

Transitional Care Interventions To Prevent Readmissions for People With Heart Failure

KEY ISSUE

Readmissions for people with heart failure (HF) are common, costly, and potentially preventable. Targeting preventable HF readmissions is a potential strategy for reducing overall health care costs from both societal and payer perspectives. This is a summary of a systematic review evaluating the evidence regarding the efficacy, comparative effectiveness, and harms of transitional care interventions (defined in Table 1 on page 2) that aim to reduce readmissions and mortality for adults hospitalized with HF. The systematic review included 47 studies published from 1990 to October 29, 2013. The full report, listing all studies, is available at www.effectivehealthcare.ahrq.gov/heart-failure.

BACKGROUND

Heart failure (HF) is a major clinical and public health problem and a leading cause of hospitalization and health care costs in the United States. Despite a decline in HF-related hospitalizations during the past decade, readmission rates for patients with HF have not decreased. Up to 25 percent of patients hospitalized with HF are readmitted within 30 days.

A preventable readmission is defined as one occurring within 30 days of discharge and is clinically related to the previous admission if there was a reasonable expectation that it could have been prevented by providing quality care in the initial hospitalization, adequate discharge planning, adequate postdischarge followup, or improved coordination between inpatient and outpatient health care teams. Beginning in 2012, the Centers for Medicare & Medicaid Services implemented the Hospital Readmissions Reduction Program (HRRP), which reduces payments to hospitals with excess readmissions for HF.

The rate of preventable readmissions may be reduced by transitional care interventions, which are defined as a set of actions designed to ensure the coordination and continuity of health care as patients transfer from the inpatient setting to alternative care (see Table 1 on page 2). Some transitional care interventions may be used in combination with each other.

The 2013 American College of Cardiology Foundation (ACCF)/American Heart Association (AHA) Guideline for the Management of Heart Failure focuses on the importance of optimizing HF pharmacotherapy and providing HF education before discharge and recommends a followup visit within 7 to 14 days of discharge. This guideline also recommends initiating multidisciplinary-HF disease-management programs for patients at high risk for readmission. This systematic review adds to our understanding about components of transitional care interventions that improve outcomes in patients with HF.

Summary of Evidence From the Systematic Review

Within 30 days after discharge

- ✓ Evaluating 30-day readmission rates is important to hospitals, patients, payers, and quality improvement organizations. However, few studies have evaluated 30-day readmission rates. Limited evidence suggests that home-visiting programs may reduce all-cause readmissions.

At 3 to 6 months after discharge (see Table 2 on page 2)

- ✓ Home-visiting programs improved all outcomes: all-cause readmissions, HF-specific readmissions, the composite endpoint (which comprises all-cause readmission or death), and mortality.
- ✓ Multidisciplinary-HF clinic-based interventions reduced all-cause readmissions and mortality but not the composite endpoint.
- ✓ Structured telephone support reduced HF-specific readmissions and mortality but not all-cause readmissions or the composite endpoint.
- ✓ Multicomponent interventions such as home-visiting programs and multidisciplinary-HF clinic interventions were effective in reducing all-cause readmissions and mortality.
 - » The key components of these interventions included HF education emphasizing self-care, HF pharmacotherapy emphasizing adherence, face-to-face contact after hospital discharge, mechanisms for postdischarge medication adjustment, and streamlined mechanisms to contact care delivery personnel.
 - » These interventions were of higher intensity and were delivered by teams of providers.

Considerations for Programs and Policies[†]

- ✓ The findings of this review might be informative for health care systems and insurance carriers (including Medicare Advantage plans and Medicare supplemental plans) seeking to implement programs to improve transitional care interventions for patients with HF.
 - » Health care systems may wish to start with multicomponent interventions, as these interventions are effective on all-cause readmissions and mortality.
- ✓ Organizations that work with patients who have HF may consider informing these patients of the availability and benefits of transitional care interventions to prevent hospital readmissions.
- ✓ Readmission rates vary by both geographic location and insurance coverage. Having a better understanding of the role of these and other patient factors in postdischarge outcomes may aid health care systems in selecting specific transitional care interventions.

[†]These considerations were not evaluated in the systematic review but are offered to assist policymakers in applying this evidence.



Table 1: Categories and Definitions of Transitional Care Interventions

Category	Definition
Home-visiting programs	Home visits by clinicians, such as nurses or physician assistants, who deliver education, reinforce self-care instructions, perform a physical examination, or provide other care (e.g., physical therapy, medication reconciliation).
Structured telephone support	Patient followup, education, or self-care management (or combinations thereof) after discharge using telephone technology in a structured format (e.g., scheduled telephone calls with structured questions).
Telemonitoring	Remote monitoring of physiological data (e.g., electrical activity of the heart, blood pressure, weight, pulse, respiratory rate) with digital, broadband, satellite, wireless, or Bluetooth® transmission to a monitoring center with or without remote clinical visits (e.g., video monitoring).
Outpatient clinic-based interventions	Services provided in an outpatient clinic such as a multidisciplinary-HF clinic, a nurse-led HF clinic, or a primary care clinic. Multidisciplinary-HF clinics involve access to a multidisciplinary care team (cardiologists, nurses, advanced practice nurses, dietitians, and pharmacists). Nurse-led clinics are managed by a nurse and may also offer unstructured telephone support (e.g., a patient hotline) outside clinic hours.
Primarily educational interventions	Patient education (and self-care training) delivered before or upon hospital discharge by various personnel or modes of delivery (in-person, interactive CD-ROM, or video education) but without home visiting.
Other	Unique interventions or interventions that did not fit into any of the other categories (e.g., individual peer support for patients with HF or cognitive training for patients with HF and cognitive dysfunction).

CD-ROM = compact disc read-only memory; HF = heart failure

Table 2: Summary of Key Findings and Strength of Evidence for Transitional Care Interventions Versus Usual Care for HF

Intervention	Outcome at 3–6 Months	N Studies	N Subjects	Finding	NNT*	SOE
Home-visiting programs	All-cause readmission	9	1,563	Reduced	9	●●●
	HF-specific readmission	1	282	Reduced	7	●●○
	Composite endpoint**	4	824	Reduced	10	●●○
	Mortality	8	1,693	Reduced	33	●●○
	Number of hospital days at readmission	3	403	Reduced	NA	●○○
Structured telephone support	All-cause readmission	8	2,166	No benefit	NA	●●○
	HF-specific readmission	7	1,790	Reduced	14	●●●
	Composite endpoint	3	977	No benefit	NA	●○○
	Mortality	7	2,011	Reduced	27	●●○
	Number of hospital days at readmission	5	1,189	Reduced	NA	●●○
Telemonitoring	All-cause readmission	3	434	No benefit	NA	●●○
	HF-specific readmission	1	182	No benefit	NA	●●○
	Mortality	3	564	No benefit	NA	●○○
Multidisciplinary-HF clinic	All-cause readmission	2	336	Reduced	8	●●●
	HF-specific readmission	1	106	–	NA	○○○
	Composite endpoint	2	306	No benefit	NA	●●○
	Mortality	3	536	Reduced	18	●●○
Nurse-led HF clinic	All-cause readmission	2	264	No benefit	NA	●○○
	HF-specific readmission	1	158	–	NA	○○○
	Composite endpoint	1	106	–	NA	○○○
	Mortality	2	264	No benefit	NA	●○○
Primarily educational interventions	All-cause readmission	1	200	–	NA	○○○
	HF-specific readmission	1	223	–	NA	○○○
	Composite endpoint	2	423	No benefit	NA	●○○
	Mortality	2	423	No benefit	NA	●○○

HF = heart failure; N = number; NA = not available; NNT = number needed to treat to prevent readmission; SOE = strength of evidence; – = data are insufficient

* An NA entry for NNT indicates that the relative risk (95% confidence interval) was not statistically significant and that an NNT was not calculated.

** The composite endpoint comprises all-cause readmission or death.

STRENGTH OF EVIDENCE SCALE

- **HIGH**—High confidence that the evidence reflects the true effect. Further research is very unlikely to change our confidence in the estimate of effect.
- **MODERATE**—Moderate confidence that the evidence reflects the true effect. Further research may change our confidence in the estimate of effect and may change the estimate.
- **LOW**—Low confidence that the evidence reflects the true effect. Further research is likely to change our confidence in the estimate of effect and is likely to change the estimate.
- **INSUFFICIENT**—Evidence either is unavailable or does not permit a conclusion.

RESOURCES FOR CLINICIANS AND POLICYMAKERS

The clinician summary, *Transitional Care Interventions To Prevent Readmissions for People With Heart Failure*, is a free companion to this policymaker summary. For electronic copies of this policymaker summary, the clinician summary, and the full systematic review, visit www.effectivehealthcare.ahrq.gov/heart-failure.

