

Assuring a Continuum of Care for Heart Failure Patients Through Postacute Care Collaboration

An Integrative Review

Purnima Krishna, MSN, MBA, RN, NEA-BC

ABSTRACT

Purpose/Objectives: This review evaluates the published studies on how postacute care collaboration ensures a continuum of care and reduces heart failure (HF) readmissions.

Primary Practice Setting: An integrated literature review was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 Statement. PubMed and Cumulative Index to Nursing and Allied Health were searched for the keywords *heart failure AND (post-acute care OR transitional care OR skilled nursing facility OR rehabilitation facility OR home health agency) AND (readmission) AND (care coordination OR collaboration OR interprofessional OR partnerships)*. Seventy-nine studies were returned, and a reverse reference search yielded four studies. Of those studies, 14 were selected for critical appraisal of evidence. The practice settings of these studies were hospitals, homes, home health agencies, and skilled nursing facilities.

Findings/Conclusions: Multidisciplinary management of HF patients, high-impact transitional care interventions, and integration with postacute care facilities decreased HF 30-day readmissions. Collaborative models involving a skilled HF team, primary care physicians, and postacute care partners, and targeting postdischarge follow-ups positively impacted outcomes. Bundling interventions, such as home visits, follow-ups (telephone and/or clinic follow-up), and telecare, significantly impacted outcomes compared with their delivery in isolation.

Implications for Case Management Practice: Case management leaders are vital decision-makers and key stakeholders in building the collaboration with community partners. As case management roles extend to outpatient and ambulatory care, better opportunities emerge to coordinate services across settings. Key takeaways for the case management practice is to build a robust case management program spanning postacute care facilities, evidence-based treatment protocols, and infrastructure that supports seamless information sharing between sites.

Key words: *continuum of care, heart failure, postacute care, readmission rate, transitional care*

The number of U.S. adults living with heart failure (HF) is projected to reach 8 million by 2030, a 46% increase from 2012 (Virani et al., 2021). The cost of HF management, by comparison, is projected to increase by 127%, from \$30.7 billion in 2012 to \$69.8 billion by 2030 (Benjamin et al., 2019; Virani et al., 2021). A key cost driver for HF management is 30-day hospital readmissions (Van Spall et al., 2018), with one in five HF patients readmitted within 30 days of discharge (Earl et al., 2020; Khera et al., 2020). Reducing the 30-day readmission rate, a high priority for the Centers for Medicare & Medicaid Services (CMS), was the impetus for establishing the Hospital Readmission Reduction Program within the 2010 Affordable Care Act (CMS, 2020). Clinical management of HF patients has also improved by introducing guideline-directed medical therapies

that have reduced 30-day readmissions and mortality (American Heart Association, 2018; Maddox et al., 2021).

Interest in transitional care interventions has grown as a strategy to reduce 30-day readmissions and prevent adverse events during transition. Patients who transition from one care setting to another are

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Address correspondence to Purnima Krishna, MSN, MBA, RN, NEA-BC, 3065 Tahoe Place, San Ramon, CA 94582, (pkrishna2@dons.usfca.edu; pt_2977@yahoo.com).

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the most vulnerable to adverse events and medication-related errors (Earl et al., 2020; Forster et al., 2003). Models such as the Transition of Care Model, Care Transitions Interventions, and Project Better Outcomes for Older Adults Through Safe Transitions have decreased the 30-day readmission rate, especially for high-risk and older adult populations (Albert et al., 2015; Earl et al., 2020). The models bundle interventions of medical management, patient and family education, discharge packet, and follow-up after discharge with phone calls and or clinic visits to achieve a continuum of care.

Despite clinical improvements and transition of care (TOC) interventions, gaps in care coordination, which lead to rehospitalization, still exist for HF patients. The COVID-19 pandemic widened the care coordination gap when stay-at-home orders were implemented, and ambulatory clinic access was limited to exceptional cases (Czeisler et al., 2020). Establishing a continuum of care with high-impact interventions when patients are discharged, whether to home, home health agencies, or skilled nursing facilities, is crucial for improving HF outcomes.

METHODS

Aim

This integrative review aims to identify, critically analyze, and synthesize the evidence on how postacute care collaboration reduces HF readmissions. The PICOT question that guided the literature search was: In HF patients, how does postacute care collaboration for transitions of care compared with no collaboration affect the 30-day readmission rate?

Literature Search

The literature search was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 Statement (Page et al., 2021). A search of the PubMed and Cumulative Index to Nursing and Allied Health Literature (CINAHL) databases was performed with keywords and Boolean operator combinations (*heart failure*) AND (*post-acute care OR transitional care OR skilled nursing facility OR rehabilitation facility OR home health agency*) AND (*readmission*) AND (*care coordination*

OR collaboration OR interprofessional OR partnerships). The search was limited to studies published in English between 2016 and 2022. Seventy-nine articles were returned, 34 from CINAHL and 45 from PubMed, of which seven were duplicates. A reverse search of references yielded four additional articles of potential interest.

The titles and abstracts of 76 studies were reviewed for relevance to TOC from hospitals to postacute care facilities. The 20 selected for full-text review addressed the continuum of care, had some degree of multidisciplinary collaboration, electronic health record operability, and interventions applicable to HF patients after discharge. Studies were subsequently excluded if they had interventions by a single discipline, did not involve hospitals, or were case studies or non-peer-reviewed periodicals. Fourteen studies were selected for critical appraisal of evidence (see Figure 1). See Supplemental Digital Content 1 (available at: <http://links.lww.com/PCM/A15>), which illustrates the inclusion and exclusion criteria for study selection.

Data Quality

The Johns Hopkins Evidence-Based Practice Model for Nursing and Healthcare Professionals Appraisal Tools (Dang et al., 2022) were used to critically analyze each study for the level and quality of evidence. Eight research and six nonresearch studies were appraised. See Supplemental Digital Content 2 (available at: <http://links.lww.com/PCM/A14>), which summarizes studies in an evidence evaluation table.

Findings

Four themes emerged from the published studies on collaboration between acute and postacute care that met the inclusion criteria for this review:

1. multidisciplinary collaborative care models,
2. postdischarge follow-ups,
3. the flow of patient information, and
4. integration with postacute care facilities.

Multidisciplinary Collaborative Care Models

Collaboration among HF specialists, including advanced practice providers, registered nurses, primary

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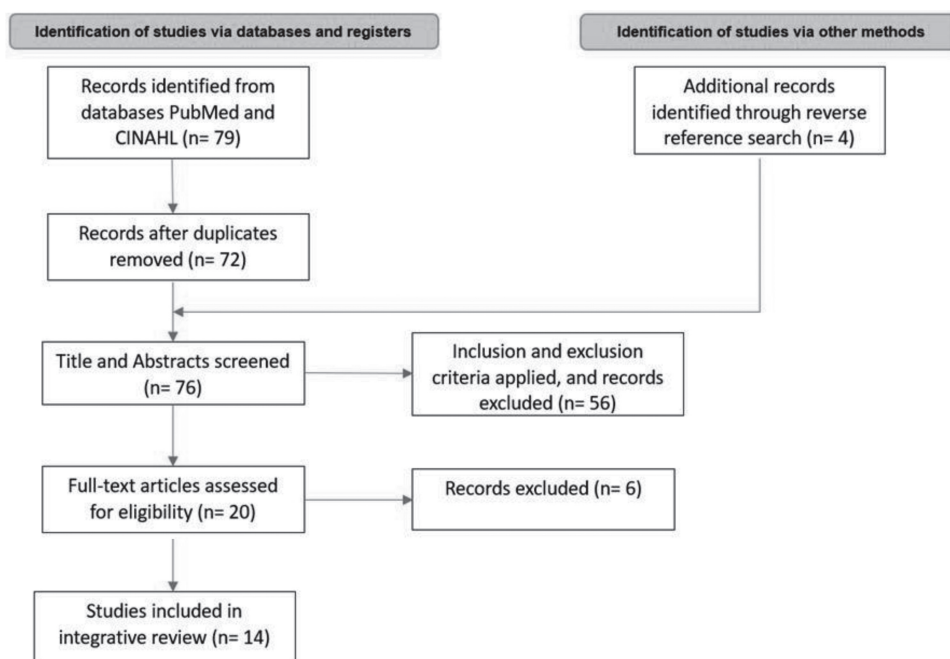


FIGURE 1
Literature search results.

care physicians (PCPs), pharmacists, and case managers, has been shown to reduce the 30-day HF readmission rate (Boykin et al., 2018; Driscoll et al., 2016; Hinch & Staffileno., 2021; Jepma et al., 2021; Naylor et al., 2018; Raat et al., 2021; Radhakrishnan et al., 2018; Summers & Atav, 2020). Driscoll et al. (2016) conducted a systematic review of 29 studies, 10 of which were randomized control trials. When PCPs shared patient care with a cardiologist, HF readmission rate and mortality rate decreased. A transitional care model developed by Naylor et al. (2018) had two multidisciplinary collaboration components:

1. coordinating care among clinicians and sites and
2. collaborating on the care plan with clinical teams, patients, and caregivers.

Boykin et al. (2018) conducted a quality improvement study investigating collaboration among TOC pharmacists, HF advanced practice providers, and community paramedics. The postintervention 30-day readmission rate for HF patients receiving collaborative care was 10.5%, compared with 23.5% with usual care. HF readmissions are reduced when providers internal and external to the organization collaborate on improving outcomes.

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A meta-analysis by Raat et al. (2021) noted a decrease in HF readmissions with multidisciplinary HF disease management programs and PCP involvement in the transfer of care, as compared to the usual care (relative risk 0.76, 95% confidence interval [0.62, 0.93]). By contrast, Jepma et al. (2021) found a nurse-coordinated “cardiac care bridge” transitional care program did not impact the readmission rates of cardiac patients 70 years of and older. This study suggested that high-intensity interventions may not be appropriate for high-risk older patients and they would benefit mainly from quality-of-life efforts in postacute care. Additional studies are needed to elucidate age-specific disease management programs.

Postdischarge Follow-Ups

Follow-ups with a patient after discharge are elemental to a continuum of care. A systematic review and meta-analysis by Vedel and Khanassov (2015) identified “home visits by a home health nurse” and “frequency of monitoring” as two critical transitional care interventions related to follow-up. Combining

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home visits with follow-ups such as telephone calls, clinic visits, and/or video visits produced “high-intensity” interventions that reduced readmission risk by 8%. Using Coleman’s Care Transition Model, Radhakrishnan et al. (2018) established a continuum of care process across hospitals and postacute facilities by arranging home visits and three follow-up phone calls within 30 days. Although no preimplementation readmission rate was provided, postimplementation rate of 7.1% is appreciably below the 20% rate cited in the literature (Earl et al., 2020; Khera et al., 2020).

Weerahandi et al. (2020) reviewed the impact of home health care (HHC) after skilled nursing facilities (SNFs) discharge home. The readmission rate for patients with HHC after SNF discharge was 22.8%, compared with 24.5% for those discharged home without HHC. The implications of HHC for HF patients were revealed in a descriptive study by Flanagan et al. (2018), which explored the predictors of 30-day readmissions after discharge from SNF. Patients with prior HF diagnosis had a three times higher chance of readmission within 30 days than other diagnoses.

The Flow of Patient Information

The flow of patient information between internal teams in the hospital and between care settings is critical for effective TOC (Adler-Milstein et al., 2021; Boykin et al., 2018; Samal et al., 2016). In a national survey of SNF Nursing Directors, Adler-Milstein et al. (2021) studied the quality of information shared by the hospitals when discharging patients to SNFs. For half of the respondents, almost 80% of information was missing; an average of 6 hr 30 min per week was spent communicating with the hospital to obtain information. In the Boykin et al. (2018) study, the inpatient HF team used a referral system to initiate postdischarge communication with the external groups and shared information through electronic health records. In a TOC pilot program between a

seven-hospital health system and a sizable postacute care provider, a transitions coach maintained the database of HF patients enrolled in the program and facilitated frequent communications between organizations (Radhakrishnan et al., 2018). Vedel and Khanassov (2015) recommended establishing postdischarge communication and improving the quality of information exchanged between the teams. In these studies, the means of communication between organizations were the electronic health record and/or specific personnel assigned to the task. Further studies on the efficacy of various means of communication and their integration into care transitions models are needed.

Integration With Postacute Care Facilities

Both acute care and postacute care hospitals are accountable for the postdischarge outcomes under the CMS reimbursement models. In the vertical integration model, organizations offer different levels of care, services, or functions either directly or through others. Gupta et al. (2019) examined the association between hospital-based SNFs (HBSNFs) and acute myocardial infarction, HF, and pneumonia readmission rates. Hospitals with HBSNFs had lower readmission rates from better integration of communication workflows and information technology resources. Hospitals that collaborated with certified home health agencies (HHAs) had lower readmission rates than hospitals that did not (Summers & Atav, 2020).

DISCUSSION

The review of literature on how postacute care collaboration can reduce 30-day HF readmissions surfaced several “takeaways” to inform improvements in the TOC for HF patients. Specific to readmissions, multidisciplinary management of HF patients, high-impact transitional care interventions, efficient flow of

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patient information, and integration with postacute care facilities decreased HF 30-day readmissions. A collaborative model that involved the HF team, PCP, and community partners and targeted postdischarge follow-ups with HF clinic or PCP positively impacted readmission outcomes. For care transitions, bundling follow-up interventions (i.e., home visits, telephone or clinic follow-up, and telecare) improved outcomes over delivery in isolation.

When home health services supported the next level of transition from SNF to home, readmissions decreased, but only 20% of SNF discharges received such services (Weerahandi et al., 2020). When applying evidence in the practice setting using transitional care models, adaptation knowledge is critical to balance strict adherence to the components and the degree of adaptation, so the value of the intervention will be maintained. Naylor et al. (2018) found that the organizations adapt TOC models locally based on motivation and availability of resources.

Strong integration between hospitals and postacute care settings was shown to reduce readmission and improve patient outcomes. The advantage of vertically integrated health systems is service coordination and strong governance. As the strategies for organizational structure evolve, interorganizational networks between hospitals, SNFs, and HHAs may achieve the best integration.

Limitations

Collaboration of hospitals with postacute care facilities is not well studied relative to interventions administered by either hospitals or postacute care facilities. Unless organizations are part of the bundled payment or accountable care organizations, evidence of how collaboration is developed and sustained between nonintegrated organizations is lacking. By 2022, the CMS is developing seven episode-based cost measures through its Merit-based Incentive Payment System (CMSHHSgov, 2022). One measure aims to

reduce episode-based costs for HF outpatient treatment and management. Hospitals participating in the Merit-based Incentive Payment System will need to optimize TOC interventions and reduce readmissions to limit the episode cost. The recent expansion of telehealth during COVID-19 may influence the postdischarge follow-up practices for hospitals and postacute care facilities. The studies reviewed preceded these emerging strategies to reduce readmissions through a continuum of care.

Implications for Case Management Practice

As case management roles extend to outpatient and ambulatory care, better opportunities emerge to coordinate services across settings (Bober & Ferket, 2021). The value-based payment model provides the impetus for healthcare organizations to pilot collaborative strategies with postacute care facilities by creating preferred partnership networks or participating in accountable care organizations (Kennedy et al., 2020). Key takeaways for the case management practice is to build a robust case management program spanning postacute care facilities, evidence-based treatment protocols, and infrastructure that supports seamless information sharing between sites. Case managers can ensure efficient flow of patient information by adopting innovative health information technology and ensuring information quality is maintained when referrals are placed for transitions (Hinch & Staffileno., 2021). They are better positioned to identify patients at risk for poor transitions and match their needs to an appropriate discharge setting (Adler-Milstein et al., 2021; Boykin et al., 2018; Samal et al., 2016). Case management leaders are vital decision-makers and key stakeholders in building the collaboration with community partners. Coordination of care across the continuum improves patient outcomes and reduces unnecessary readmissions for the patients.

Key takeaways for the case management practice is to build a robust case management program spanning postacute care facilities, evidence-based treatment protocols, and infrastructure that supports seamless information sharing between sites.

CONCLUSIONS

The evidence supports collaboration as a practice change for the TOC and reduction of 30-day readmissions for HF patients. Establishing a continuum of care with high-impact interventions when patients are discharged to home, home health agencies, and SNFs is crucial for improving HF outcomes. Collaboration can bring synergy to independent practices for managing HF patient care but is not easily established in disconnected care systems. The evidence indicates that optimizing care systems at the macro level of hospitals and postacute care facilities is the best way to ensure a continuum of care and reduce HF readmissions.

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Purnima Krishna, MSN, MBA, RN, NEA-BC, is the Director of Quality for a Cardiovascular Service Line in Palo Alto, California. She is in the Executive Leadership DNP Program at the University of San Francisco, and has 21 years of health care quality, risk management, and critical care experience.

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