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The role of context in care transition interventions for older adults: A realist synthesis protocol

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ABSTRACT

Introduction. Approximately 30-50% of older adults have 2 or more conditions and are referred to as multi-morbid or complex patients. These patients often require visits to various healthcare providers in a number of settings and are therefore susceptible to fragmented healthcare delivery while transitioning to receive care. Care transition interventions have been implemented to improve continuity of care, however, current evidence suggests that some interventions or components of interventions are only effective within certain contexts. There is therefore a need to unpack the mechanisms of how and within which contexts care transition interventions and their components are effective. Realist review is a synthesis method that explains how complex programs work within various contexts. The purpose of this study is to explain the effect of context on the activities and mechanisms of care transition interventions in medically complex older adults using a realist review approach. **Methods and Analysis.** This synthesis will be guided by Pawson and colleagues' 2004 and 2005 protocols for conducting realist reviews. The underlying theories of care transition interventions were determined based upon an initial literature search using relevant databases. English-language peer-reviewed studies published after 1993 will be included. Several relevant databases will be searched using medical subject headings and text terms. A screening form will be piloted and titles, abstracts, and full text of potentially relevant articles will be screened in duplicate. Abstracted data will include study characteristics, intervention type, contextual factors, intervention activities, and underlying mechanisms. Patterns in Context-Activity-Mechanism-Outcome (CAMO) configurations will be reported. **Ethics and Dissemination.** Internal knowledge translation activities will occur throughout the review and existing partnerships will be leveraged to disseminate findings to frontline staff, hospital administrators, and policymakers. Finalized results will be presented at local, national, and international conferences, and disseminated via peer-reviewed publications in relevant journals.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This review will highlight which components of care transition interventions work and how they operate within various contexts, rather than considering intervention effectiveness as a whole entity
- Thorough retrieval of pertinent information about the intervention components, mechanisms, and study context (i.e., search for associated relevant publications and direct contact with study authors if required)
- Systematic screening protocol with all steps completed in duplicate
- Study quality will not be formally assessed
- Only English-language studies will be included

INTRODUCTION

By the year 2030, the percentage of persons over the age of 65 is predicted to double, with an estimated 20-25% of the world's population being 65 years of age and older.¹ Over 60% of adults aged 65 years and older have at least 1 chronic health condition, and approximately 30-50% have 2 or more conditions and are referred to as multi-morbid or complex patients.^{2,3} These complex older adults use extensive health care resources and often require visits to various healthcare providers in a number of settings.^{2,4-8} Evidence suggests that managing the transition between these providers and/or settings is difficult within current healthcare delivery systems, and that these transitions typically result in fragmented care.^{4-7,9}

Fragmented transitions can arise from a multitude of factors at the system (e.g., lack of formal institutional relationships), provider (e.g., incomplete discharge summaries), and patient (e.g., transportation concerns) level.^{4,7,10-15} It can also result in a multitude of adverse events, including medication errors, increased caregiver and patient burden, injuries, and increased hospital readmission rates.^{10,16-22} Coleman and Boult (2003) defined transitional care as "set of actions designed to ensure the coordination and continuity of healthcare as patients transfer between different locations or different levels of care within the same location".⁴ For the purpose of this study, interventions implemented to improve transitional care (i.e., care transition interventions) are considered synonymous with the above definition of transitional care.

Previous evidence has primarily focused on the implementation of care transition interventions to improve continuity of care for patients discharged from hospital to either home, home with care, or another institution.^{5,10,23} The primary outcome of interest for many of these interventions is 30-day acute care readmission rates, since this metric is an indicator of quality of care and is tied to acute care financial incentives in some delivery systems.¹⁰ The two most widely disseminated models of care transition are Coleman and colleagues (2006) and Naylor and colleagues (1993, 2004)

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3 interventions.^{6,24,25} Coleman's care transition intervention uses a dedicated healthcare
4 provider as a transition coach to help patients self-care in four areas post-hospital
5 discharge: medication management, understanding potential problems or "red flags",
6 scheduling follow up care, and engaging with providers by asking about their
7 conditions.^{24,25} Naylor's model employs a dedicated nursing professional (e.g.,
8 advanced practice nurse) to help patients self-care (similarly to Coleman's model), but
9 also includes provision of a formalized follow-up care plan and regular home visits and
10 telephone calls.^{6,24,26} According to their landmark randomized controlled trials, both
11 Coleman's and Naylor's models resulted in a 30-50% decrease in hospital
12 readmissions.^{6,25,26} Furthermore, Naylor's care transition intervention has been effective
13 when applied specifically to elderly patients who are high-cost users and/or at high-risk
14 for hospital readmission.^{6,24,26}

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28 Other care transition models, some of which were adapted from either Coleman
29 or Naylor's model, have been developed and implemented in a variety of settings with
30 varying effectiveness.^{5,10,23,27} A 2011 systematic review by Hansen and colleagues
31 compared and summarized 43 studies that evaluated the effectiveness of interventions
32 aimed at reducing 30-day hospital readmissions.²³ Hansen and colleagues concluded
33 that it was not possible to determine effectiveness of specific components of multi-
34 component interventions, nor was it possible to identify an intervention design that was
35 consistently effective across studies due to the heterogeneity of both intervention
36 components and the possible influence of context.²³ Similar results were found by
37 Naylor *et al* (2011) in a systematic review of 21 randomized controlled trials for care
38 transitions in older chronically ill adults, and Hesselink *et al's* (2013) systematic review
39 of 36 studies for care transitions from acute care discharge to primary care.^{5,28} These
40 findings suggest that some models or components of models are only effective within
41 certain contexts, and that the current evaluations of these models have limited utility in
42 deciding which intervention are best suited to particular patient groups or care
43 environments.²³

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Ultimately, these mixed findings may result in stakeholders, such as hospital administrators and policy makers, implementing seemingly effective interventions into contexts where they may not actually be effective. Although Burke and Coleman (2013) recently outlined five best practice principles for implementing cost-effective interventions, there is very little evidence regarding why certain transition interventions work in some settings (i.e., certain contexts) but not in others.²⁹ In essence, there is a need to unpack how and within which contexts care transition interventions and their components are effective.

Realist reviews are a synthesis method popularized in the United Kingdom by Pawson and colleagues in 2004.^{30,31} Realist reviews differ from more traditional synthesis methods, such as scoping and systematic reviews, because they explain how complex programs work or do not work within various contexts by exploring context, mechanisms, and outcomes in relation to a program's activities.³¹ They are grounded by the generative model of causality, meaning that to infer a causal relationship between an intervention and an outcome, the mechanism(s), the context, and the interaction between them must be understood.³¹ Within the past decade, realist reviews have been conducted to explore a number of complex health care interventions, including patient-reported outcome measures, self-management for chronically ill patients, and the relationship between poverty and health outcomes.³²⁻³⁴

The purpose of this study is to explain the effect of context on the activities and mechanisms of care transition interventions in medically complex older adults using a realist review approach. The overarching research question guiding this review is “What are the activities and underlying mechanisms in care transition interventions and how does context influence their role?”.

METHODS AND ANALYSIS

Overall approach and theories of care transitions

This synthesis will be guided by Pawson and colleagues 2004 and 2005 protocols for conducting realist reviews³¹. The underlying theories of care transition interventions were determined based upon an initial literature search using relevant databases (e.g., Medline [OVID interface], CINAHL [EBSCO interface]) conducted by two study team members [KBP and NEL].³⁵ Underlying theories were defined as the program theories (i.e., “small theories”) that when combined, form the overarching program theory of care transition interventions.^{30,36} This initial search found that the Coleman (2003) and Naylor (2004) models of care transition interventions (described above) are widely disseminated. The program theory that emerges from these two interventions suggests that by providing support before, during and after the transition from one provider and/or institution to another, patients will receive timely and appropriate care, resulting in decreased likelihood of adverse events. Although these two interventions are a good starting point for describing care transition program theories, there are a number of care transition theories with varying context, activities, mechanisms, and outcome configurations^{6,25,31,37}. This review will unpack the context, activity, mechanism, and outcome configurations (CAMOs) underlying these theories of transitional support³⁰.

For the purpose of this study, context is defined as the organizational or environmental “back-drop” of a care transition intervention that triggers or modifies activities’ actions (e.g., strength of networks between hospital staff and community-based providers).³⁸ Activities are defined as the processes, tools, events, technology, and actions that are an intentional part of the program implementation³⁹. The definition of a mechanism is borrowed from Astbury and Leeuw (2010), who define mechanisms as “underlying entities, processes, or structures which operate in particular contexts to generate outcomes of interest”⁴⁰. Astbury and Leeuw identify three key characteristics of mechanisms: (1)

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3 Mechanisms are usually hidden; (2) Mechanisms are sensitive to variations in
4 contexts and (3) Mechanisms generate outcomes.⁴⁰ Outcomes are defined as
5 changes in program participants' health care utilization, subjective or objective
6 health status knowledge, skills, satisfaction or other outcomes as a result of
7 intervention activities occurring in a given context.^{38,39} These include both intended
8 and unintended outcomes of the intervention.³⁸

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14 Lastly, for the purpose of this study, a care transition intervention will be
15 operationalized as any pre-discharge, post-discharge or bridging program that is
16 targeted at improving the transition from hospital discharge to home-based care
17 management²³.

21 22 23 24 *Eligibility Criteria*

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27 This review is limited to care transition interventions targeted at older complex
28 patients who have been discharged from acute care to home. Older patients were
29 defined as populations described as "older adults" or ages 50 and over. Interventions
30 comprised solely of disease-specific activities (e.g., measurement of brain natriuretic
31 peptide before heart failure discharge) will be excluded. Interventions comprising of
32 only one activity (e.g., medication reconciliation only) will also be excluded. These
33 exclusion criteria were chosen for two reasons: first, these types of interventions are
34 likely targeting a different population than our population of interest (i.e., not
35 necessarily complex older adults); second, one aspect of interest about the impact of
36 context in care transitions is how context impacts the interaction or added impact of
37 intervention activities. All study designs will be included (e.g., observational studies,
38 randomized controlled trials, qualitative studies). Only English-language peer-reviewed
39 studies published after 1993 will be included. Despite the potential differences from the
40 current healthcare contexts, studies published from 1993 onward were included to
41 ensure studies published in the era of Naylor *et al* 1994's randomized controlled trial
42 were captured²⁶.

Search strategy and study selection

The search strategy was developed and will be implemented in collaboration with an experienced information scientist. MEDLINE (OVID interface), EMBASE (OVID interface), CINAHL (EBSCO interface), AgeLine (EBSCO interface) and Cochrane Central Register Controlled Trials (Cochrane Library) databases will be searched using medical subject headings (MeSH) and text terms related to care transitions for older adults³¹. Initial development of the search strategy yielded the following MeSH terms: “Patient Discharge” OR “post discharge” OR “postdischarge” OR “after care” AND “continuity of patient care” OR “care transition” OR “discharge planning” OR “discharge plan”. The search strategy will be reviewed iteratively by the study team to ensure the scope is adequate to answer the overarching research question.

Not surprisingly, Hansen *et al's* (2011) systematic review of care transition interventions that reduce 30-day re-hospitalization concluded that the studies reviewed did not adequately describe interventional components or context sufficiently for cross-study comparisons to be made.²³ It is therefore acknowledged that detailed information on certain aspects of interventions that may be pertinent to answering our overarching research question, particularly information on contextual factors and mechanisms, is likely not reported. To extract this relevant but unpublished information, a search for associated and relevant publications will be conducted, if required, using the following steps: (1) A Scopus search of the initial publication followed by examination of all citing manuscripts; (2) Pubmed (OVID interface) search using the corresponding author's name; (3) The first two pages of a Google search for the name of the study (for possible grey literature); (4) A review of the Corresponding Author's ResearchGate publications (to capture unpublished information such as abstracts). If pertinent information is still unavailable, corresponding authors will be contacted via email or telephone.

Study Selection and Data Collection

A study inclusion screening form will be developed and piloted by two reviewers (KBP and NEL) on approximately 1% of articles. Titles and abstracts will then be screened using the form for potentially relevant articles (level 1 screening). Another screening form for full-text review will then be piloted on approximately 1% of articles by two reviewers (KBP and NEL). Full text of potentially relevant articles will then be retrieved and screened to determine final inclusion criteria (level 2 screening). The reasons for exclusion will be recorded. All studies at both level 1 and level 2 will be screened in duplicate by two reviewers (TV, AIK) to increase reliability of the application of the study inclusion criteria.^{31,35,41,42} Any discrepancies will be resolved by a third reviewer (JI) who is knowledgeable in the field of care transition interventions.

Abstracted data will include study characteristics (e.g., publication year, study design); intervention type (e.g., bridging, pre-discharge); contextual factors (e.g., study setting, designation of intervention staff); intervention activities (e.g., medication reconciliation); and underlying mechanisms (e.g., relationship development). Study quality will not be formally assessed as this is a realist review, however information on study rigour (e.g., trustworthiness of methods) will be noted³⁰⁻³².

Synthesis

Study characteristics, target populations, and a high-level description of each care transition intervention will be summarized by intervention type (i.e., pre-discharge, bridging, or post-discharge intervention). Context-activity-mechanism-outcome (CAMO) configurations will then be identified for each study with the ultimate goal of determining how each care transition activity works or does not work and within which contexts.³² These configurations will be iteratively created by two study team members and refined by the entire study team throughout the synthesis process.³² First, context-

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3 activity-mechanism-outcome chains will be examined to see which patterns are
4 recurrent.³² These recurrent patterns and mechanisms will then be inspected to identify
5 potential CAMO configurations.³² If information is conflicting between studies, priority
6 will be given to studies that have described putative mechanisms in-depth.³² Finalized
7 recurrent CAMO configurations will then be reported. The delivery of health care has
8 changed over the study time period, and the impact of this change in relation to study
9 findings will be discussed.
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17 18 **ETHICS AND DISSEMINATION**

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20 Ethics is not required for this realist review. Internal knowledge translation
21 activities (e.g., within the Health System Performance Research Network) will occur
22 throughout the review to gather experts' opinions on data analyses and to create
23 general awareness of the project. Existing partnerships with acute care institutions (e.g.,
24 University Health Network) and the Ontario Ministry of Health and Long-Term Care will
25 be leveraged to disseminate findings to frontline staff, hospital administrators, and
26 policymakers. Finalized results will be presented at local (e.g., Health Quality Ontario),
27 national (e.g., Canadian Association of Health Service and Policy Research), and
28 international (e.g., AcademyHealth Annual Research Meeting) conferences, and
29 disseminated via peer-reviewed publications in relevant journals.
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40 This realist review will address an existing knowledge gap by summarizing
41 evidence on how context impacts activities, mechanisms, and effectiveness of care
42 transition interventions. By understanding how these interventions work and how
43 context impacts their effectiveness, stakeholders can make evidence-based decisions on
44 which interventions to implement within their local context.
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51 52 **CONTRIBUTORS**

53 KBP: Project conception, protocol development, writing and submission of manuscript

54 NEL: Project conception, protocol development, editing of manuscript

55 TV: Protocol development, editing of manuscript
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3 AIK: Protocol development, editing of manuscript

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5 JI: Protocol development, editing of manuscript

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7 WPW: Protocol development, editing of manuscript

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9 GRB: Project conception, protocol development, editing of manuscript

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18 19 20 **COMPETING INTERESTS**

21 None.

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ABSTRACT

Introduction. Approximately 30-50% of older adults have 2 or more conditions and are referred to as multi-morbid or complex patients. These patients often require visits to various healthcare providers in a number of settings and are therefore susceptible to fragmented healthcare delivery while transitioning to receive care. Care transition interventions have been implemented to improve continuity of care, however, current evidence suggests that some interventions or components of interventions are only effective within certain contexts. There is therefore a need to unpack the mechanisms of how and within which contexts care transition interventions and their components are effective. Realist review is a synthesis method that explains how complex programs work within various contexts. The purpose of this study is to explain the effect of context on the activities and mechanisms of care transition interventions in medically complex older adults using a realist review approach. **Methods and Analysis.** This synthesis will be guided by Pawson and colleagues' 2004 and 2005 protocols for conducting realist reviews. The underlying theories of care transition interventions were determined based upon an initial literature search using relevant databases. English-language peer-reviewed studies published after 1993 will be included. Several relevant databases will be searched using medical subject headings and text terms. A screening form will be piloted and titles, abstracts, and full text of potentially relevant articles will be screened in duplicate. Abstracted data will include study characteristics, intervention type, contextual factors, intervention activities, and underlying mechanisms. Patterns in Context-Activity-Mechanism-Outcome (CAMO) configurations will be reported. **Ethics and Dissemination.** Internal knowledge translation activities will occur throughout the review and existing partnerships will be leveraged to disseminate findings to frontline staff, hospital administrators, and policymakers. Finalized results will be presented at local, national, and international conferences, and disseminated via peer-reviewed publications in relevant journals.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This review will highlight which components of care transition interventions work and how they operate within various contexts, rather than considering intervention effectiveness as a whole entity
- Thorough retrieval of pertinent information about the intervention components, mechanisms, and study context (i.e., search for associated relevant publications and direct contact with study authors if required)
- Systematic screening protocol with all steps completed in duplicate
- Study quality will not be formally assessed
- Only English-language studies will be included

INTRODUCTION

By the year 2030, the percentage of persons over the age of 65 is predicted to double, with an estimated 20-25% of the world's population being 65 years of age and older.¹ Over 60% of adults aged 65 years and older have at least 1 chronic health condition, and approximately 30-50% have 2 or more conditions and are referred to as multi-morbid or complex patients.^{2,3} These complex older adults use extensive health care resources and often require visits to various healthcare providers in a number of settings.^{2,4-8} Evidence suggests that managing the transition between these providers and/or settings is difficult within current healthcare delivery systems, and that these transitions typically result in fragmented care.^{4-7,9}

Fragmented transitions can arise from a multitude of factors at the system (e.g., lack of formal institutional relationships), provider (e.g., incomplete discharge summaries), and patient (e.g., transportation concerns) level.^{4,7,10-15} It can also result in a multitude of adverse events, including medication errors, increased caregiver and patient burden, injuries, and increased hospital readmission rates.^{10,16-22} Coleman and Boulton (2003) defined transitional care as "set of actions designed to ensure the coordination and continuity of healthcare as patients transfer between different locations or different levels of care within the same location".⁴ In certain countries (i.e., United Kingdom) the care provided during transitions is also known as intermediate care.²³ For the purpose of this study, interventions implemented to improve transitional care (i.e., care transition interventions) are considered synonymous with the above definition of transitional care.

Previous evidence has primarily focused on the implementation of care transition interventions to improve continuity of care for patients discharged from hospital to either home, home with care, or another institution.^{5,10,24} The primary outcome of interest for many of these interventions is 30-day acute care readmission rates, since this metric is an indicator of quality of care and is tied to acute care financial

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3 incentives in some delivery systems.¹⁰ The two most widely disseminated models of care
4 transition are Coleman and colleagues (2006) and Naylor and colleagues (1993, 2004)
5 interventions.^{6,25,26} Coleman's care transition intervention uses a dedicated healthcare
6 provider as a transition coach to help patients self-care in four areas post-hospital
7 discharge: medication management, understanding potential problems or "red flags",
8 scheduling follow up care, and engaging with providers by asking about their
9 conditions.^{25,26} Naylor's model employs a dedicated nursing professional (e.g.,
10 advanced practice nurse) to help patients self-care (similarly to Coleman's model), but
11 also includes provision of a formalized follow-up care plan and regular home visits and
12 telephone calls.^{6,25,27} According to their landmark randomized controlled trials, both
13 Coleman's and Naylor's models resulted in a 30-50% decrease in hospital
14 readmissions.^{6,26,27} Furthermore, Naylor's care transition intervention has been effective
15 when applied specifically to elderly patients who are high-cost users and/or at high-risk
16 for hospital readmission.^{6,25,27}

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32 Other care transition models, some of which were adapted from either Coleman
33 or Naylor's model, have been developed and implemented in a variety of settings with
34 varying effectiveness.^{5,10,24,28} A 2011 systematic review by Hansen and colleagues
35 compared and summarized 43 studies that evaluated the effectiveness of interventions
36 aimed at reducing 30-day hospital readmissions.²⁴ Hansen and colleagues concluded
37 that it was not possible to determine effectiveness of specific components of multi-
38 component interventions, nor was it possible to identify an intervention design that was
39 consistently effective across studies due to the heterogeneity of both intervention
40 components and the possible influence of context.²⁴ Similar results were found by
41 Naylor *et al* (2011) in a systematic review of 21 randomized controlled trials for care
42 transitions in older chronically ill adults, and Hesselink *et al's* (2013) systematic review
43 of 36 studies for care transitions from acute care discharge to primary care.^{5,29} These
44 findings suggest that some models or components of models are only effective within
45 certain contexts, and that the current evaluations of these models have limited utility in
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deciding which intervention are best suited to particular patient groups or care environments.^{24,30}

Ultimately, these mixed findings may result in stakeholders, such as hospital administrators and policy makers, implementing seemingly effective interventions into contexts where they may not actually be effective. Although Burke and Coleman (2013) recently outlined five best practice principles for implementing cost-effective interventions, there is very little evidence regarding why certain transition interventions work in some settings (i.e., certain contexts) but not in others.³¹ In essence, there is a need to unpack how and within which contexts care transition interventions and their components are effective.

Realist reviews are a synthesis method popularized in the United Kingdom by Pawson and colleagues in 2004.^{32,33} Realist reviews differ from more traditional synthesis methods, such as scoping and systematic reviews, because they explain how complex programs work or do not work within various contexts by exploring context, mechanisms, and outcomes in relation to a program's activities.³³ They are grounded by the generative model of causality, meaning that to infer a causal relationship between an intervention and an outcome, the mechanism(s), the context, and the interaction between them must be understood.³³ Within the past decade, realist reviews have been conducted to explore a number of complex health care interventions, including patient-reported outcome measures, self-management for chronically ill patients, and the relationship between poverty and health outcomes.³⁴⁻³⁶

The purpose of this study is to explain the effect of context on the activities and mechanisms of care transition interventions in medically complex older adults using a realist review approach. The overarching research question guiding this review is “What are the activities and underlying mechanisms in care transition interventions and how does context influence their role?”.

METHODS AND ANALYSIS

Overall approach and theories of care transitions

This synthesis will be guided by Pawson and colleagues 2004 and 2005 protocols for conducting realist reviews, and reporting standards will follow Wong *et al* 2013 Realist and Meta-narrative Evidence Syntheses: Evolving Standards (RAMESES).^{33,37} Pawson's 5 steps for conducting realist review will be followed: 1) clarifying the scope of the review; 2) determining the search strategy; 3) study selection; 4) extracting data; 5) synthesizing the evidence and drawing conclusions.³²

The underlying theories of care transition interventions were determined based upon an initial literature search using relevant databases (e.g., Medline [OVID interface], CINAHL [EBSCO interface]) conducted by two study team members [KBP and NEL].³⁸ Underlying theories were defined as the program theories (i.e., "small theories") that when combined, form the overarching program theory of care transition interventions.^{32,39} This initial search found that the Coleman (2003) and Naylor (2004) models of care transition interventions (described above) are widely disseminated. The program theory that emerges from these two interventions suggests that by providing support before, during and after the transition from one provider and/or institution to another, patients will receive timely and appropriate care, resulting in decreased likelihood of adverse events. For the purpose of this study, a care transition intervention will be operationalized as any pre-discharge, post-discharge or bridging program that is targeted at improving the transition from hospital discharge to home-based care management²⁴.

We found that underlying theories in care transition interventions generally hypothesized a relationship between specific activities and outcomes, via a set of mechanisms that functioned differently across different contexts^{6,26,33,40}.

For the purpose of this study, context is defined as the organizational or environmental "back-drop" of a care transition intervention that triggers or

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modifies activities' actions (e.g., strength of networks between hospital staff and community-based providers).⁴¹ Activities are defined as the processes, tools, events, technology, and actions that are an intentional part of the program implementation"⁴². The definition of a mechanism is borrowed from Astbury and Leeuw (2010), who define mechanisms as "underlying entities, processes, or structures which operate in particular contexts to generate outcomes of interest"⁴³. Astbury and Leeuw identify three key characteristics of mechanisms: (1) Mechanisms are usually hidden; (2) Mechanisms are sensitive to variations in contexts and (3) Mechanisms generate outcomes.⁴³ Outcomes are defined as changes in program participants' health care utilization, subjective or objective health status knowledge, skills, satisfaction or other outcomes as a result of intervention activities occurring in a given context.^{41,42} These include both intended and unintended outcomes of the intervention.⁴¹

This review will use realist synthesis to unpack the context, activity, mechanism, and outcome configurations (CAMOs) underlying these theories of transitional support³². Unpacking these CAMO configurations will provide insight into which theories of transitional care work, how they work, and in which contexts.³³

Scope of the Review

This review is limited to care transition interventions targeted at older complex patients who have been discharged from acute care to home. A hard cut-off age criteria will not be used to exclude studies, however we will be targeting studies that describe their populations as "older patients", and may therefore include populations as young as aged 50 and over. . Interventions comprised solely of disease-specific activities (e.g., measurement of brain natriuretic peptide before heart failure discharge) will be excluded. Interventions comprising of only one activity (e.g., medication reconciliation only) will also be excluded. These exclusion criteria were chosen for two reasons: first, these types of interventions are likely targeting a different population than our population of interest (i.e., not necessarily complex older adults); second, one aspect of

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3 interest about the impact of context in care transitions is how context impacts the
4 interaction or added impact of intervention activities. All study designs will be included
5 (e.g., observational studies, randomized controlled trials, qualitative studies). Only
6 English-language peer-reviewed studies published after 1993 will be included. Despite
7 the potential differences from the current healthcare contexts, studies published from
8 1993 onward were included to ensure studies published in the era of Naylor *et al* 1994's
9 randomized controlled trial were captured²⁷.
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20 *Search strategy and study selection*

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23 The search strategy was developed and will be implemented in collaboration
24 with an experienced information scientist. MEDLINE (OVID interface), EMBASE (OVID
25 interface), CINAHL (EBSCO interface), AgeLine (EBSCO interface) and Cochrane Central
26 Register Controlled Trials (Cochrane Library) databases will be searched using medical
27 subject headings (MeSH) and text terms related to care transitions (including synonyms
28 such as intermediate care) for older adults.^{23,33} Initial development of the search
29 strategy yielded the following MeSH terms: "Patient Discharge" OR "post discharge" OR
30 "postdischarge" OR "after care" AND "continuity of patient care" OR "care transition"
31 OR "discharge planning" OR "discharge plan". The search strategy will be reviewed
32 iteratively by the study team to ensure the scope is adequate to answer the overarching
33 research question.
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45 Not surprisingly, Hansen *et al*'s (2011) systematic review of care transition
46 interventions that reduce 30-day re-hospitalization concluded that the studies reviewed
47 did not adequately describe interventional components or context sufficiently for cross-
48 study comparisons to be made.²⁴ It is therefore acknowledged that detailed information
49 on certain aspects of interventions that may be pertinent to answering our overarching
50 research question, particularly information on contextual factors and mechanisms, is
51 likely not reported. To extract this relevant but unpublished information, a search for
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3 associated and relevant publications will be conducted, if required, using the following
4 steps: (1) A Scopus search of the initial publication followed by examination of all citing
5 manuscripts; (2) Pubmed (OVID interface) search using the corresponding author's
6 name; (3) The first two pages of a Google search for the name of the study (for possible
7 grey literature); (4) A review of the Corresponding Author's ResearchGate publications
8 (to capture unpublished information such as abstracts). If pertinent information is still
9 unavailable, corresponding authors will be contacted via email or telephone.
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17 *Data Collection*

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20 A study inclusion screening form will be developed and piloted by two reviewers
21 (KBP and NEL) on approximately 1% of articles. Titles and abstracts will then be
22 screened using the form for potentially relevant articles (level 1 screening). Another
23 screening form for full-text review will then be piloted on approximately 1% of articles
24 by two reviewers (KBP and NEL). Full text of potentially relevant articles will then be
25 retrieved and screened to determine final inclusion criteria (level 2 screening). The
26 reasons for exclusion will be recorded. All studies at both level 1 and level 2 will be
27 screened in duplicate by two reviewers (TV, AIK) to increase reliability of the application
28 of the study inclusion criteria.^{33,38,44,45} Any discrepancies will be resolved by a third
29 reviewer (JI) who is knowledgeable in the field of care transition interventions.
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40 Abstracted data will include study characteristics (e.g., publication year, study
41 design); intervention type (e.g., bridging, pre-discharge); contextual factors (e.g., study
42 setting, designation of intervention staff (e.g., nurse), dedicated program staff (yes/no));
43 intervention activities (e.g., medication reconciliation); and underlying mechanisms
44 (e.g., relationship development). Study thickness will be determined to help inform the
45 study's quality and therefore the relative weight its' results should be given during data
46 synthesis.^{23,46} Information on study rigour (e.g., trustworthiness of methods) will also be
47 noted³²⁻³⁴.
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Synthesizing the evidence

Study characteristics, target populations, and a high-level description of each care transition intervention will be summarized by intervention type (i.e., pre-discharge, bridging, or post-discharge intervention). Context-activity-mechanism-outcome (CAMO) configurations will then be identified for each study with the ultimate goal of determining how each care transition activity works or does not work and within which contexts.³⁴ These configurations will be iteratively created by two study team members and refined by the entire study team throughout the synthesis process.³⁴ First, context-activity-mechanism-outcome chains will be examined to see which patterns are recurrent.³⁴ These recurrent patterns and mechanisms will then be inspected to identify potential CAMO configurations.³⁴ If information is conflicting between studies, priority will be given to studies that have described putative mechanisms in-depth.³⁴ Finalized recurrent CAMO configurations will then be reported with the intended purpose of highlighting the complexity (i.e., breadth and variety) of existing program theories of care transition, or perhaps discovering new program theories (i.e., “small theories”), thereby providing stakeholders with guidance as to what to consider when implementing these complex interventions.³³ The delivery of health care has changed over the study time period, and the impact of this change in relation to study findings will be discussed.

ETHICS AND DISSEMINATION

Ethics is not required for this realist review. Internal knowledge translation activities (e.g., within the Health System Performance Research Network) will occur throughout the review to gather experts’ opinions on data analyses and to create general awareness of the project. Existing partnerships with acute care institutions (e.g., University Health Network) and the Ontario Ministry of Health and Long-Term Care will be leveraged to disseminate findings to frontline staff, hospital administrators, and policymakers. Finalized results will be presented at local (e.g., Health Quality Ontario), national (e.g., Canadian Association of Health Service and Policy Research), and

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3 international (e.g., AcademyHealth Annual Research Meeting) conferences, and
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5 disseminated via peer-reviewed publications in relevant journals.
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9 This realist review will address an existing knowledge gap by summarizing
10 evidence on how context impacts activities, mechanisms, and effectiveness of care
11 transition interventions. By understanding how these interventions work and how
12 context impacts their effectiveness, stakeholders can make evidence-based decisions on
13 which interventions to implement within their local context.
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20 **CONTRIBUTORS**

21 KBP: Project conception, protocol development, writing and submission of manuscript

22 NEL: Project conception, protocol development, editing of manuscript

23 TV: Protocol development, editing of manuscript

24 AIK: Protocol development, editing of manuscript

25 JI: Protocol development, editing of manuscript

26 WPW: Protocol development, editing of manuscript

27 GRB: Project conception, protocol development, editing of manuscript
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38 (HSPRN), which is funded by a network grant from the Ontario Ministry of Health and
39 Long-Term Care (MOHLTC grant#06034).
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45 **COMPETING INTERESTS**

46 None.

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