%), which is the opposite of what was found in a study of CR utilization after MI or coronary bypass surgery, where the highest participation rates were in the Midwest and the lowest in the South (6).

Are these results surprising? Although there is now substantial evidence that CR exercise training and disease-related counseling are effective in reducing symptoms, hospitalizations, and mortality and in increasing exercise capacity and health-related quality of life in the setting of HFrEF (with similar but somewhat less evidence in HFpEF) (7), these data were largely not available during the study period. From 2005 to 2014, CR for CHF would have been by self-pay, and few physicians or hospitals would have established a systematic referral policy for a treatment that was self-pay and therefore unlikely to be pursued. Indeed, as a longstanding director of a CR program who has attended on the inpatient service over the time period in question, I would have rarely referred a CHF patient to early outpatient CR, knowing that self-pay was unrealistic, despite potential clinical benefits.

Thus, a major value of the data from Golwala et al. (2) is as a baseline and springboard to setting

up CR referral and uptake processes that optimize CR participation processes for inpatients or outpatients with HFrEF now that insurance coverage is broadly available. For patients with HFpEF, these data can stimulate further study of the effects of CR (exercise and self-care counseling) on important clinical outcomes, such that this patient category might be reconsidered for a CMS coverage determination in the future. It is also noted that CR referral is not limited to checking off a box on a discharge summary but should include a direct, in-person physician recommendation to the patient that CR is a part of the personalized treatment plan, because this physician recommendation has been shown to be a powerful predictor of CR participation (8-10).

Now that CR is covered for inpatients and outpatients with CHF with left ventricular ejection fraction $\leq 35\%$ who are taking evidence-based medications (and have been stable for at least 6 weeks), the increase in CR referrals and participation will not occur spontaneously. Multipronged approaches that include computerized prompts for referral, such as with GWTG or electronic medical records-based systems, are a part of a collection of processes that should also include provider recommendation, an early visit, and transition to the CR program (11,12) along with follow-up and enrollment-related communications from the geographically available CR program. The program should be well versed in the clinical application of CR for CHF and on the importance of supporting self-care processes alongside the progressive exercise program (13). It is also noted that the majority of patients with CHF, eligible for CR, are outpatients, and thus, efforts should not just focus on the hospital discharge process.

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