



# Review of Care Coordination for Heart Failure Patients in Transitional Care: A Complex Systems Perspective

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## Background

- ❖ Post-discharge care fragmentation is costly and leads to poor health outcomes [1].
- ❖ Care coordination is key to improving patient experience and care quality, reducing costs, and ensuring continuity of care [2].
- ❖ Mechanisms and factors of care coordination are highly complex and variable, making it difficult to compare transitional care interventions [3].
- ❖ Viewing transitional care from a complexity science lens, with a focus on social networks, facilitates describing this variance [4].

## Purpose

To understand the care coordination activities and strategies used in recent transitional care interventions, and how these interventions improve readmissions rate from a social network conceptual framework. [5]

## Social Networks [5]

<b>Nodes:</b> People in networks	<b>Links:</b> Connections
<b>Key Nodes:</b> Essential person in a network structure who is critical for relational and informational consistency.	<b>Rewiring networks:</b> A strategy that increases information transfer and network cohesion by adding links or strengthening links.

## Methods

- ❖ Data base searched: PubMed, Scopus, and CINAHL
- ❖ Key words: coordination, geriatric, transitions and heart failure
- ❖ Inclusion criteria: U.S.-based studies published after 2010
- ❖ Studies synthesized using the Garrard Matrix Method [6]

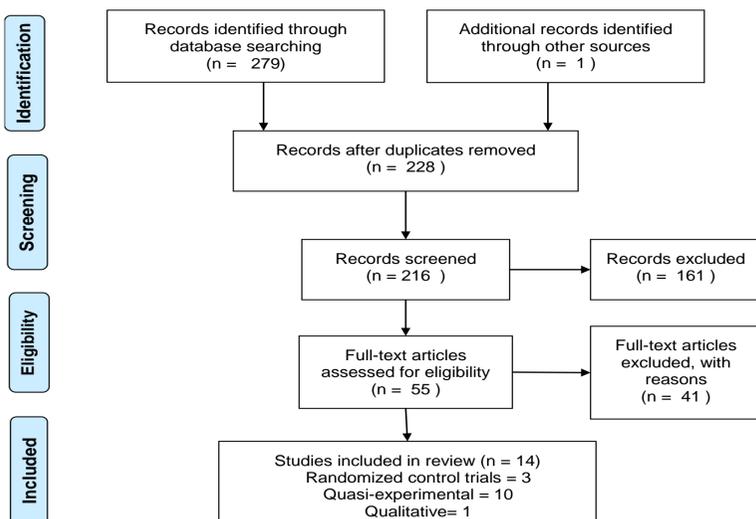
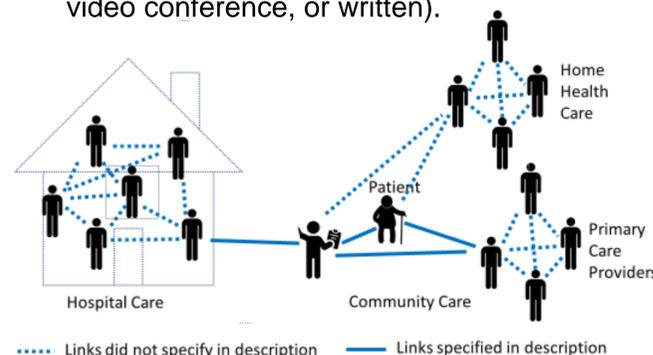


Figure 1. PRISMA flow diagram of research strategy

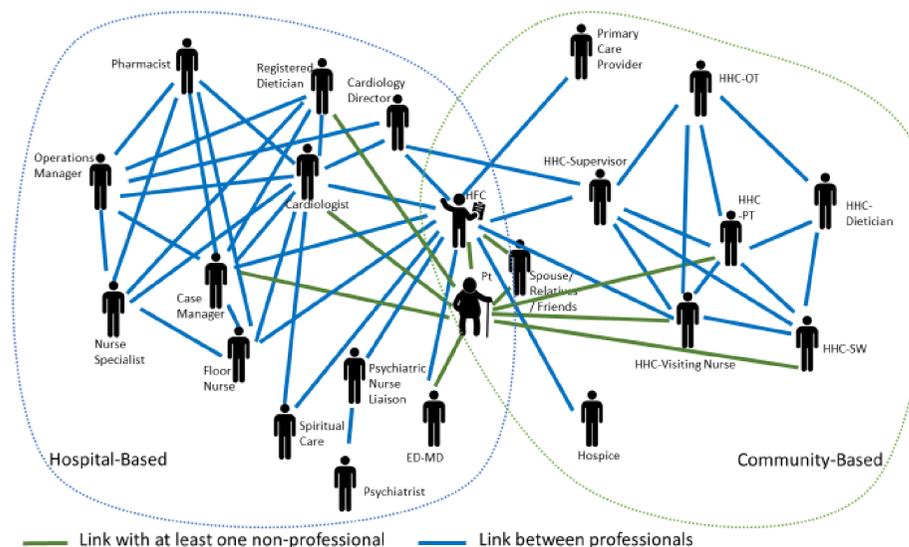
## Results

- ❖ Sample sizes of studies (N=14) ranged from 36 to 715.
- ❖ Three studies specifically targeted underserved populations, included racially and ethnically diverse participants.
- ❖ Most studies selected post-discharge readmission rate (30-day readmission rate N=12) as the primary outcome measure.
- ❖ Four studies showed no significant improvement in reducing readmission rate.
- ❖ **Nodes** involved patients and different professional roles across care settings:
  - ❖ 7 studies used a triad node structure for the network, including patients, key interventionists, and primary care providers.
  - ❖ 1 study used a complex network structure with N ≥ 23 nodes for study
  - ❖ Others (N=6) used a network structure in-between these amounts.
- ❖ **Links** involved:
  - ❖ Face-to-face links when connecting within the same settings.
  - ❖ Virtual communication when connecting across settings (i.e. telephone, video conference, or written).



### Example 1. Triad Network Structure (N=7 studies):

- ❖ Key node in a bridge position connecting network clusters.
- ❖ Descriptions of nodes and links beyond the triad were limited.



### Example 2. Complex Network Structure (N=1 study):

- ❖ Key node in a central position; Information and relationships were transferred and sustained through multiple links across settings.

## Results (cont.)

- ❖ Common component of interventions (N=13 studies) was individuals (N=10 studies) or teams (N=3 studies) that functioned as **Key Nodes**:
  - ❖ Critical for information transfer and relational continuity
  - ❖ Linked patients in new ways to other healthcare professionals.
- ❖ Multiple ways in which interventions **Rewired the Network**:
  - ❖ Informational (N=14 studies): Virtual communication (tele-coaching, tele-monitoring, phone/video communication, or written material).
  - ❖ Relational (N=8 studies): Home visit, bring patients to community clinics.

## Discussion

- ❖ Overall, transitional care interventions utilized and improved connectivity and consistency of care delivery by establishing stronger collaborative networks and addressing informational, relational, and systematic challenges in care transitions.
- ❖ Social network analysis is applicable to understanding care coordination, and can provide valuable insights into characteristics of interventions.
- ❖ Transitional care interventions utilize key nodes to rewire care networks through implementing coordination activities.
- ❖ Characteristics of people in the network should be further studied, including patients and providers
- ❖ Capacity of network rewiring may depend on preexisting network structure and quality.
- ❖ Coordination activities should be strategically implemented based on network structure to better improve efficiency and effectiveness.
- ❖ Transitional care interventions may benefit from the application of a social network lens to identify and describe mechanisms of action.

## References

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