



# Transitions of Care from Hospital to Home: An Overview of Systematic Reviews and Recommendations for Improving Transitional Care in the Veterans Health Administration

January 2015

## Prepared for:

Department of Veterans Affairs  
Veterans Health Administration  
Quality Enhancement Research Initiative  
Health Services Research & Development Service  
Washington, DC 20420

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## PREFACE

Quality Enhancement Research Initiative's (QUERI) Evidence-based Synthesis Program (ESP) was established to provide timely and accurate syntheses of targeted healthcare topics of particular importance to Veterans Affairs (VA) clinicians, managers and policymakers as they work to improve the health and healthcare of Veterans. The ESP disseminates these reports throughout the VA, and some evidence syntheses inform the clinical guidelines of large professional organizations.

QUERI provides funding for four ESP Centers and each Center has an active university affiliation. The ESP Centers generate evidence syntheses on important clinical practice topics, and these reports help:

- develop clinical policies informed by evidence;
- guide the implementation of effective services to improve patient outcomes and to support VA clinical practice guidelines and performance measures; and
- set the direction for future research to address gaps in clinical knowledge.

In 2009, the ESP Coordinating Center was created to expand the capacity of HSR&D Central Office and the four ESP sites by developing and maintaining program processes. In addition, the Center established a Steering Committee comprised of QUERI field-based investigators, VA Patient Care Services, Office of Quality and Performance, and Veterans Integrated Service Networks (VISN) Clinical Management Officers. The Steering Committee provides program oversight, guides strategic planning, coordinates dissemination activities, and develops collaborations with VA leadership to identify new ESP topics of importance to Veterans and the VA healthcare system.

Comments on this evidence report are welcome and can be sent to Nicole Floyd, ESP Coordinating Center Program Manager, at [Nicole.Floyd@va.gov](mailto:Nicole.Floyd@va.gov).

**Recommended citation:** Kansagara D, Chiovaro JC, Kagen D, Jencks S, Rhyne K, O'Neil M, Kondo K, Relevo R, Motu'apuaka M, Freeman M, Englander H. Transitions of care from hospital to home: a summary of systematic evidence reviews and recommendations for transitional care in the Veterans Health Administration. VA-ESP Project #05-225; 2014.

This report is based on research conducted by the Evidence-based Synthesis Program (ESP) Center located at the VA Portland Health Care System, Portland, OR, funded by the Department of Veterans Affairs, Veterans Health Administration, Office of Research and Development, Quality Enhancement Research Initiative. The findings and conclusions in this document are those of the author(s) who are responsible for its contents; the findings and conclusions do not necessarily represent the views of the Department of Veterans Affairs or the United States government. Therefore, no statement in this article should be construed as an official position of the Department of Veterans Affairs. No investigators have any affiliations or financial involvement (*eg*, employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties) that conflict with material presented in the report.

## EXECUTIVE SUMMARY

### INTRODUCTION

Health care systems are increasingly focused on efforts to reduce hospital readmissions; a wide variety of evidence exists on interventions to reduce readmissions, and national and local quality improvement efforts focused on transitional care have also been developed.

Transitional care interventions can be resource intensive, however, and can include many different components. For health systems that endeavor to improve the transitional care experience for their patients, it is a challenge to define the specific nature of interventions they should adopt, as well as which patient populations they should target.

This report broadly summarizes evidence examining the effects of transitional care interventions. In particular, the report identifies key themes that have emerged across the transitional care intervention literature that clarify which types of intervention are associated with reduced readmissions and/or mortality, whether intervention effects differ depending on the setting in which they are implemented, and whether effects differ across patient populations. Additionally, we outline potential policy implications based on the themes emerging from the evidence as well as our own clinical, research, and policy experience with transitional care within the Veterans Health Administration (VHA).

### METHODS

We conducted a review of published systematic reviews. We were broadly inclusive of many types of interventions, but focused on reviews that reported hospital readmissions as an outcome, regardless of whether it was the primary outcome. Within each patient population or intervention type of interest, we identified the most recent and comprehensive reviews meeting key quality criteria. We also examined the effects of transitional care activities within the context of the medical home, given its relevance to the current VA practice environment.

One investigator reviewed titles and abstracts for relevance. Two investigators independently reviewed potentially relevant full-text articles for inclusion. Any disagreements were resolved through consensus.

From each review we abstracted characteristics of the study population, outcomes, and intervention, as well as any data that would inform intervention implementation. Narrative syntheses were compiled for distinct patient populations and intervention types. These narratives were reviewed independently by each of the authors of this report, who then identified key themes in the evidence as well as recommendations for stakeholders based on their interpretation of the narratives. Policy implications were informed by interpretation of the evidence in the context of the clinical and research experience of different members of the study team.

### RESULTS

We reviewed 807 titles and abstracts from the electronic search, and identified an additional 125 from reviewing reference lists and performing manual searches for recently published and unpublished or ongoing studies. Eighty-three systematic reviews met our inclusion criteria and, of these, we selected 17 that were most recent and broadly scoped. Seven reviews focused on

specific patient populations, and another 10 reviews were organized according to intervention type.

### **Which transitional care intervention characteristics are associated with reductions in readmission rates?**

Overall, it is very difficult to identify specific intervention characteristics that are necessary for successful care transitions. There is some consistency among different patient populations and settings that successful interventions are more comprehensive, involve more aspects of the care transition, extend beyond the hospital stay, and are flexible enough to respond to individual patient needs. However, the strength of evidence supporting these overarching conclusions should be considered low because these conclusions are derived from indirect, post-hoc comparisons that include many different types of interventions implemented in a variety of ways among dissimilar populations and clinical settings. We found very little comparative effectiveness data.

### **Do the effects of transitional care interventions vary depending on the setting in which they are implemented?**

The design of an intervention and its effects may depend on factors such as the presence of a shared electronic medical record, access to community resources, integration of primary and hospital care, and the presence of a medical home. However, we found no evidence directly examining whether an intervention's effectiveness depends on the health system context within which it is implemented. Moreover, the transitional care literature generally provided only scant descriptions of the health system context of the interventions. We identified 9 studies conducted in VA settings. Overall, there is no clear pattern of effect differences between studies conducted in VA and non-VA settings.

#### *Transitions of care and the patient-centered medical home*

A 2012 review included 31 studies of PCMH interventions, which commonly included hospital-to-home transitional care coordination. The authors found moderate-strength evidence that PCMH interventions were associated with higher patient-reported levels of care coordination. They found low-strength evidence that PCMH interventions decreased emergency room use, though it is unclear which components of the PCMH mediated this effect. By contrast, they found low-strength evidence that PCMH had no effect on hospital admissions.

### **How does the choice of patient population targeted influence the effects of transitional care interventions?**

Many of the studies in these reviews identified high-risk patients for inclusion based simply on age, comorbidity, and/or prior utilization characteristics. The relative importance of careful patient selection compared to intervening in unselected populations is unclear, in part because most studies used some degree of patient selection and few reviews explicitly examined effects based on patient selection.

We found inconsistent results among reviews examining interventions in specific populations. General medical, geriatric, and congestive heart failure (CHF) patients have been the most frequently studied and there are several types of interventions that have been effective in these populations. On the other hand, there is little evidence that COPD patients benefit from

transitional care interventions, though most of the interventions took place only in the post-discharge setting. There was not enough good-quality literature in mental health or surgical populations to draw firm conclusions.

## DISCUSSION

### Summary of findings

We examined 17 systematic reviews across different patient populations and representing a variety of intervention types in order to provide a broad overview of the care transitions literature. While there have been numerous examples of interventions that reduced readmission rates, there were no patient population or intervention type categories within which transitional care interventions were uniformly successful.

It is not surprising that there are many sources of heterogeneity in a field as broadly defined as transitional care. Variation in populations studied, intervention characteristics, personnel, outcomes measured, and settings make it difficult to identify definitive recommendations for a specific intervention that should be broadly applied. Nevertheless, we were able to draw several generalizations from the literature.

- 1) Interventions that address more components of the care transition are probably better than those that address fewer.
- 2) Successful interventions tended to include the means to assess and respond to individual peri-discharge needs.
- 3) There is very little data supporting the effectiveness of interventions isolated to either the pre- or post-discharge settings. Successful interventions which were largely implemented in one setting often included components (such as home visits, a single point of contact, and/or telephone calls) that bridged settings. On the other hand, in select populations such as patients with CHF, there is some evidence supporting post-discharge interventions such as structured telephone support and multidisciplinary CHF clinics.
- 4) It is not clear to what extent and for whom post-discharge home visits are a necessary component of care transitions.
- 5) The vast majority of the care transitions literature has been hospital-focused, with very little literature examining the role of primary care teams during the transitions of care. There is a growing literature examining the effects of medical home interventions, most of which include cross-site care coordination activities; however, the characteristics of successful care transitions within the medical home context have not been well explored.
- 6) Many interventions that have demonstrated a reduction in readmission rates have included patients at high risk for readmission because of underlying comorbidities such as CHF and/or because of additional factors such as prior utilization.
- 7) Interventions designed to address the needs of patients with complex, chronic medical illness have been the best studied. It is unclear whether the success of some interventions studied in these patient populations reflects the content expertise that intervention personnel might develop in working with specific patient populations, higher baseline risk of poor outcomes among these patients, or sensitivity of chronic medical illness to transitional care improvements. However, there are many notable exceptions even among

patients with chronic medical illness – for example, we found little evidence of benefit in COPD populations, though many transitional care components were absent in these studies. There is little good-quality transitional care literature in mental health or surgical populations.

- 8) Reviews that examined effects by year of publication suggest that many of the interventions demonstrating benefit were conducted more than a decade ago.
- 9) In order to allow for better collation of results from trials, development of a standard taxonomy is needed. This taxonomy should include both population descriptors as well as intervention descriptors.

## **Policy implications**

In the main report, we present several policy implications along with a brief discussion and rationale for each. There are likely many steps of the care transition that, if missed, could hinder the quality of the care transition. We recommend each institution use a standardized approach to diagnose transitional care gaps. We have included a transitional care “map” that could be used for such assessments. We do not suggest that each step is necessary for every patient. We also suggest that the VHA could harness existing infrastructures such as PACT and home-based primary care to accomplish pieces of the care transition that had previously been accomplished in the intervention literature by additional transitional care nurses. Because some transitional care intervention activities can be resource intensive, we provide some discussion about the potential merits and pitfalls of risk assessment to identify high-risk patients for intervention. Finally, we suggest the VHA critically examine the current broad-based implementation of post-discharge telephone calls.

## **Future research**

In general, there is an overarching need for better evidence to guide selection and implementation of complex, multicomponent transitional care interventions in different settings. One of the major weaknesses of the transitional care literature is the marked variation in intervention definitions, timing of outcome follow-up, and descriptions of interventions and usual care. As VA conducts more research in this field, use of taxonomies to guide study design and description may help standardize reporting. In addition to this work, there are a number of more specific areas of investigation listed in the main report, including an urgent need for more work in mental health and surgical populations, a need for more comparative effectiveness research, and the development of continuous quality improvement mechanisms that integrate inpatient and outpatient personnel.

## **Limitations**

Our intent was to provide a broad overview of a complex literature, and to identify emerging themes that could help to define policy recommendations. However, we acknowledge that our chosen approach has a number of important limitations including its broad scope rather than in-depth analysis; the lack of formal strength of evidence ratings for our summary conclusions, though we suggest the overall strength of evidence be considered low; our use of readmissions outcomes as an inclusion criteria; and our reliance on previous systematic reviews which might not include more recently published studies. Our policy recommendations are informed by

evidence but also incorporate practical considerations and our own experience, and therefore are partly subjective in nature.

## **Conclusions**

The literature includes many different types of interventions, studied in varied populations and clinical settings, and implemented in different ways, but there is no commonly used taxonomy describing the various factors. Furthermore, there is very little comparative effectiveness data. It is, therefore, very difficult to identify specific intervention components and characteristics that are necessary for successful care transitions. In general, successful interventions are more comprehensive, touch on more aspects of the care transition, extend beyond the hospital stay, and are flexible enough to respond to individual patient needs. Transitional care interventions have not been well studied within integrated health systems and within the medical home context. Future work should focus on how best to incorporate outpatient teams into transitional care improvement processes.