REVIEW

# Care transition interventions in mental health

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**Purpose of review**
Addressing issues in transitioning patients from inpatient to outpatient care is one of the most salient themes in mental healthcare. We review current models and initiatives in general and mental healthcare and propose an intervention framework.

**Recent findings**
Using search terms in online databases and archives, we identified two broad categories of care transition interventions: models that have been put forward and tested in the area of general medical care and have potential for adaptation in mental health; and a more limited set of models that have been put forward and, to some extent, tested in the mental health context. On the basis of these categorical summaries, we propose nine components as core elements for interventions to address transitions in the mental health population more effectively.

**Summary**
This review of intervention models identified multiple models, trials and initiatives for care transition interventions for general medical populations, but few targeted specifically for mental health populations. We believe that proposing a conceptual framework specifying a core set of care transition intervention components can stimulate the development of interventions that specifically address patients with serious mental illness.

**Keywords**
interventions, mental health, psychiatric hospitalizations, rehospitalizations, transitions

## INTRODUCTION

High rates of potentially avoidable hospital readmissions are receiving increasing attention, as they are generally seen as indicators of poor coordination of care and inefficient use of healthcare resources. A 2009 study indicated that nearly 20% of US Medicare beneficiaries were rehospitalized within 30 days after discharge, at an annual cost of $17 billion [1]. Potentially preventable causes of overall hospital readmission include failure to adequately stabilize patients before release; overly brief stays/premature discharge; failure to coordinate and reconcile medications after discharge; inadequate communication among hospital personnel, patients, caregivers and community-based clinicians; and poor planning for care transitions [2▪].

For adults with severe mental illnesses (SMIs), poor transitions among care settings are especially problematic and can increase the risk of hospital readmission and symptom exacerbation [3]. Up to half of all patients who are discharged from a psychiatric hospital end up being readmitted within 1 year [4,5]. In the USA, fewer than half of discharged patients are connected with outpatient care discharge within 7 days, a widely accepted quality of care indicator [6▪▪].

Such transitions are a challenge worldwide. A review of psychiatric hospital readmission rates in Norway found that longer length of stay, appropriate discharge planning and follow-up visits after discharge predicted fewer readmissions [7]. Work in the Netherlands found that within 1 year after compulsory admission to a psychiatric hospital more than one-third of psychiatric patients were readmitted [8].

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## KEY POINTS

- For adults with severe mental illnesses (SMIs), poorly managed transitions among care settings are a serious problem for continuity of care and can increase the risk of hospital readmission and symptom exacerbation.
- Management of transitions for persons with SMI is a key element of effective care and involves the coordination of care across the often-siloed domains of mental health, general health and substance abuse.
- This review focuses specifically on transitions from inpatient to outpatient care, providing an overview of current care transition intervention frameworks and models, and identifies components suited for more effectively managing transitions among persons with SMI.

Management of transitions is a key element of effective care and involves the coordination of care across the often-siloed domains of mental health, general health and substance abuse. Systematic protocols and communication procedures for managing transitions have been shown to be effective in managing handoffs [9,10]. For the purposes of this review, we focus specifically on transitions from inpatient to outpatient care, although we recognize that some of the principles involved apply to other transitions. Although the importance of maintaining continuity of care from transition points in mental healthcare has been well documented, there is a limited amount of research on interventions to address this problem. This article aims to provide an overview of current care transition intervention frameworks and models, and to identify components suited for more effectively managing transitions among persons with SMI.

## BACKGROUND

The period directly following hospitalization carries many risks for persons with SMI, including symptom relapse and hospital readmission, an increased risk of homelessness and the possibility of violent behavior or suicide [3,11,12]. Although these risks are well documented, there are many inadequacies in the process of planning among care providers and their patients upon discharge. Models to address high-risk transitions have largely focused on the general medical patient population and few have been reported that are specifically focused on the mentally ill.

## METHODS

In order to accurately collect information on the area of transitions from hospital to outpatient care, we relied mainly on public databases, websites and reports from government and private sector and national organizations with research foci in this area, and snowballing to other related sources when relevant information was found in one of these areas. Search terms included healthcare transitions, transition models, intervention models, posthospitalization transitions, psychiatric hospitalizations, rehospitalizations, serious mental illness and mental healthcare. Databases included *Google Scholar* and *PubMed*. With each of the models identified we looked for information on the web or in the grey literature that described the models and provided technical assistance. With regard to published studies, we included only those studies that met the following criteria: first, published peer-reviewed models, which included a description of an intervention model for care transitions (either interventions for general medical populations not specific to mental health or those specific to mental health) as applied to hospital or interventions to prevent readmissions for people who were hospitalized (within this inclusion category are also informational or technical materials in support of implementing a relevant model); second, published or peer-reviewed articles that reported on a trial or demonstration study that evaluated a model.

We created a table of salient components based on analysis of the various elements incorporated across the models we identified. In addition, we suggest ways by which these components might be specifically tailored to meet the needs of persons with SMI, as well as their providers, during transitions.

## OVERVIEW OF INTERVENTION MODELS

Results are grouped into two categories: models that have been put forward and tested in the area of general medical care; and information about frameworks, conceptual models or descriptions of care transitions interventions (CTIs) specific to mental health. As a distinction needs to be made between a traditional 'model' and an 'initiative', we have operationalized both to more clearly distinguish between the two. A 'model' is a conceptual design for a set of components or structures designed to address an issue in transitions. An 'initiative' applies a model or a variation of a published model to the intervention context in which a health system, a health plan or a group of organizations undertakes a systematic effort to apply a model to specifically address an area of need in transitional care. It should be noted that not all initiatives are model-based, although the large majority have components that stem from existing models.

## Models and initiatives that have been put forward and tested in the area of general medical care

Elderly people are at a higher risk of hospital readmissions than the general population, generally related to suboptimal health, social and family factors and disease-specific issues [13–15]. As such, they have been a focus of several interventions aimed at addressing risks during care transitions in order to reduce rehospitalization rates. The work of Coleman on the CTI model is one of the most oft-used protocols of this type. The goal of the CTI is to provide patients with tools and support to promote knowledge and self-management of their conditions as they transition from hospital to home care (www.caretransitions.org).

The CTI model has four components: a patient-centered record (PHR), a structured checklist of critical activities to empower patients predischarge, a patient self-activation and management session with a transitions coach in the hospital and transition coach follow-up visits and phone calls. The intervention itself is further based on 'four pillars': medication self-management, use of a dynamic PHR, primary care and specialist follow-up, initiated by the patient; and patient knowledge of red flags ([16]; see www.caretransitions.org for a detailed description of CTI).

A recent randomized controlled trial of CTI by Coleman *et al*. [17] demonstrated a 30% reduction in hospital readmissions in an integrated health system setting. The US Centers for Medicare and Medicaid Services (CMS) followed up on these findings and funded a 14-state pilot project to further test the findings of using the CTI. Similarly to the trial by Coleman *et al*., CMS found that the intervention group that received CTI coaching had a significantly reduced readmission rate of 36.0% compared with the control group [18▪▪].

Another widely recognized model is the transitional care model (TCM), based on the work of Mary Naylor [19▪▪]. TCM is nurse-led and focuses on chronically ill high-risk older adults who have been hospitalized for common medical and surgical conditions, providing comprehensive in-hospital planning and home follow-up for these patients. The TCM provides technical assistance and a series of web-based training modules and tools to train staff (www.transitionalcare.org). Findings from a recent qualitative study evaluating an advance practice nurse (APN)-led intervention for cognitively impaired older adults supported previous research claims that complex patients greatly benefited from highly sophisticated care coordination [19▪▪].

Minnesota's Reducing Avoidable Readmissions Effectively (RARE) campaign is a statewide effort based on five evidence-based areas that reduce potentially preventable readmissions and uses metrics to track the participating hospitals' progress. The goal is to reduce preventable rehospitalizations by 20% by December 2012; they currently report being approximately one-third of the way to their goal (www.rarereadmissions.org).

The Society of Hospital Medicine is leading a national initiative known as Better Outcomes for Older Adults through Safe Transitions (BOOST). BOOST aims to identify high-risk patients upon admission and target risk-specific interventions; reduce 30-day readmission rates for general medicine patients; reduce length of stay; improve patient satisfaction; and improve information flow between inpatient and outpatient providers. Their website provides technical assistance and tools, including toolkits and case studies, to aid in implementation (http://www.hospitalmedicine.org/AM/Template.cfm?Section=Home&TEMPLATE=/CM/HTMLDisplay.cfm&CONTENTID=27659).

The Geriatric Resources for Assessment and Care of Elders (GRACE) targets primary care for low-income seniors and their primary care physicians, focusing on improving the quality of geriatric care, decreasing excess healthcare use and preventing long-term nursing home placement [20]. The GRACE support team is led by both a nurse practitioner and a social worker who collaborate with the larger multidisciplinary team. Rather than focusing just on short-term intervention around the acute transition, the GRACE initiative adapts the existing evidence to focus specifically on maintaining long-term support.

The Guided Care Model, based at Johns Hopkins, is centered on nurses trained in a 6-week, 40-h course. These guided care nurses are certified as such and work out of a primary care setting, interacting with both patients and family to educate and empower them as well as working with community agencies to ensure the patient receives outside support. Similar to GRACE, the Guided Care Model is also a long-term intervention, although it also includes a significant amount of transitional care components [21▪▪].

The Bridge Model was created by the Illinois Transitional Care Consortium and designed to connect medical and social support through linkage to home-based and community-based services, home health and primary care and is staffed by social workers. The Bridge Model is more short-term based, and the bridge intervention only provides support for 30 days posthospitalization. There are three intervention stages: predischarge, postdischarge and follow-up (www.transitionalcare.org/the-bridge-model).

Lastly, Project Re-Engineered Discharge (RED), housed at Boston University Medical Center, is an initiative that aims to develop and test strategies to improve hospital discharge processes in ways that improve patient safety while also reducing rehospitalization rates. This initiative makes use of virtual patient advocates, and focuses on 11 detailed components of a patient's care pathway, including strategies to engage patients in their own care. Their site also includes a toolkit for providers to assist with implementation, and they provide consulting to interested hospitals (www.bu.edu/fammed/projectred/components.html).

In addition to the above models and initiatives, the CMS Innovations Center (CMMI) has a broad mission to identify, develop, support and evaluate innovative models of care service delivery and payment. See http://innovations.cms.gov/index.html for an overview of current initiatives that include one on care transitions applying several of the models described above.

### Information about frameworks, conceptual models or descriptions of care transitions interventions in mental health

Our search identified few models or initiatives specifically applied to mental health, especially in the transition from inpatient to outpatient care. Although focused on preventing a patient from entering the next most intensive or restrictive level of mental health treatment as opposed to focusing on outpatients or rehospitalization, the Availability, Responsiveness, and Continuity (ARC) model [22] supports the improvement of social and mental health services for children. The ARC model addresses the 'gap' that results from the disconnect between treatments shown to work in controlled studies and their use in usual care, community-based, practice settings, and includes stakeholders when implementing a new approach, including payers, providers and consumers.

A behavioral health organization in Colorado has begun testing a Coleman-based patient-centered intervention model, the Transition Access Program (TAP), designed to improve continuity of care between settings, improve member safety, improve member outcomes and decrease hospital admissions (www.coaccess.com).

Another state-wide program to assist inpatients of psychiatric hospitals in transition to outpatient care and reduce readmissions is coordinated by Amerigroup Florida, a health plan. In 2007, Amerigroup identified above-average 30-day readmission rates, lengths of stay and care costs in eight of their 47 psychiatric hospitals. As a result of their efforts working with six of these hospitals, between 2008 and 2009 they were able to reduce the readmission from 17.7 to 14.9% (http://www.ahipresearch.org/pdfs/innovations2010.pdf; http://innovations.ahrq.gov/content.aspx?id=3082). The Offices of Mental Health and Alcoholism and Substance Abuse Services in the state of New York have also begun contracting with behavioral health organizations to begin constructing a model that will review inpatient behavioral health service use and discharge planning and follow-up for individuals with SMI (http://www.omh.ny.gov/omhweb/bho/). There has also been a new iteration of the Project RED model, with Boston University conducting an evaluation on the impact of adding a collaborative care for depression model to RED in an attempt to lower readmission rates for those patients with depressive symptoms.

## INTEGRATION OF MODEL CONCEPTS

The above review of intervention models and interventions identified multiple models, trials and initiatives for CTIs for general medical populations, but few targeted specifically for mental health populations. We believe that proposing a conceptual framework specifying a core set of care transition intervention components can stimulate the development of interventions that specifically address patients with SMI. A key element of a strategy would be considering how each component can be tailored for mental health. Ultimately, implementing these interventions will require going beyond the 'what' and delineating the 'for whom', 'by whom', 'where', 'when' and 'how'.

By 'what' we are referring to the group of components that create the model, and here are based upon nine salient themes from the existing models found: prospective modelling; patient and family engagement; transition planning; care pathways; information transfer/personal health records; transition coaches/agents; provider engagement; quality metrics and feedback; and shared accountability (see Table 1).

'For whom' is an elaboration on prospective modeling in which there needs to be thoughtful consideration about which population the model is targeting. Importantly, for individuals with SMI, caregivers, families and support systems need to be included as part of the target group.

'By whom' refers to what professionals (and caregivers and consumers themselves) play what roles in the model. As is the case with many of the models discussed, a team-based intervention is an effective part of an intervention model and is a vital element.

**Table 1. Adapting intervention components to transitions for severe mental illness populations**

| Component | Description | Transition phase or site of care (prehospital, hospital, outpatient, home) | Adaptation to mental health |
|---|---|---|---|
| Prospective modeling | Identify who is at greatest risk | Prehospital | Consider different patterns of morbid conditions within and among mental illnesses, substance use disorders and general medical/surgical conditions that might require somewhat modified interventions |
| Patient and family engagement | Authentic inclusion of patient and/or family in treatment plan | Prehospital, hospital, outpatient, home | Create engagement strategies that are adapted for individuals with SMI and are culturally competent. Find ways to include caregivers in more meaningful ways. The potential for lack of family support needs to be considered |
| Transition planning | Establish appropriate client-specific plan for transition to next point of care | Hospital | Consider how to efficiently utilize 'step down' mental health services such as day treatment and intensive outpatient care. Consider the trade-offs between length of stay for stabilization and risk of rehospitalization. Include assessment for need of primary care planning, as well as substance abuse and dual disorders. An assessment and a specific plan for housing and other social services should be included |
| Care pathways | Specific clinical/procedural guidelines and instructions (i.e. what to do when). Link with national guidelines | Hospital, outpatient, home | Consider predeveloped pathways for certain categories of patients and clinical pathways customized to the local environment. Certain patient groups may need additional focus on potentially suicidal patients; borderline personality disorder; first episode psychosis; comorbid substance abuse; chronically disengaged patient; and individuals with significant levels of chronic medical conditions |
| Information transfer/ personal health record | Ensuring that all information is communicated, understood and managed. Links patients, caregivers and providers | Hospital, outpatient, home | Establish protocols to ensure privacy and other regulations are followed. Establish pathways for information flow among providers, clinics (across mental health and general medicine) |
| Transition coaches/ agents | Roles/tasks, competencies, training and supervision should be specified. Training includes planning tools, red flags and client education strategies | Hospital, outpatient, home | Consider the need for mental health providers (e.g. social workers or counselors) to serve as transition agents or to train generic personnel in mental health tools and techniques. Consider use of health information technology (HIT) to augment/assist coaches |

**Table 1 (*Continued*)**

| Component | Description | Transition phase or site of care (prehospital, hospital, outpatient, home) | Adaptation to mental health |
|---|---|---|---|
| Provider engagement | Providers at each level of care should have clear responsibility and plan for implementing all transition procedures/ interventions. Communication and handoff arrangements should be prespecified in a formal way. At patient-specific level, providers at each level of care should know what plan is | Prehospital, hospital, outpatient | If access to psychiatrists is limited, consider nurse practitioners trained in psychotropic medication use or utilize patients' primary care provider and have psychiatrist support for consultation/ supervision (possibly utilizing HIT or telecommunication) |
| Quality metrics and feedback | Gather metrics on follow-up posthospitalization, rehospitalization and other feedback on process and outcomes and consumer/ family perspective. Feedback to (and use by) providers for quality improvement and accountability | Hospital, outpatient, home | Adapt care transition measures (three-item and 15-item scale) specifically to mental health. Develop and test mental health-specific structure, process and outcomes measures |
| Shared accountability | All providers share in expectations for quality as well as rewards/ penalties. Accountability mechanisms may include financial mechanisms and public reporting with regard to quality and value. Consumers/families share in accountability as well | Hospital, outpatient | Shared accountability applies not only to the dimension of inpatient and outpatient providers but also to behavioral health and general medical providers, clinical organizations and payers |

SMI, severe mental illness.

As the setting is important not only to understanding what type of implementations will be feasible, but also for appreciating what type of system the patients and providers are actively engaged in, the 'where' is an intrinsic part of the approach to implementing the model. Potential points of intervention exist at several time points; the 'when' could include prehospital, during inpatient treatment or postdischarge within outpatient and/or home settings. Deciding on appropriate intervals to gather metrics or benchmarks on patients during the intervention phase, or whether or not to have a stepped or multiple-phase process, should also be part of appropriate planning. Looking to standardized approaches to defining the point of observation, such as those incorporated in Healthcare Effectiveness Data and Information Set (HEDIS) measures – widely used by American health plans to measure performance – should be included in such planning.

Developing a structure for 'how' to implement the above components is an important step, and one that needs to consider the patient population, provider types, available staffing, training necessary for 're-tooling' staff roles and available resources for the treatment plan. A process that is well documented and includes tools for both provider activities and patient/family engagement should be included, as well as outcomes measures, fidelity and outcomes assessments, and plans for using the metrics. Plans for measuring the impact of an intervention that has not yet been seen in the literature or tested in a trial should include ways of testing whether or not the intervention is completed and the relevant outcome measures. An inclusion of policy initiatives aimed at reducing readmissions, including some that include incorporating care transitions, measures of readmissions in quality reporting and value-based purchasing, should also be considered. Various strategies for implementation for care models have been put forward and they incorporate some of these elements, including the Replicating Effective Programs ([23]; www.cdc.gov/hiv/topics/prev_prog/rep/) and Reach Effectiveness Adoption Implementation Maintenance (RE-AIM) (http://cancercontrol.cancer.gov/is/

reaim/) and National Institutes of Health (NIH) has an ongoing announcement for request for applications for investigators in this area.

## CARE TRANSITIONS INTERVENTION COMPONENTS

Incorporating the salient themes from the literature and trials on interventions, the following nine components are proposed as core elements for interventions to address transitions in this population more effectively.

An important part of determining what kind of outcome these components have not only on rehospitalizations but also on patient quality of care is to establish measures that determine the effectiveness of transitions. The National Quality Forum (NQF) is currently evaluating the specifications for a three-item Care Transition Measure (CTM-3) that would measure patients' perspectives on the coordination of their hospital discharge (http://www.caretransitions.org/documents/CTM3Specs0807.pdf). A more detailed 15-item CTM, developed by the Coleman's Care Transition Program, that has also undergone psychometric testing is being utilized (http://www.caretransitions.org/ctm_main.asp). For the purposes of using these measures for mental health, there is a considerable need to assess validity for this specific patient population.

## CONCLUSION

Preventable hospital readmissions and other difficulties in care transitions are worldwide problems, reducing quality and increasing costs. This is a special problem in behavioral health in which there has been much less model development and intervention testing for improvement of care transitions than in general medical care. With this review, we hope to encourage momentum of care transitions models to evolve into intervention adaptations for populations with specific needs by providing a conceptual framework help guide adaptation. Given the success of many of the existing models and initiatives in reducing readmissions in the general medical/surgical population, more work needs to be done to build on frameworks and testing of models to address the unique needs of the SMI population.

Challenges to implementation will likely be similar to those faced in the general medical population on which the models have already been tested, but with other items specific to the care of the SMI: training of staff, authentic integration of family and patient, acknowledging existing transition gaps in the current healthcare system and finding ways to address them, finding alternative ways of following up with clients outside the hospital and understanding the parameters of communication between the different sectors of mental health and general medical care and finding ways to address any problems. There also needs to be a focus on truly addressing who is at greatest risk of rehospitalization, and targeting efforts toward those patients. Setting, regional location and populations being served all need to be taken into account when implementing an intervention, and potential barriers to implementation need to be addressed early in the planning process. Any effective model will need to incorporate eligibility and payment issues associated with institutional discharge [24]. Effective transitional services, regardless of how well designed, cannot be helpful if they cannot be paid for.

It is unlikely that there will be one best model that fits all settings and situations; instead, a thoughtful approach to the unique characteristics of each healthcare system needs to be taken into account. Focus should be on what features of the model would be most important to implement as part of the intervention, and which ones are less essential. Care transition strategy cannot be completely disentangled from inpatient length of stay. The realities of ultrashort stays have to be considered in the context of at what point and for what conditions we hit diminishing returns.

Key elements of a research agenda in this area should include assessing and adapting care transition measures and developing measures for mental illness transitions; conducting formal trials of models that incorporate adaptations of these nine elements to assess their impact on readmissions on other outcomes – ideally trials might compare alternative models; assessing the role of behavioral health efforts with regard to readmissions for general medical conditions in which there are significant mental health comorbidities; developing and testing new policies, approaches for accountability and reimbursement that cut across three or more of the following silos – mental health, general health, substance abuse and social services; and developing and testing informatics tools and other new technologies that are specifically adapted to care transitions in mental health.

Another consideration is that those at the level of policy implementation in mental health may not be familiar with the existing evidence on the successful use of transition models to reduce rehospitalizations in general medical care. Researchers will need to engage members of the mental health services community, including directors of government agencies, nongovernmental and advocacy

organizations, as well as patients and families in the design, testing and implementation of such programs.


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## Conflicts of interest

*There are no conflicts of interest.*

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Papers of particular interest, published within the annual period of review, have been highlighted as:

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- ■■ of outstanding interest

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