



**National Association of State Mental Health Program Directors  
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## **Assessment # 3**

# **Care Transition Interventions to Reduce Psychiatric Re-Hospitalizations**

**September 15, 2015**

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# Care Transition Interventions to Reduce Psychiatric Re-Hospitalizations

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## Executive Summary

A literature search reveals the existence of a number of proven evidence-based approaches to ensuring continuity of care for various populations across transitions from hospital care to community-based settings. However, little research has been devoted to the most effective methods for transitioning individuals with serious mental illness (SMI) from institutional settings into the community and that lack of research has led, in part, to diagnoses of mental illness and substance abuse ranking among the most frequent causes for the re-hospitalization of Medicaid patients.

This paper reviews the components of the approaches taken in transitioning other populations in other settings and proposes an approach for adapting these components to the transitioning of individuals with SMI. It proposes utilizing a conceptual framework that focuses on the “what”, “for whom”, “where”, “by whom”, “when”, and “how” for designing programs with care transition interventions that might be most effectively applied in transitions of individuals in behavioral health inpatient settings into the community.

## Introduction

As the “triple aim”<sup>1</sup> has gained widespread recognition in healthcare, high rates of potentially avoidable hospital readmissions are receiving increasing attention, as they are generally seen as indicators of poor quality of care and inefficient use of healthcare resources. Management of transitions is a key concept for addressing re-hospitalization and involves the coordination of care across the silos of mental health, general health, and substance abuse, as well as social services.

While there are many types of transitions that individuals with mental illness may experience, for the purposes of this review, we focus specifically on transitions from inpatient to outpatient care. 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 how to maintain continuity of care across transitions.<sup>2</sup> This report is intended to provide an overview of care transition intervention frameworks and models applied in healthcare, and to identify components suited for more effectively managing transitions among persons with severe mental illnesses (SMI).

These issues are of particular importance for state mental hospitals and other state-run or -supported mental health services. A recent report by the National Association of State Mental Health Program

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<sup>1</sup> Berwick D.M., Nolan T.W., and Whittington J., The Triple Aim: Care, Health, and Cost. *Health Affairs* May/June; 27(3):759-769 (May 2008), <http://content.healthaffairs.org/content/27/3/759.full>.

<sup>2</sup> Gaynes B.N., Brown C., Lux L.J., Ashok M., Coker-Schwimmer E., Hoffman V., Sheitman B., and Viswanathan M., Management Strategies To Reduce Psychiatric Readmissions. Technical Brief No. 21. (Prepared by the RTI-UNC Evidence-based Practice Center under Contract No. 290-2012-00008-I.) AHRQ Publication No. 15-EHC018-EF. Rockville, MD: Agency for Healthcare Research and Quality (May 2015), [www.effectivehealthcare.ahrq.gov/reports/final.cfm](http://www.effectivehealthcare.ahrq.gov/reports/final.cfm).

Directors (NASMHPD) Medical Directors Council<sup>3</sup> noted that, to ensure continuity of care, state psychiatric hospital services should be integrated with the continuum of community services. As a correlate, admission and discharge planning should be a joint effort between the service recipient, state psychiatric hospital, and community providers.

A May 2015 Statistical Brief from the Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project (HCUP) on hospital readmissions involving psychiatric disorders<sup>4</sup> notes that:

*Hospital readmission within 30 days of discharge usually represents a negative clinical outcome for patients with mental disorders and may be due to factors such as poor access to adequate community-based aftercare and challenges in psychiatric medication adherence and self-care.<sup>5</sup> In 2011, mood disorders and schizophrenia had the highest number of all-cause 30-day hospital readmissions among adult Medicaid patients, reflecting the chronic, relapsing course of these conditions.<sup>6</sup>*

This report focuses on three major questions:

1. What are the components of existing frameworks/interventions to improve care transitions in general healthcare? To what extent have they been evaluated?
2. Have care transitions interventions (CTIs) been developed, adapted, and/or evaluated specific to the behavioral health population?
3. How can available intervention frameworks be modified to address transitions specifically focused on behavioral health populations who are hospitalized, in order to enhance continuity of care, reduce readmissions, and improve outcomes?

To answer these questions we conducted a systematic literature and web search, relying mainly on public databases, websites, and reports from government and private sector and national organizations focusing on these topics, and snowballing to other related sources when relevant information was found.<sup>7</sup> Search terms included “healthcare transitions”, “transition models”, “post-hospitalization transitions”, “psychiatric hospitalizations”, “re-hospitalizations”, “serious mental illness”, and “mental healthcare”. We also augmented the literature review by conducting an updated *Pubmed* search and examining recent AHRQ Technical Briefs and AHRQ/ACUP Statistical Briefs.<sup>8</sup>

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<sup>3</sup> Haupt M. B., The Vital Role of State Psychiatric Hospitals. Editors: Parks J. and Radke A.Q., National Association of State Mental Health Program Directors (NASMHPD) Medical Directors Council (2014).

<sup>4</sup> AHRQ/HCUP Statistical Brief #189: Hospital Readmissions Involving Psychiatric Disorders, 2012. Kevin C. Heslin, Ph.D. and Audrey J. Weiss, Ph.D (May 2015) (<http://www.hcup-us.ahrq.gov/reports/statbriefs/sb189-Hospital-Readmissions-Psychiatric-Disorders-2012.pdf>).

<sup>5</sup> Citing Vigod S.N., Kurdyak P.A., Dennis C.L., Leszcz T, Taylor V.H., Blumberger D.M., and Seitz D.P., Transitional Interventions to Reduce Early Psychiatric Readmissions in Adults: Systematic Review, *Br J Psychiatry*. 2013 Mar; 202(3):187-94 (March 2013).

<sup>6</sup> *Ibid.*

<sup>7</sup> Viggiano T., Pincus H.A., and Crystal S., Care Transition Interventions in Mental Health, *Curr Opin Psychiatry*. 2012 Nov; 25(6):551-8. (Epub: 2012/09/21. PMID: 22992544) (November 2012).

<sup>8</sup> Heslin, K.C. *et al.*; Gaynes B.N. *et al.*

For each of the models/interventions identified we collected information on the web or in the grey literature that described those models. We include a table of salient components based on analysis of the various elements incorporated across identified models and suggest ways by which these components might be specifically tailored to meet the needs of persons with SMI. Finally, we discuss approaches for incentivizing quality improvement activities to implement transition strategies and reduce readmissions through quality measurement and policy changes.

## Extent of the Problem

A 2009 study indicated that nearly 20 percent of Medicare beneficiaries were re-hospitalized within 30 days after discharge, at an annual cost of \$17 billion.<sup>9</sup> A separate recent AHRQ Statistical Brief examining 30-day re-hospitalization rates among adult Medicaid enrollees, as well as private insureds and Medicare enrollees, reported that two out of the top ten conditions with the largest number of readmissions among the Medicaid enrollees were mental health conditions and two were substance use disorders.<sup>10</sup> ([See Table 1](#)). The costs of these four categories of readmissions, not unexpectedly more prevalent among Medicaid enrollees, totaled \$832 billion.<sup>11</sup>

Key issues underlying these problems are that hospitals are incentivized to discharge patients as quickly as possible, which would be quite reasonable if there were well-connected, accessible, responsive, and comprehensive outpatient services available in the community. Unfortunately, most communities have highly fragmented non-systems of care. Also unfortunately, despite the widespread awareness of this fragmentation, there is—for the most part—insufficient attention to transition planning.

On the hospital side of the transition, potentially preventable causes of readmission include:

- failure to adequately stabilize patients before release;
- overly brief stays or premature discharge;
- failure to assure appropriate outpatient contacts following discharge;
- failure to coordinate and reconcile medications post-discharge;
- inadequate communication among hospital personnel, patients, caregivers, and community-based clinicians; and
- poor planning for care transitions.<sup>12</sup>

For persons with SMI, the period directly following hospitalization carries many risks, including a relapse of their symptoms and the need for hospital readmission, an increased risk of homelessness,

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<sup>9</sup> Jencks S.F., Williams M.V., and Coleman E.A., Rehospitalizations Among Patients in the Medicare Fee-for-Service Program. *N Engl J Med* 2009;360:1418 – 1428 (April 2, 2009).

<sup>10</sup> AHRQ Statistical Brief #172: Conditions With the Largest Number of Adult Hospital Readmissions by Payer, 2011. Anika L. Hines, Ph.D., M.P.H., Marguerite L. Barrett, M.S., H. Joanna Jiang, Ph.D., and Claudia A. Steiner, M.D., M.P.H., (April 2014). <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb172-Conditions-Readmissions-Payer.pdf>

<sup>11</sup> In contrast, behavioral health conditions did not rank among the top 10 for Medicare enrollees, and only mood disorders ranked among the top 10 for the privately insured.

<sup>12</sup> Berenson R.A., Paulus R.A., and Kalman N.S., Medicare's Readmissions-Reduction Program: A Positive Alternative. *N Engl J Med* 2012;366:1364 – 1366 (April 12, 2012).

and the possibility of violent behavior or suicide.<sup>13</sup> Although these risks are well-documented, there are many inadequacies in the process of planning and implementation at discharge. For example, although the expectation is that persons with SMI will have a follow-up outpatient visit within a week of discharge from a 24-hour inpatient facility, HEDIS reports from the National Committee for Quality Assurance (NCQA) indicate only about two-fifths of Medicaid and Medicare patients receive such follow-up (NCQA) (see [Figure 2](#)).

## Care Transition Models in Other Areas of Health Care

The most extensive efforts in care transitions have been in areas of care outside of behavioral health, most commonly models that aim to improve care in transitions for geriatric populations with multiple chronic conditions or specific illness groups (e.g., diabetes, cardiovascular disease). In addition, there have been a number of state- or system-specific quality initiatives focused on improving care transitions/reducing readmissions. Typically, these initiatives adapt a published care transitions model and develop a collaborative quality improvement effort among multiple providers or systems.

Eric Coleman's work on the Care Transitions Intervention<sup>14</sup> is one of the most commonly used models applied with these populations to inform protocols that address risks during transitions. The goal of the Coleman model is to provide patients with the tools and support to promote knowledge and self-management of their conditions as they transition from hospital to home care ([www.caretransitions.org](http://www.caretransitions.org)).

The Coleman model is composed of four components:

1. a patient-centered record, referred to as a personal health record (PHR), which includes the essential care elements for effective interdisciplinary communication during the transition;
2. a structured checklist of critical activities to empower patients pre-discharge;
3. a patient self-activation and management session with a "Transitions Coach" in the hospital to help patients and their caregivers understand how to use the first two components; and
4. Transition Coach follow-up visits and phone calls aimed at sustaining the first three components and maintaining continuity.

The intervention itself is further based on four conceptual domains, the "Four Pillars", which are:

1. medication self-management;
2. use of a dynamic patient-centered record, or PHR;
3. primary care and specialist follow-up, initiated by the patient; and
4. knowledge of red flags, so that the patient and caregivers can identify when the patient's condition is worsening, and respond appropriately.

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<sup>13</sup> Cuffel B.J., Held M., and Goldman W., Predictive Models and the Effectiveness of Strategies for Improving Outpatient Follow-Up under Managed Care. *Psych Serv* 2002;53:1438 – 1443 (November 2002); Nelson E.A., Maruish M.E., and Axler J.L., Effects of Discharge Planning and Compliance with Outpatient Appointments on Readmission Rates. *Psych Serv* 2000; 51(7):885 – 889 (July 2002); and Olfson M., Gameroff M.J., Marcus S.C., *et al*, Emergency Treatment of Young People Following Deliberate Self-Harm, *Arch Gen Psychiatry* 2005;62(10):1122 – 1128 (October 2005).

<sup>14</sup> Coleman E.A. and Berenson R.A., Lost in Transition: Challenges and Opportunities for Improving the Quality of Transitional Care. *Ann Intern Med* 2004;141(7):533 – 536 (October 5, 2004).

A randomized controlled trial of the Coleman model by Coleman himself demonstrated a 30 percent reduction in hospital readmissions.<sup>15</sup> The Centers for Medicare and Medicaid Services (CMS) followed up on these findings, funding a 14-state pilot project to further test the general application of the model. Mirroring Coleman’s findings, CMS found that the intervention group that was exposed to the model had a significantly reduced readmission rate, 36.0 percent compared to the comparison group.<sup>16</sup>

Another widely recognized model is the Transitional Care Model (TCM), based on the work of Medicare Payment Advisory Commission member Mary Naylor.<sup>17</sup> Although similar in scope to the Coleman model in that it emphasizes providing patients and caregivers with the tools necessary to be engaged in the continuity of their care, it differs in its approach. TCM focuses on chronically ill, high-risk older adults who have been hospitalized for common medical and surgical conditions, and provides comprehensive in-hospital planning and in-home follow-up for patients. The TCM approach is a nurse-led, multi-disciplinary intervention that includes the following components:

- screening;
- engaging the elder/caregiver;
- managing symptoms;
- educating/promoting self-management;
- collaborating; assuring continuity;
- coordinating care; and
- maintaining the relationship with the patient.

The TCM provides technical assistance from its base at the University of Pennsylvania School of Nursing, where Dr. Naylor is the Marian S. Ware Professor in Gerontology and Director of the New Courtland Center for Transitions and Health, and provides a series of web-based training modules and tools to train staff in becoming a transitional care nurse ([www.transitionalcare.org](http://www.transitionalcare.org)).

Minnesota’s Reducing Avoidable Readmissions Effectively (RARE) campaign is a statewide initiative that is utilizing elements of these models to reduce potentially preventable readmissions. RARE’s approach is based on five evidence-based strategies:

1. comprehensive discharge planning;
2. medication management;
3. patient and family engagement;
4. transition care support; and
5. transition communications.

The RARE program uses metrics to track the participating hospitals’ progress ([www.rareadmissions.org](http://www.rareadmissions.org)).

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<sup>15</sup> Coleman E.A., Parry C., Chalmers S., and Min S., The Care Transitions Intervention: Results of a Randomized, Controlled Trial. *Arch Intern Med* 2006;166(17):1822 – 1828 (September 25, 2006).

<sup>16</sup> Voss R., Gardner R., Baier R., et al. The Care Transitions Intervention: Translating from Efficacy to Effectiveness. *Arch Intern Med* 2011;171(14):1232– 1237 (July 25, 2011).

<sup>17</sup> Bradway C., Trotta R., Bixby M.B., et al., A Qualitative Analysis of an Advanced Practice Nurse-Directed Transitional Care Model Intervention. *Gerontologist* 2011;52:394 – 407 (September 9, 2011).



The Society of Hospital Medicine established a national initiative, Better Outcomes for Older Adults through Safe Transitions (BOOST), to improve the care of patients as they transition from hospital to home. The overall objectives of BOOST are to:

- identify high-risk patients upon admission and target risk-specific interventions;
- reduce 30-day readmission rates for general medical patients;
- reduce the length of stay;
- improve facility patient satisfaction and scores; and
- improve information flow between inpatient and outpatient providers.

The BOOST website provides technical assistance and tools to assist providers, 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) initiative at Indiana University School of Medicine targets primary care for low-income seniors and their primary care physicians, aimed at improving the quality of geriatric care so as to optimize health and functional status, reduce excess healthcare use, and prevent long-term nursing home placement.<sup>18</sup> The GRACE support team is led by both a nurse practitioner and a social worker who collaborate with the larger multidisciplinary team in focusing specifically on maintaining long-term support

(<http://graceteamcare.indiana.edu/home.html>).

The Guided Care Model<sup>19</sup> developed at the Johns Hopkins Bloomberg School of Public Health utilizes nurses who are trained in a 6-week, 40 hour course to work in primary care settings with complex patients, providing eight services to participants:

1. comprehensive assessment,
2. evidence-based care planning,
3. proactive monitoring,
4. care coordination,
5. transitional care,
6. coaching for self-management,
7. caregiver support, and
8. access to community-based services.

Similar to GRACE, the Guided Care Model is also a long-term intervention and includes a significant amount of transitional care components. It has been adopted and is in use at the following systems: Harvard Vanguard Medical Associates, Johns Hopkins HealthCare, Kaiser Foundation Health Plan of the Mid-Atlantic States, Mid-Michigan Home Care, Piedmont Community Health Plan, TUFTS Associated HMO, Chautauqua Integrated Delivery System, and Coastal Carolina Quality Care

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<sup>18</sup> Counsell S.R., Callahan C.M., Buttar A.B., *et al.* Geriatric Resources for Assessment and Care for Elders (GRACE): A New Model of Care for Low-Income Elders. *J Am Geriatr Soc* 2006;54(7):1136 – 1141 (July 2006).

<sup>19</sup> Boulton C., Leff B., Boyd C.M., *et al.*, A Matched-Pair Cluster-Randomized Trial of Guided Care for High-Risk Older Patients. *J Gen Intern Med* 2013;28(5):612–621 (May 2013).

<http://www.guidedcare.org>).

The Bridge Model, created by the Illinois Transitional Care Consortium centered in Chicago, is designed to connect medical and social support through linkage to home and community-based services, home health, and primary care. The care transitions staff are social workers called “bridge care coordinators,” but the approach is interdisciplinary, emphasizing collaboration between hospitals, community-based providers, and the Aging Network to provide a continuum of care across settings. The Bridge Model is a more short-term model, providing support for 30 days post-hospitalization. There are three intervention stages:

1. Pre-discharge, where the hospital identifies patients who would be most at risk for post-discharge complications;
2. Post-discharge, where bridge coordinators contact the patient within two days to conduct a secondary assessment and identify any needs; and
3. Follow-up, when coordinators track a patient’s progress and address any emerging needs ([www.transitionalcare.org/the-bridge-model](http://www.transitionalcare.org/the-bridge-model)).

Bridge is recognized as an evidence-based model of transitional care by the Administration on Community Living and by AHRQ.

Project Re-Engineered Discharge (RED), housed at Boston University Medical Center and funded through AHRQ, makes use of virtual patient advocates. It has [12 detailed discrete components](#), that include:

1. Ascertaining the need for and obtain language assistance;
2. Making appointments for follow-up medical appointments and post discharge tests/labs;
3. Planning for the follow-up of results from lab tests or studies that are pending at discharge;
4. Organizing post-discharge outpatient services and medical equipment;
5. Identifying the correct medicines and a plan for the patient to obtain and take them;
6. Reconciling the discharge plan with national guidelines;
7. Teaching a written discharge plan the patient can understand;
8. Educating the patient about his or her diagnosis;
9. Assessing the degree of the patient’s understanding of the discharge plan;
10. Reviewing with the patient what to do if a problem arises;
11. Expediting transmission of the discharge summary to clinicians accepting care of the patient; and
12. Providing telephone reinforcement of the discharge plan.

Their website has a toolkit for providers to assist with implementation, and they also provide clinical consulting to interested hospitals ([www.bu.edu/fammed/projectred/components.html](http://www.bu.edu/fammed/projectred/components.html)).

In addition to the above models and initiatives, the CMS Innovations Center (CMMI), established under the Affordable Care Act, has a broad mission to transform care by finding new ways to pay for and deliver care that improve care and health while lowering costs. CMMI identifies, develops, supports, and evaluates innovative models of payment and care service delivery for Medicare, Medicaid, and CHIP beneficiaries using an open, transparent, and competitive process. CMMI has implemented

several programs related to care transitions, including the Community-Based Care Transitions Program (<http://innovation.cms.gov/initiatives/CCTP/>) and the Initiative to Reduce Avoidable Hospitalizations Among Nursing Facility Residents (<http://innovation.cms.gov/initiatives/rahnfr/>).

All of the initiatives have adapted the major components of the CTI and TCM. They focus on elderly and/or chronically ill populations and recognize that different settings and structures deliver healthcare delivery in silos, with a general lack of communication and collaboration. To bridge these silos, they typically utilize a “health coach”, who is either a specially trained coach or an assigned nurse or social worker. They include pre-discharge planning with the patient and caregivers, and follow-up visits and/or calls by the coach with the patient. Finally, they expect the patient and family/caregivers to take an active and responsible role in the patient’s care.

## Models and Reports in Mental Health

Several recent systematic searches of the literature have failed to identify a unique, comprehensive transitional care model specifically applied to mental health, especially in the transition from inpatient to outpatient care.

In their 2013 study, Vigod *et al* systematically reviewed specific interventions, the goals of which were to assist in the transition from inpatient to outpatient care for adult inpatients on psychiatric units.<sup>20</sup> The authors identified 15 studies evaluating a heterogeneous group of 15 distinct intervention components. The interventions had a statistically significant impact on readmission in 7 of the studies. Effective components identified within the context of multicomponent interventions were:

- psychoeducation interventions targeting disease management and living skills,
- structured assessments of patients’ discharge needs,
- pre-discharge medication education/reconciliation,
- post-discharge telephone follow-up,
- efforts to ensure timely follow-up appointments,
- home visits,
- peer support, and
- the bridging components of transition manager and timely communication by in-patient staff with an out-patient care or community service provider during the transition.

An AHRQ report that involved a review of published and unpublished sources of information about the effectiveness of specific strategies to reduce psychiatric hospitalization did not identify an overall theoretical model that identified key intervention components (other than Assertive Community Treatment).<sup>21</sup> Components of the various strategies overlap and are likely interdependent. Of the 64 studies that assessed the link between a management strategy and readmission, 2 addressed length-of-stay, 5 addressed transition support services, 4 addressed short-term alternatives to psychiatric re-hospitalization, and 53 addressed long-term approaches for reducing psychiatric re-hospitalization. The

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<sup>20</sup> Vigod *et al* (March 2013).

<sup>21</sup> Gaynes *et al* (May 2015).

bulk of these studies reviewed three interventions: case management, involuntary outpatient commitment/compulsory treatment orders, and ACT.

Viggiano *et al* noted that the Availability, Responsiveness, and Continuity model (ARC) was the only comprehensive model found that focused specifically on mental and behavioral health,<sup>22</sup> although it is focused on preventing a child/adolescent from entering the next most intensive or restrictive level of mental health treatment, as opposed to being readmitted to hospitalization. The ARC model uses “change agents” to apply ten intervention components across community, organization, and individual levels:

1. personal relationships,
2. network development,
3. team building,
4. information and assessment,
5. feedback,
6. participatory decision-making,
7. conflict resolution,
8. continuous improvement,
9. job redesign, and
10. self-regulation.

In addition, several local collaborative initiatives have organized hospitals, outpatient providers, and/or health plan(s) to reduce psychiatric readmissions: Amerigroup in Florida, ColoradoAccess, and the RARE campaign in Minnesota.

## Adapting Models for Mental Health Care

In their 2013 article, Viggiano, Pincus and Crystal proposed a conceptual framework specifying a core set of care transition intervention components with the intent of stimulating the development of interventions that specifically address patients with SMI.<sup>23</sup> Elements of the framework include the “what”, “for whom”, “where”, “by whom”, “when”, and “how” for the application of the care transition interventions.

**“What”** refers to the group of components that are the active elements of the intervention, and is based on nine components identified from existing models: prospective modeling, patient and family engagement, transition planning, care pathways, information transfer/personal health records (PHR), transition coaches/agents, provider engagement, quality metrics and feedback, and shared accountability (see Table 2).

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<sup>22</sup> Viggiano *et al* (November 2012), *citing* Glisson C. and Schoenwald .SK., The ARC Organizational and Community Intervention Strategy for Implementing Evidence-Based Children’s Mental Health Treatments, *Ment Health Serv Res* 2005; 7:243 – 259 (December 2005).

<sup>23</sup> Viggiano *et al* (March 2013).

**“For whom”** is an elaboration on prospective modeling, with specification of which population(s) the model is targeting, along with an understanding of the needs and characteristics of that population. The targeting of the population is aided by sophisticated analysis aimed at predicting those most likely to be re-hospitalized.<sup>24</sup> Importantly, for caregivers of individuals with SMI, families and support systems need to be included as part of the target group.

Since the setting is vital to understanding not only what type of implementation 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. This includes determining which services are to be provided in the hospital, in an outpatient setting, at home, or across multiple settings.

**“By whom”** refers to the specification of the types of professionals providing services and roles played/ services provided by each team member (including caregivers and consumers themselves). For example, in the TCM model, nurses play the most active role, but other models and approaches may rely more on less-skilled providers, or on peer coaches. Regardless of the specific make-up of the team, all of the models identified assume a team-based approach. An important implication of the team-based concept is that the teams transcend settings and should have representation from each setting being targeted. Specific training and ongoing supervision expectations should be specified for each team member and for the team as a whole.<sup>25</sup> Moreover, training should move beyond the installation of specific knowledge and skills to establishing a culture of shared accountability, both across organizations and settings and among team members.

**“When”** refers to establishing specific time points for the implementation of intervention elements. For example, the when could include: pre-admission, during inpatient treatment, at discharge, immediately post-discharge, or later. Deciding on appropriate intervals to gather metrics or benchmarks on patients during the intervention phases, or whether or not to have a stepped or algorithmic phased process, should also be part of appropriate planning. The collection of metrics will be determined by these intervals, so ensuring adequate time and attention to detail for the beginning and end of each interval or phase, coupled with rationales, will yield the most useful information on effectiveness.

**“How”** refers to the plan and structure for actual implementation of the intervention, from pre-implementation start-up efforts through ongoing maintenance and improvement. This is a critical step that needs to consider the patient population, provider types, available staffing, training necessary for “re-tooling” staff roles, and available resources. The process should be well-documented and include adapting and/or developing tools for both provider activities and patient/family engagement, fidelity

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<sup>24</sup> Tulloch A.D., David A.S., and Thornicroft G., Exploring the Predictors of Early Readmission to Psychiatric Hospital; *Epidemiol Psychiatr Sci.* 2015 Feb 23:1-13 (February 2015); Perlman C., Hirdes J., and Vigod S., Psychiatric Re-hospitalization: Development of a Person-Level Indicator for Care Planning and Quality Assurance. *J Clin Psychiatry* (July 23, 2015) (<http://www.psychiatrist.com/PCC/article/Pages/2015/v17n04/15m01784.aspx>).

<sup>25</sup> Lakatos B.E., Schaffer A.C., Gitlin D., Mitchell M., Delisle L., Etheredge M.L., Shellman A., and Baytos M., A Population-Based Care Improvement Initiative for Patients at Risk for Delirium, Alcohol Withdrawal, and Suicide Harm. *Jt Comm J Qual Patient Saf.* 2015; 41(7):291-3 (July 2015).

assessments, and outcomes measures, and plans for how the evaluation data should be used to improve the program. Various strategies for implementation of care models have been put forward and they incorporate some of these elements, including the Centers for Disease Control and Prevention's Replicating Effective Programs (REP) (<http://www.cdc.gov/hiv/prevention/research/rep/>)<sup>26</sup> and Virginia Tech's Reach Effectiveness Adoption Implementation Maintenance (RE-AIM) (<http://www.re-aim.hnfe.vt.edu/>).

## Conclusion

The policy context of strategies for improving care transitions has enormous consequence for their success. The Affordable Care Act (ACA) established mechanisms for influencing incentives to increase quality and efficiency, such as the public reporting of quality and outcomes metrics, value-based purchasing, bundled care arrangements, and systems redesign strategies such as Health Homes and Accountable Care Organizations.

For example, as part of the ACA, hospitals with higher-than-expected rates of readmissions of Medicare beneficiaries within 30 days are subject to financial penalties. Since the initiation of the program, 30-day readmission rates nationally have declined from more than 19 percent to less than 18 percent, equivalent to approximately 150,000 fewer readmissions annually among Medicare beneficiaries.<sup>27</sup>

Developing similar incentive programs in mental health will require attention to adapting or developing reliable and valid quality measures specific to the SMI population. In addition, it will be important to consider other, more complex aspects of measurement: Should the measures be risk-adjusted for patient, hospital, or local resource characteristics? Should readmission measures be balanced by length of stay?

It will also be important to consider challenges to implementation specific to the care of the SMI: training of staff, authentic integration of family and patient, overcoming regulatory and technological barriers to communication among providers, and the bridging of silos separating mental health and general medical care, as well as substance use care and social services.

Finally, there is additional research that needs to be carried out. Building on the evidence from studies of existing models and initiatives in the general patient population, more work needs to be done to test models addressing the unique needs of the SMI population as well as integrating behavioral health efforts into CTIs for general medical conditions, where there are significant mental health comorbidities.

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<sup>26</sup> Kilbourne A.M., Neumann M.S., Pincus H.A., *et al.*, Implementing Evidence-Based Interventions in Healthcare: Application of the Replicating Effective Programs Framework, *Implement Sci* 2007; 2:42 (December 2007) (<http://link.springer.com/article/10.1186/1748-5908-2-42>).

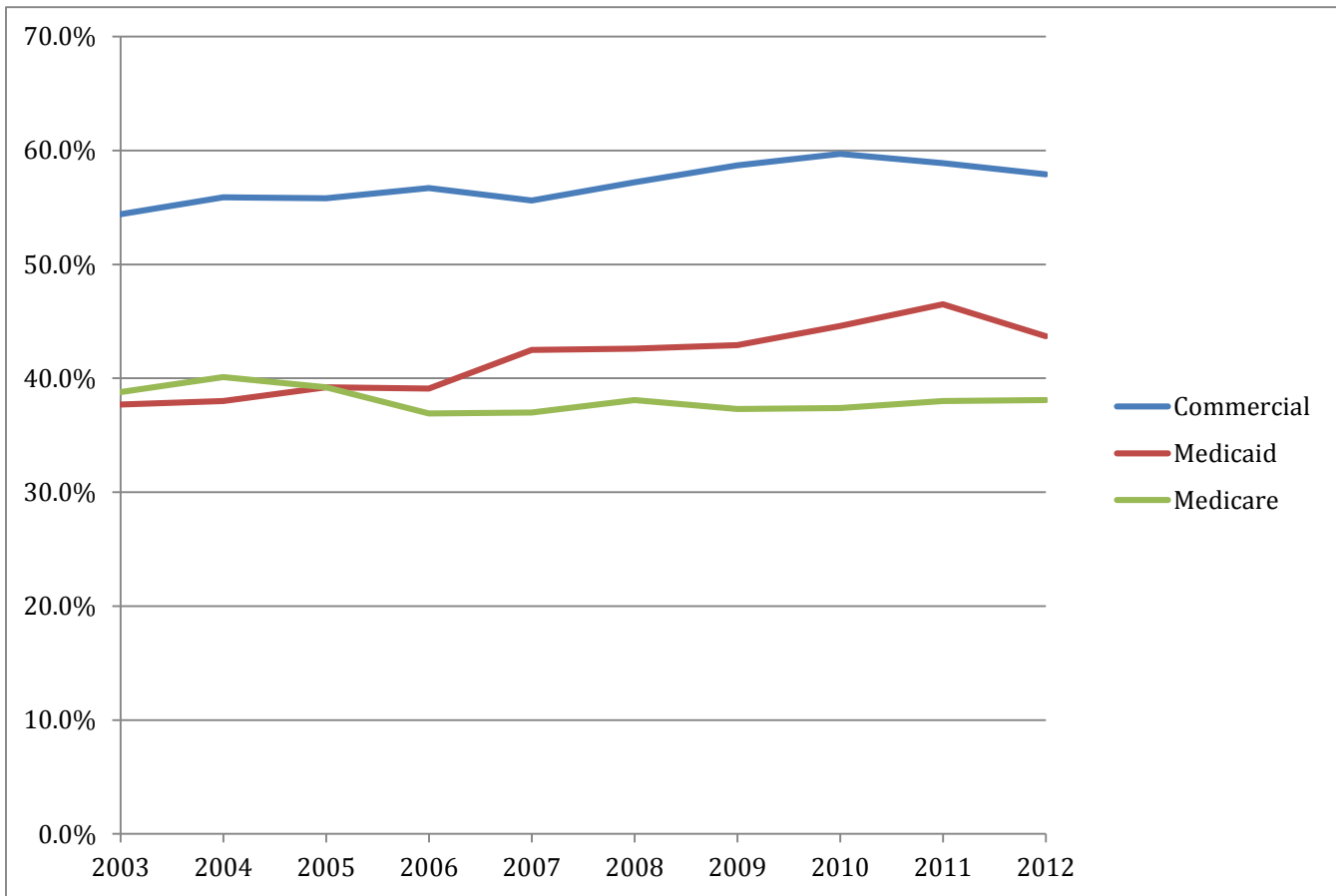
<sup>27</sup> D. Blumenthal, M. Abrams, and R. Nuzum, "The Affordable Care Act at Five," *N Engl J Med* 2015; 372:2451-2458 (June 18, 2015) (<http://www.nejm.org/doi/full/10.1056/NEJMhpr1503614>).

**Table 1: Top Ten Most Common Medicaid 30-Day  
Readmissions (with Total Cost) for Medicaid Patients  
Aged 18-64, 2011**

1. Mood disorders — 41,600 total readmissions (\$286 million)
2. Schizophrenia and other psychotic disorders — 35,800 total readmissions (\$302 million)
3. Diabetes mellitus with complications — 23,700 total readmissions (\$251 million)
4. Other complications of pregnancy — 21,500 total readmissions (\$122 million)
5. Alcohol-related disorders — 20,500 total readmissions (\$141 million)
6. Early or threatened labor — 19,000 total readmissions (\$86 million)
7. Congestive heart failure (non-hypertensive) — 18,800 total readmissions (\$273 million)
8. Septicemia (except in labor) — 17,600 total readmissions (\$319 million)
9. Chronic obstructive pulmonary disease and bronchiectasis — 16,400 total readmissions (\$178 million)
10. Substance - related disorders — 15,200 total readmissions (\$103 million)

Source: AHRQ Statistical Brief #172. Conditions with the Largest Number of Adult Hospital Readmissions (April 2014)

Figure 1: Follow-Up after Hospitalization for Mental Illness within 7 Days Post-Discharge (HMOs Only) -Trends, 2003-2012



Source: National Committee for Quality Assurance, October 2013



**Table 2: Adapting Model Components to Care Transitions for SMI Populations**

<b>Component</b>	<b>Description</b>	<b>Adaptation to mental health</b>
Prospective Modeling	Identify and characterize target populations at greatest risk for readmission	Co-morbid general medical conditions, substance use disorders, dual eligibles, housing instability, low social supports. Ideally use community/population-specific data
Patient and Family Engagement	Authentic inclusion of patient and family/caregivers in treatment plan	Apply culturally adapted self-management and recovery strategies. Include caregivers in more meaningful ways. Added resources needed when family support is unavailable
Transition Planning	Collaboratively establish appropriate client-specific plan for transition to next point of care that includes clearly specified, accountable responsibilities for all parties	Consider alternative “step down” services and trade-offs in length of stay for stabilization and risk of re-hospitalization. Include assessment of need for primary care planning, as well as substance abuse and social services in addition to mental health care. An assessment and, if needed, a specific plan for housing should be included.
Care Pathways	Specific clinical/procedural guidelines and instructions. Linked with national guidelines	Pre-developed evidence-based clinical decision support that includes assessment tools, medications, psycho-social interventions, self-care instructions, follow-up, etc., customized to the local environment. Additional focus may be needed for: 1) suicidality, 2) borderline personality disorder 3) first episode psychosis 4) chronically disengaged patient 5) significant levels of chronic medical conditions
Information Transfer/Personal Health Record (PHR)	Ensure that all information is communicated, understood, and managed. Links patients, caregivers, and providers in all directions	Clarify communication expectations from the beginning, including rules for accessing and transferring personal health records. Pathways navigating regulatory issues need to be understood and protocols put in place for how privacy issues are addressed with patients across services/settings
Transition Coaches/Agents	Specify roles/tasks, competencies, training, and supervision. Training includes planning tools, red flags, consumer and caregiver engagement strategies.	Relentless follow-up is essential. Consider using mental health providers as transition agents and/or train coaches in mental health tools and techniques. Health information technology (e.g., registries, mobile devices, etc.) to assist coaches.

Provider Engagement	Providers at each level of care should have clearly specified patient-specific responsibilities for implementing all transition procedures. Communication and handoff arrangements should be pre-specified in a formal way.	If access to psychiatrists is limited, consider nurse practitioners trained in psychotropic medication use. If patient has primary care provider link them with a consulting psychiatrist (possibly with telemedicine)
Quality Metrics and Feedback	Gather metrics on follow-up after discharge, readmission, and other process and outcomes metric including consumer/family perceptions of care. Feedback to (and use by) providers for quality improvement and accountability.	Adapt Care Transition Measure (either 3 or 15 item scale) for mental health. Develop and test mental health-specific structure, process and outcomes measures, including measures assessing integrated care across settings (e.g., mental health, substance abuse, med/surg, social services). Expand and develop technical assistance and mental health collaborative improvement programs
Shared Accountability	All providers and settings collectively responsible for quality and outcomes and share in rewards/penalties. Accountability mechanisms may include financial mechanisms and public reporting with regard to quality and value. Consumers/families share in accountability as well.	Shared accountability applies not only to inpatient and outpatient mental health providers, but also to other behavioral health and general medical providers, clinical organizations and payers (and is instantiated in contracts and incentive mechanisms)

Adapted from Viggiano, Pincus and Crystal, 2013