

Coordinating Care Between Behavioral Health and Primary Care Providers:
Examining Agency Challenges, Capacity, and Patient Service Utilization

by

Nicole Janich

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Graduate Supervisory Committee:

Michael Shafer, Chair
David Duffee
Craig Lecroy

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ABSTRACT

Health care in the United States has been undergoing significant changes since the 2010 passage of the Patient Protection and Affordable Care Act. One of the outcomes of this policy was an attempt to bring physical health care and behavioral health care together in an effort to provide more coordinated care for patients. This change created an opportunity to improve the quality of care for patients, and as a result reduce high cost emergency service that could be prevented through better maintenance of chronic conditions. Three studies were conducted to examine challenges behavioral health agencies face in implementing two models of coordinated care (co-located and fully integrated), staff and organization capacity and needs, and patient service utilization by model of care coordination. The first study used site visits and interviews to capture the challenges faced by agencies. Results from this study indicated that behavioral health agencies faced a number of challenges in providing coordinated care including financial barriers, regulations, information sharing, inadequate technology, and provider training needs. The second study used a staff survey to assess agency and staff capacity and needs in providing coordinated care. The results from this study found differences in capacity based on model of coordination in multiple dimensions related to inter-agency coordination and communication, role clarity, and team cohesion. The third study examined patient service utilization for outpatient visits, inpatient visits, and emergency visits. The results indicated that patients receiving care from co-located agencies were more likely to have at least one encounter in each of the three service utilization categories compared to patients at fully integrated agencies. Overall, the three studies suggest that agencies that have or will implement models of coordinated care face

significant barriers that may impact the sustainability or feasibility of such care. Given the findings on patient service utilization, it seems that coordinated care has great potential for patient level outcomes which makes addressing agency barriers even more critical.

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CHAPTER 1

INTRODUCTION

Overview

Research has made a clear connection that co-occurring behavioral health¹ and medical conditions are related to increased mortality rates, preventable medical conditions, emergency service utilization, and ultimately higher costs on the health care system (Croft & Parish, 2013; Druss et al., 2010; Gerrity et al., 2014; Mechanic, 2014). To address these unfortunate healthcare outcomes, many have argued that coordinated care can improve those issues (Butler et al., 2008; Croft & Parish, 2013; Green & Cifuentes, 2015; Jones et al. 2004; Razzano et al., 2015; Robson & Gray, 2007). The problems faced by individuals with comorbid behavioral health and medical conditions, especially those with serious mental illness (SMI)², have been exacerbated by the fragmentation of the health care system which has historically separated behavioral health and medical care in terms of providing services and financing (Corrigan et al., 2014; Druss et al., 2010; Green & Cifuentes, 2015; Keeley et al., 2014; Razzano et al., 2015). Creating a system capable of addressing the needs of this high risk population requires change in policy in order to remove the barriers that have separated the two systems for so long (Butler et al., 2008). To address these problems, healthcare in the United States has slowly moved towards an approach that focuses on treating behavioral health and physical health together. Nevertheless, there is still much research to be done

¹ Throughout this paper, the term ‘behavioral health’ is used to refer to the occurrence of mental illness, psychiatric disorders, and/or substance use disorders.

² Serious Mental illness is not a diagnostic classification but a program classification, used by state mental health authorities and researchers. Typically, SMI is defined by a combination of a clinical diagnosis (schizophrenia or other psychotic mental illness and/or a mood disorder such as severe depression, bi-polar mental illness, etc.) and significant functional impairment.

to understand the effectiveness and feasibility of different models of coordinated care. The three studies reviewed in later sections will explore two models of care coordination: co-located and fully integrated care among behavioral health and primary care providers. Specifically, these two approaches to coordination will be examined in three ways: (1) challenges experienced by behavioral health agencies in implementing and sustaining both care coordination models; (2) variations in staff and organizational capacity to implement the two models of coordinated care; and (3) variations in service utilization patterns for patients receiving care by agencies implementing these two models of coordinated care. These studies attempt to address some of the gaps in knowledge regarding coordinated care in behavioral health settings.

Statement of the Problem

Coordination of care between primary care and behavioral health providers has become a popular topic in recent years, especially since the Patient Protection and Affordable Care Act (PPACA) was enacted in 2010 (Public Law 111-148). The need for and efficacy of enhancing care coordination between physical health and behavioral health, however, was well documented long before the passage of PPACA. Many studies have demonstrated that patients with SMI in particular, could benefit from such care given their higher mortality rates, often due to comorbid physical health conditions (Corrigan et al., 2014; Croft & Parish, 2013; Druss et al., 2010; Druss et al., 2011; Gerrity et al., 2014; Manderscheid et al., 2008; Mechanic, 2014; Robson & Gray, 2007). For patients with SMI, earlier deaths are often the result of undiagnosed and untreated chronic physical health conditions (Druss et al., 2010). This population is also likely to use emergency service more frequently (Croft & Parish, 2013; Gerrity et al., 2014;

Robson & Gray, 2007, Shim et al., 2014). Despite a large amount of literature indicating the coordinated care is needed and beneficial in some settings and with some populations, there is little research examining the effect care coordination can have for individuals with serious mental illness and co-occurring physical health conditions, especially in behavioral health settings.

Furthermore, the differences among the variety of models of care coordination that exist, and the degree to which they are implemented is understudied. Multiple models exist and are implemented in different settings, yet there is little understanding of the components of each model and effectiveness and feasibility of those models for patients and organizations.

Relevance to Social Work

Moving towards coordinated care will create new opportunities for professionals such as social workers to become more prepared for treating individuals with complex needs in an integrated setting. Social workers make up the majority of the behavioral health services field (Mendenhall & Frauenholtz, 2013), with about 193,000 social workers in these settings (Mechanic, 2014). With the large number of social workers in behavioral health settings, this profession will likely be heavily involved in providing coordinated care.

In order to equip social workers with the skill necessary to provide coordinated care, social workers will need more training on care for individuals with comorbid physical and behavioral health conditions within a coordinated care setting. Social workers may need to take on new roles such as the care manager or care coordinator who functions as a liaison between behavioral health and medical providers (Croghan &

Brown, 2010). Regardless of the role any social worker may play in a coordinated care model, training of this workforce will be an immediate need if these new models are to be implemented successfully and sustained. At the level of the social worker, training could include learning more about screening and assessment or management of chronic medical conditions that many of their clients with behavioral health disorders suffer from or are at increased risk for (Mechanic, 2014).

Emphasizing the importance of social workers in coordinated care, the National Association of Social Work (NASW) made client access to medical and behavioral health care a priority for social workers (Mendenhall & Frauenholtz, 2013). Helping individuals obtain and understand health and behavioral health services as well as increasing individuals' ability to understand treatment and conditions is aligned with the NASW's goals and coordinated care. Part of the social worker role in public health is to increase mental health literacy, which is "the ability to recognize disorders and obtain mental health information; knowledge of risk factors, causes, self-treatments, and professional help; and attitudes that promote recognition and appropriate help seeking" (Mendenhall & Frauenholtz, 2013, p.1). Increasing mental health literacy is one strategy that should be undertaken by social workers to improve care quality and reduce stigma by changing attitudes (Mendenhall & Frauenholtz, 2013). Social workers are in the best position to develop, implement, and provide valuable data that informs research on effective coordinated care practices between medical and behavioral health professionals, since they make up such a significant proportion of the behavioral health workforce.

Social workers are uniquely situated to engage in translational science related to integrated and coordinated care (Brekke et al., 2007). Models of coordinated care have

been tested, albeit with some important limitations that could impact bringing these practices into the real world, but the field of social work can implement new models of care to provide evidence for possible best practices. Studying care coordination models in real world settings and understanding the barriers and facilitators to successful coordination models will inform research and lead to evidence-based models of coordinated care.

Organization

The format of this dissertation begins with an overview of the theoretical frameworks and relevant literature used to guide the studies. The dissertation is composed of three studies that resulted in distinct manuscripts submitted for publication. The main body of the paper contains the three papers that describe each study separately followed by a conclusions and recommendations section that summarize the findings of all papers together. The overall purpose of the three studies were to examine the challenges that arise in implementing two models of coordinated care, capacity of behavioral health agencies to deliver coordinated care, and the relationship between the coordinated care model implemented and patient service utilization. Following the background literature section, the body of the dissertation contains the three papers addressing each of the following research questions.

Research question 1 (paper 1): What are the *implementation challenges* that behavioral health providers face in implementing coordinated care delivery models?

Research question 2 (paper 2): What are the *staff and organizational capacity* factors that behavioral health agencies face in implementing coordinated care delivery models?

Research question 3 (paper 3): What is the relationship between *model of care coordination* and *patient service utilization*?

CHAPTER 2

BACKGROUND LITERATURE

Theoretical Foundation

These studies are informed by a combination of theoretical frameworks: The Biopsychosocial (BPS) model (Engel, 1977), Core Components of Implementation (Fixsen et al., 2009), and Rogers' Diffusion of Innovations (1983). The Biopsychosocial model provides the theoretical support for the need for coordinated care at the patient level, while the implementation and diffusion theories provide information on the organizational and staff level factors that are involved in effectively implementing and providing coordinated care.

Biopsychosocial Model

BPS theoretical support. George Engel (1977) introduced the Biopsychosocial Model in his seminal article in which he drew a stark contrast between psychiatry and other medical disciplines. Engel pointed out that psychiatry was generally unscientific and had become a mix of various philosophies and opinions. Engel went on to argue that physicians assumed an over-reliance upon a biological basis of disease management, ignoring the associated psychosocial issues (Engel, 1977).

This separation of psychosocial issues and physical diseases put psychiatrists in a position of having to accept two opposing ideas because their job was to address psychosomatic issues but they were also medical doctors. One option for psychiatrists to address this dilemma was to leave diseases of the brain to medicine while other psychosocial issues would not be seen as diseases, consequently removing psychiatry as a medical discipline. Alternatively, diseases would only be classified as mental illness if

there was a dysfunction in the brain, while all others would be removed from the definition of mental illness, and left for the non-medical professionals (Engel, 1977).

Engel argued for a completely different view that conformed less to the traditional medical model and expanded the definition of disease while keeping the scientific nature of the biomedical model. His rationale for this included the point that diseases did not always manifest themselves in the same way, and patients varied in how they communicated symptoms. Patient communications could express both physical and psychological discomforts (Engel, 1977). He suggested that physical and psychological issues often overlapped and that symptoms of physical issues could function as communication of psychological discomfort. Additionally, it has been argued that life circumstances have an impact on diseases and can influence the severity and path of the disease (Engel, 1977; White, 2005). The job of the physician was then to effectively interview a patient and discern whether the cause was physical or psychological. The biomedical model did not take into account the thoroughness needed to conduct and analyze an interview. To summarize, Engel's point was that psychological, social, and biological issues are all intertwined and should therefore not be left out of medical practice (Engel, 1977).

To address the limitations of the biomedical model, the BPS model was presented as a more appropriate method to understanding disease. The BPS model addressed the problems created by biological indicators being the only criteria for defining diseases. To help understand the need for the BPS model, Engel used grief as an example. He explained that although grief begins with psychological issues, it follows the usual course of a disease in that it lasts a certain period of time regardless of an individual's efforts to

make it end. Engel argued that the BPS model acknowledged that a patient seeks help from a physician because they do not know what is causing their discomfort or they are not able to help themselves. It is the role of the physician to assess all issues a patient arrives with and develop an appropriate plan which could include referrals to other professionals. For this reason, it was essential that a physician understand social, biological, and psychological processes in order to best help the patient. Engel noted that the field of medicine was experiencing an increase in dissatisfaction with physicians due to the constant neglect of the patient and focus on biomedical processes, which in turn led to an increased interest in primary care which offered a more person-centered approach (Engel, 1977).

Engel explained that the concept of an integrated or holistic approach to health had been developed 30 years earlier and stemmed from physicians who took ideas from psychiatry, specifically Sigmund Freud and Adolf Meyer. However, this integrated approach did not catch on due to pressures to adhere to the scientific approach involved in the biomedical model, in addition to medical schools and journals being unaccepting of anyone interested in alternative approaches (Engel, 1977). Another reason mentioned to explain why the BPS model did not catch on was the success of pharmacological approaches to treatment; which likely contributed to disappearance of the model for decades (White, 2005).

Engel suggested that General Systems Theory provided the scientific framework of the biopsychosocial model because it proposed that all levels of a system (person, family, society, organisms, etc.) are linked in that a change in one could result in a change in another. Engel suggested that the field of medicine would be better able to

accommodate a BPS perspective when the General Systems Theory was a regular part of education for those in medical or helping professions (Engel, 1977).

Evidence has existed for decades establishing the importance of treating people in a way that addresses biological, psychological, and social needs. Components of the biopsychosocial framework can be found in empirical work on integrating treatment for biological, psychological, and social needs (Kaslow et al., 2007). Studies involving coordinated care for medical, behavioral health, and social services are often guided by the BPS approach and highlight the importance of using an interdisciplinary approach to treatment in many areas including the commonly studied areas of depression and pain management (Kaslow et al., 2007). Despite the evidence showing benefits of integrating medical, behavioral health, and social services, the shift towards a whole person or integrated treatment perspective is relatively new. The BPS framework is still in need of testing in order to be more explicit in how components of the BPS framework translate into practice (Schwartz, 1982).

Theoretical Frameworks of Implementation

Theoretical support. Although the BPS model provides support for potential benefits of coordinated care on patient level outcomes, it does not adequately address how the change towards coordinated care has been adopted or implemented. The role of adoption and implementation is intertwined with patient outcomes. Based on his ideas related to the diffusion of new ideas or practices, Everett Rogers suggests that conveying information regarding the new practice is essential in order for adoption and diffusion of the new practice to take hold (1983). Rogers identified four key elements that occur in the process of diffusion. First, there must be an “innovation” (Rogers, 1983, p.11). In

the proposed studies this would be coordinated care. The second element is “communication channels” (Rogers, 1983, p.17), which involves individuals sharing information which helps generate acceptance and spread the innovation. The third element is “time” (Rogers, 1983, p.20), which is a critical variable in understanding adoption and implementation of new practices because it influences every process. The fourth element is a “social system” (Rogers, 1983, p.24), which is the group or system working together to achieve a particular goal. The system is essentially the organizational structure, culture, and norms which can either help or hinder the accomplishment of the shared goal (Rogers, 1983). Logically, adoption of a new practice must occur prior to activities related to implementation to be set in motion.

In a review of literature on implementation, Fixsen, Blase, Naoom, and Wallace (2009) explained that in the past, the transfer of scientific knowledge into practice in human services has been largely ineffective with minimal impact on client outcomes. The authors explain that this is likely related to the activities by which organizations bring evidence-based practices into their service setting, which supports why Rogers’ concepts related to diffusion are essential in order for successful implementation to occur. The literature on implementation is limited and complicated by the fact that in human service settings, implementation is generally a non-linear, complex process (Fixsen et al., 2009; Proctor, Landsverk, Aarons, Chambers, Glisson, & Mittman, 2009). In the last few decades, organizations have moved towards more active, strategic methods to implement programs. Multiple frameworks for effective implementation exist, but one that is particularly relevant to the proposed studies is the Core Components of Implementation based on common themes found in literature on successful implementation cases (Fixsen

et al., 2009; Fixsen et al., 2005). This framework involves an iterative process that consists of seven components designed to create processes that influence staff behavior and organizational culture and ultimately ensure high fidelity to the plan during implementation.

- 1) Staff selection: identifying/recruiting staff who are qualified to carry out the new practice
- 2) Pre-service and in-service training: training staff on how to use new practices
- 3) On-going coaching and consultation: training and coaching of selected staff in an on the job setting.
- 4) Staff evaluation: providing opportunity for staff to improve new skills with feedback and use of fidelity tools for evaluation.
- 5) Decision support data systems: use of measures to assess organizational level performance in client outcomes and fidelity. Using data to support and guide decisions help keep the whole organization on the path of implementation.
- 6) Facilitative administrative support: having administrators utilize data to ensure staff have the support they need and the organizational culture, policies, and structures are aligned with staff needs.
- 7) Systems interventions: ensuring the availability of external systems such as financial, organizational, and human resources are in place to support staff (Fixsen et al., 2009).

Ideally, the core implementation components should be integrated together for implementation to be effective and sustainable. Feedback is necessary to ensure staff and the organization stay on track, systems may need to be adjusted based on data and

feedback. The need for adjustments presents challenges in human service settings because if an adjustment is needed in one component, adjustments are likely needed in the others. However, the components are what the authors call “compensatory” in that if some components are strong, it can make up for weaker components. For example, if there is strong feedback and coaching, it could make up for lack of training (Fixsen et al., 2009). The core components described by Fixsen et al. (2009) are relevant to the concept of *staff and organizational capacity* which is one of the key concepts examined in the proposed studies. For these studies, capacity is essentially capturing factors that could influence the quality and completeness of implementation of a care coordination model. The staff and organization capacity variables used for one of these studies provide a means to examine how the core components of implementation were carried out. Each of the capacity variables is measured in terms of high or low capacity, which would be the result of the core components. These studies do not provide measures of the process of implementation, rather, the capacity variables provide insight into the quality or completeness of implementation. In essence, the concept of staff and organizational capacity measure whether the organization and staff have the capacity to carry out new practices.

Assessing the quality of implementation of programs can be challenging because the need for each component can vary by organization. Due to different strengths and weaknesses of each agency, they should be evaluated uniquely with an understanding of the compensatory nature of implementation components. An agency may have very effective coaching and little training, but still be able to effectively implement a program as well as others who are strong in every implementation component (Fixsen et al.,

2009). Essentially, the effectiveness and quality of implementation can look different across organizations. However, research tends to support the idea that programs implemented with high fidelity tend to have better outcomes for clients (Fixsen et al., 2009). Another factor that can impact successful implementation is the use of what Fixsen and colleagues (2009) refer to as a “Purveyor”. This is a person or group that can be internal or external to the organization that help ensure organizations implement new programs with high fidelity and stay on track. Purveyors serve the function of communicating the new practice to others and ensure the practices become a part of the organization. The role provides feedback and coaching and works to sustain the new practices (Fixsen et al., 2005). Use of a purveyor can be beneficial and lead to more successful implementation attempts because this person or group accumulates knowledge over time that can help identify and effectively address challenges early on and keep the organization on track to fully implement the new practice (Fixsen et al., 2009; Fixsen et al., 2005).

We can connect Rogers and Fixsen’s ideas by concluding that the implementation stage³ that organizations are in is likely dependent on when and how they adopted and implemented coordinated care models. Early adopters of coordinated care are probably further along in the process, not only due to time that has elapsed but also because of their willingness to change (Rogers, 1983). Organizations that chose to implement coordinated care prior to policy changes may have been more accepting and open to adopting coordinated care because they had more positive attitudes towards the new practices, as opposed to late adopters that may have implemented care coordination

³ Fixsen et al. (2005) identified six stages of implementation: Exploration and Adoption, Program Installation, Initial Implementation, Full Operation, Innovation, and Sustainability.

mostly due to pressures from policy changes indicating less acceptance of the new practice (Rogers, 1983). It is also possible that the differences in acceptance of change in early and late adopters could impact the level of difficulty organizations have in implementation. Rogers' ideas on the element of the social system suggest that the late adopters likely face more internal barriers that hindered their ability to successfully implement a model of care coordination (Rogers, 1983). Late adopters could have faced more resistance to change because the change was not internally motivated or even supported by their organizational structure or resources. Early adopters might have faced less resistance, or at the very least have had more time to overcome the resistance. For these reasons, it is likely that organizations that adopted a program at different times are at different stages in the implementation process and had or will have different outcomes in the success of implementation (Rogers, 1983).

Co-Occurring Conditions, the Health Care System, and Coordinated Care

The evidence identifying the link between physical and behavioral health conditions in individuals experiencing mental illness spans decades (Phelan et al., 2001; Phillip, 1937). Furthermore, the evidence of high rates of comorbidities coupled with more recent findings of an increased use of high cost services among individuals with behavioral health conditions (Croft & Parish, 2013; Gerrity et al., 2014; Shim et al., 2014) is indicative of the need for more coordinated care among behavioral health and medical systems (Gerrity et al., 2014; Jones et al., 2004). To understand the importance of studying care coordination it is necessary to provide an overview of three primary areas: (1) the extent of co-occurring physical health and behavioral health conditions on individuals and the impact on the health care system; and (2) recent health care reform in

the U.S.; and (3) the evidence demonstrating the outcomes of coordinated care for patients and organizations. The first area is important because it demonstrates the need for coordinated care for individuals with co-occurring physical and behavioral health conditions. The second area is essential because health care reform has led to changes in how patients can receive care, but also impacted the way health care organizations are organizing to provide care, and therefore undergoing extreme changes to meet new demands. And finally, a review of the current research on coordinated care will shed some light on what if any impact it may have on patients and organizations providing care.

Co-Occurring Physical and Behavioral Health Conditions

Impact on Patients. Numerous studies indicated that compared to the general population, higher rates of health conditions that can be prevented are experienced by individuals with behavioral health conditions. Some of these preventable conditions include cardiovascular and respiratory issues, diabetes, and HIV (Croft & Parish, 2013; Manderscheid et al., 2008; Razzano et al., 2015). Behavioral health conditions do not directly cause medical conditions such as diabetes, but the presence of behavioral health issues can have a significant impact on medical conditions because of common lifestyle and behavior issues like substance use, limited physical activity, unhealthy diet, and poverty (Corrigan et al., 2014; Mechanic, 2014; Robson & Gray, 2007).

Brown and colleagues (2015) examined services gaps for people with Schizophrenia and Bipolar Disorder among 21 states with a total sample of 143,710 people using Medicaid claims data from 2007. Their results indicated that even though services varied across states, approximately 70% of the individuals with SMI did not

receive any preventative care. Although these results were somewhat startling, the authors pointed out that the data were from 2007 and may not reflect current rates of service utilization due to recent policy changes, but the findings can provide a baseline for future service rate comparisons (Brown et al., 2015).

Another study that used Medicaid claims data from 1996 to 2001, examined the prevalence and severity of physical health conditions and co-occurrence of physical health conditions in persons with SMI (Jones et al., 2004). The sample included 147 individuals with SMI from Medicaid claims data in Massachusetts. The authors first assessed the generalizability of their sample by comparing it to a larger sample of a similar study, and no significant differences were found. Inclusion criteria for the sample was age 18 or older, unemployed, did not have severe retardation, and had a primary diagnosis of a schizophrenia disorder, major depression, or bipolar disorder (Jones et al., 2004). The authors also examined the reliability of claims data in reporting diagnoses by supplementing with interviews of clinicians and patients. The findings indicated that 74% of the sample had been treated for at least one chronic medical condition with the most common being pulmonary disease. And over half of the sample had been treated for two or more comorbid medical conditions. Similar to some other studies, predictors of health problems included gender, obesity, and age. Predictors of severity of health problems included age, substance disorders, and obesity (Jones et al., 2004). The findings from this study emphasized the problem of underuse of medical services by people with SMI. The authors suggested that individuals with SMI would benefit immensely from integration of medical and behavioral health services, which could

improve the long term impact of comorbid physical and behavioral health conditions (Jones et al., 2004).

Robson & Gray (2007) provided evidence of the elevated rates of multiple chronic diseases among patients with serious mental illnesses, such as Schizophrenia and Bipolar Disorder. Cardiovascular disease was reported to be 2-3 times more common in individuals with SMI, and respiratory diseases such as asthma and chronic bronchitis occur more frequently in these individuals. People with Schizophrenia were reported to experience significantly higher rates of breast and digestive cancers, and nearly twice as likely to contract HIV. Individuals with mood disorders were found to be nearly 4 times more likely to receive an HIV diagnosis compared to the general population (Robson & Gray, 2007). Robson and Gray note that many of the comorbid chronic health conditions, including cardiovascular diseases and HIV/AIDS, are largely preventable, through psychosocial interventions that promote healthier lifestyles that included smoking cessation, exercise, and protected sex.

Razzano and colleagues (2015) reported the top five most commonly occurring health conditions for people with SMI included hyperlipidemia, asthma, hypertension, arthritis, and diabetes in a study of 457 patients participating in a community mental health program. Razanno and her colleagues (2015) also reported that minorities with SMI were more likely to experience hypertension and diabetes, and people with Schizophrenia were generally more likely to have hypertension and arthritis.

Impact on the Health Care System. Individuals with comorbid physical and behavioral health conditions often receive inadequate care which can negatively impact the healthcare system due to service utilization (higher emergency services, and lower

preventative services) and overall high costs as a result of expensive services and unmanaged or preventable conditions. Previous studies have found that about 50% of the most frequent utilizers of medical services have diagnoses of depression, anxiety, substance abuse and other behavioral health conditions (Gatchel, 2004). Studies have also demonstrated that co-occurring physical and behavioral health conditions are related to more frequent emergency department use (Croft & Parish, 2013; Gerrity et al., 2014; Pirraglia et al., 2012; Shim et al., 2014). The high costs are not only the result of service use, but behavioral health conditions can also lead to decreased productivity and are a large factor in determining status for Social Security Disability (Mechanic, 2014). Behavioral health conditions are also costly due to their impact on labor, income, educational achievement, and criminal justice system involvement (Insel, 2008).

To examine the relationship between emergency department (ED) use and SMI, Shim and colleagues (2014) conducted a secondary data analysis of claims data from the Centers for Medicare and Medicaid Services (CMS) and found a strong link between Schizophrenia and diabetes for ED visits. The study confirmed that individuals with diabetes and Schizophrenia have more ED visits than individuals with only diabetes (Shim et al., 2012). The authors suggested that people with SMI typically receive less preventative care than the general population, and the addition of multiple chronic conditions results in higher service use. The authors also noted that primary care has been effective in decreasing ED visits for people experiencing chronic illnesses, but has not previously shown improvements in decreasing ED visits for people with SMI (Shim et al., 2014).

In a paper reviewing the Patient Centered Medical Home (PCMH) model, Croghan & Brown (2010) asserted that people with behavioral health conditions have higher health service use than individuals without those conditions, even when high rates of chronic health problems have been controlled for. The authors argued that even though that point has led many to believe that increasing access to mental health services would reduce service use and costs, those results have yet to be established (Croghan & Brown, 2010). In fact, in primary care settings with integrated behavioral health care, there was only one recent publication that found lower costs for patients with diabetes receiving treatment for depression; while most other studies found increases in patient health costs. Despite the increase in costs, the authors acknowledged that the increase was often related to higher pharmacy spending which resulted from better drug adherence and more visits, meaning that integrated treatment may still have been cost effective compared to other care (Croghan & Brown, 2010).

Melek and colleagues (2014) examined health care costs among individuals with behavioral health disorders compared to those without among individuals enrolled in Medicare, Medicaid, and commercial insurance during 2010. The authors found that people being treated for behavioral health conditions generally had costs 2-3 times higher. Total healthcare spending in the United States was also examined for the three groups. The results indicated that although individuals treated for behavioral health or substance use conditions made up fourteen percent of all insured individuals, their health care spending accounted for more than 30% of all spending in the United States. The study concluded that integration of behavioral health and medical care could lead to cost saving for individuals with comorbid behavioral health and physical conditions because

most of the cost for these patients came from medical services. The highest costs came from more severe conditions such as COPD, hypertension, and kidney disease. Due to the effectiveness the authors found for integrated medical and behavioral health services, they predicted that overall costs saving could range from nine to sixteen percent for patients with the most severe conditions and most potential for cost savings (Melek et al., 2014).

Health Care Reform

History of Behavioral Health and Medical Systems. During the first half of the 20th century, people experiencing serious behavioral health conditions were generally treated in public institutions. Psychiatric drugs became more available during the second half of the century, and some have argued this led to a decrease in extensive stays at psychiatric hospitals (Mechanic, 2014). However, there was also a change to more of a community mental health focus during the 1950s and 1960s. Subsequently, the 1963 Community Mental Health Center (CMHC) Act introduced the goal of providing a more collaborative environment between behavioral health and medical providers by offering services at a CMHC (Mechanic, 2014). While this offered an important alternative to institutionalization and led to more people with mental illness receiving treatment in a general medical setting, the goal of better coordination and collaboration between medical and behavioral health professions was not achieved and over time funding for CMHCs decreased (Mauer & Druss, 2010). At the same time “Community Health Centers” (CHCs), which include Federally Qualified Health Centers (FQHCs), were developed to provide health care to individuals that were unable to or had difficulty paying for medical services (Mauer & Druss, 2010). By the mid-1980s, the population

being treated in public hospitals had dropped by sixty-five percent, which some have attributed to Medicare, Medicaid, and other government programs such as expanding disability insurance (Mauer & Druss, 2010).

Managed care gained acceptance beginning in the mid-1980s (Mechanic, 2014). Managed care has been defined as “an organized approach to delivering a comprehensive array of health care services to a group of enrolled members through efficient management of services needed by the members, and negotiations of prices or payment arrangements with providers” (Shi & Singh, 2004, p.325). Managed care has been the predominant approach to health care in the U.S. since the 1990s primarily as a method to control rising health care costs that resulted from the separation of service delivery and financing (Shi & Singh, 2004). Managed care provided the control that was lacking for the delivery and payment of services by bringing the two functions together (Shi & Singh, 2004). Lower admissions and shorter stays in care were also partly credited to managed care (Mechanic, 2014). Overall, this method of care has been relatively unsuccessful for patients returning to the community from inpatient settings, with patients often receiving little follow-up or continued care needed to have a functional and quality life (Mechanic, 2014).

As a result of managed care, there was an increase in PCPs providing behavioral health services as well as more frequent use of mental health carve-outs, which separated funding for behavioral health services (Mauer & Druss, 2010). These changes further contributed to the separation of medical and behavioral health systems. Over time, a decrease in funding for CMHCs caused fewer people to obtain behavioral health services in those settings, while between 1998 and 2003 there was a large increase in people

receiving behavioral health care at CHCs, likely due to their requirement to provide services to anyone, even if they had no ability to pay (Mauer & Druss, 2010).

Ultimately, these changes have led to many people with SMI often receiving the majority of their care at CHCs or FQHCs (Mauer & Druss, 2010). Unfortunately, the competitive environment generated by managed care has caused the safety net of CHCs to get smaller, further limiting the availability of services for vulnerable populations such as those with SMI (Shi & Singh, 2004).

In the last 10-15 years many policy statements have emphasized the connection between physical and behavioral health and the need for systems to function in a more coordinated and collaborative manner (Butler et al., 2008; Mauer & Druss, 2010). For example, a report from the U.S. Surgeon General in 1999 discussed the impact of mental illness and highlighted that mental illness is second only to heart disease in terms of impact on health and productivity (Shi & Singh, 2004). Additionally, the report discussed the budget impact of mental illness, with \$99 billion going only towards treatment for mental health disorders, substance disorders, and Alzheimer's in 1999 (Shi & Singh, 2004). More recently there has been a trend towards increasing integration of health care systems, which could be related to the continued evolution and dominance of managed care (Shi & Singh, 2004). Likely stimulated by managed care, providers have gained interest in integrating care for the possibility of cost savings, ability to partner with other providers to increase the range of services provided, and some more independent providers may need to establish linkages to compete with the increasing power of managed care (Shi & Singh, 2004). Regardless of the reasons why individual providers or organizations want to move towards coordinated care, health care policy has

begun to move in that direction as well, which is expected to have a positive impact on people with behavioral health disorders and co-occurring medical conditions.

Recent Changes in Health Care. Recent changes in policy have significant potential to address many of the barriers to effective treatment (Brown et al., 2015; Butler et al., 2008; Druss & Mauer, 2010; Shim & Rust, 2013). The most significant change came from The Patient Protection and Affordable Care Act, commonly referred to as the ACA passed in 2010. The ACA offers an attempt to bring down the wall separating healthcare into the two separate systems of medical care and behavioral health care and instead makes a shift towards merging the two systems (Croft & Parish, 2013). The most significant contributions the ACA has been expected to have on the healthcare system include Medicaid expansion, financing and reimbursement changes, and infrastructure improvements (Croft & Parish, 2013).

The expansion of Medicaid is estimated to make 32 million more people eligible for insurance by expanding eligibility criteria. Additionally, it is expected that of the newly eligible population, about 5.5 million will be experiencing a mental illness or substance disorder (Croft & Parish, 2013). The ACA also increases access through parity in benefits. This means that insurance companies can no longer cap spending for mental health services lower than for medical services, and mental health services will be required benefits. These changes will allow more people in need of behavioral health services to not only access those services, but not face limitations in the services they need (Croft & Parish, 2013).

Changes to financing and reimbursement include increasing support of medical home models where behavioral health and medical providers can offer coordinated care

through pilot programs, and increased Medicaid options for states that allow patients to choose their own health home. The ACA also promotes provider involvement in Accountable Care Organizations (ACOs) which allow providers to collaborate to improve care quality and share costs (Croft & Parish, 2013). This could provide opportunity for behavioral health and medical providers to join together for cost savings and provide more coordinated care (Croft & Parish, 2013; Shim & Rust, 2013). Additionally, Medicaid reimbursement for primary care is increasing to levels of Medicare reimbursement which could provide incentive for care coordination. Other changes include expansion and increase in programs and grants to support the co-location of medical services in behavioral health settings (Croft & Parish, 2013). However, it is important to note that although the new policy changes do address payment for medical and behavioral health services, the changes do not address all potential financial and reimbursement issues that are problematic to providers implementing and sustaining coordinated care models (Croghan & Brown, 2010).

To support changes in infrastructure, the ACA established a “Community-based Collaborative Care Network Program” (Croft & Parish, 2013) which is designed to support providers attempting to offer coordinated care. The Federal Coordinated Health Care Office was established to monitor and offer technical assistance in the development of coordinated care programs. And finally, the ACA provides funding for workforce development to support a workforce competent in providing coordinated care (Croft & Parish, 2013).

Criticisms of Health Care Reform. Although the ACA has generated changes in health care access and service delivery, it is not without criticism. Most would agree

that linkages and coordination among behavioral health and primary care service providers will lead to improved outcomes, but the outcomes are yet to be determined with inconclusive or limited findings regarding the effectiveness of a coordinated approach, especially for individuals with SMI (Shi & Singh, 2004). In theory, the ACA has the potential to establish a much improved health care system, but the goals of this health care reform can only be realized if the resources and guidance necessary for such changes are there. First, the shift to coordinated care will require a cultural change among behavioral health and medical providers in terms of attitudes, role changes, and adaptation to competing demands (Gerrity et al., 2014). Behavioral health providers must be able to understand the importance of physical health and the connection between physical and mental health. Medical providers will have to overcome barriers such as discomfort with treating more difficult patients that often require more time and attention (Druss et al., 2010; Mechanic, 2014). Both medical and behavioral health providers will need to increase their capacity to treat patients in a coordinated structure. Having a well-trained workforce will be key to increasing capacity and should decrease resistance to coordination (Croghan & Brown, 2010; Gerrity et al., 2014; Green & Cifuentes, 2015; Mechanic, 2014), however, primary care providers will face increasing expectations in addition to their already limited time and financial pressures (Druss et al., 2010; Mechanic, 2014). Providing adequate training to prepare medical and behavioral health providers to work in a coordinated environment will require a significant amount of time and resources. Although training and culture shifts are big challenges to ensuring a successful transition to a coordinated health care system, the most commonly mentioned barrier is related to inadequate reimbursement for coordinated care practices (Croghan &

Brown, 2010; Gerrity et al., 2014). In order for coordinated care to function, there must be financing and reimbursement structures in place to facilitate the process, which is one area the ACA does not adequately address (Croghan & Brown, 2010).

To summarize, the passage of the ACA has pushed the health care system in a direction which theoretically could lead to benefits that include lower costs, better managed chronic conditions, increased access to quality care, and generally better health of the population, especially for individuals with behavioral health disorders. However, it has yet to be determined whether various models of coordinated care will be successfully implemented while overcoming existing barriers and flourish in the long-term, or crumble due to a poorly implemented and ineffective policy.

Coordinated Care

Overview. It is not surprising in the literature for coordination between behavioral health and physical health, the word frequently used to describe the behavioral health and medical healthcare systems in the United States is “fragmented” (Croft & Parish, 2013; Gerrity et al., 2014; Keeley et al., 2014; Mauer & Druss, 2010; Phelan et al., 2001; Woltmann et al., 2012). This fragmented system has resulted in poor coordination between behavioral health and physical health services in addition to creating a system that is especially difficult to navigate for individuals with behavioral health conditions. Ultimately, these individuals are unlikely to have their physical health needs met, leading to poor health outcomes (Croft & Parish, 2013; Gerrity et al., 2014; Jones et al. 2004; Robson & Gray, 2007) as well as increased costs to the health care system (Green & Cifuentes, 2015). The division of these systems has created two primary scenarios for people with comorbid behavioral health and physical health

conditions. In some cases, the first point of care is with a Primary Care Physician (PCP) where treatment of behavioral health conditions can be minimally effective (Mauer & Druss, 2010; Mechanic, 2014) and the PCP may be less skilled in treating behavioral health conditions effectively (Colon-Gonzales et al., 2013; Shim et al., 2014). The second scenario involves people in need of primary care services, but being treated in a behavioral health setting (Mauer & Druss, 2010). These scenarios lead to two options for increasing coordination between primary care and behavioral health. The first option involves bringing mental health specialty into primary care settings, and the second option involves bringing primary care into behavioral health settings (Mauer & Druss, 2010). Although the primary focus of this study is on the second option, the majority of the literature examines behavioral health in primary care settings suggesting a need for more studies involving coordination and integration of primary care within behavioral health settings. More studies of care coordination for individuals with SMI are especially needed because of the fact that many of those individuals also suffer from physical health conditions but they are unlikely to seek care in a medical setting or obtain needed medical services (Manderscheid et al., 2008; Shim & Rust, 2013).

All of the evidence indicating that people with behavioral health conditions are at higher risk of having chronic health conditions which could be preventable or managed given proper medical treatment leads to the conclusion that current methods of care have not been effective for individuals with behavioral health conditions. Medical and behavioral health professionals have increasingly recognized for decades that the connection between physical and psychological needs are intertwined when it comes to the health of all people (Black & Kase, 1963). Changing needs in the health of our

population, combined with the increasing evidence of the complex needs of those with behavioral health conditions has triggered a shift that has been a long time coming; moving away from delivering medical and behavioral health services separately, and moved towards an approach that encompasses coordination and collaboration (Black & Kase, 1963).

Coordinated care and patient outcomes. The link between physical and behavioral health disorders has been well documented in the literature. In terms of addressing the concern over effective care strategies, many have agreed that improved coordination among service providers, specifically primary care and behavioral health would provide the greatest benefit for individuals with mental illness (Butler et al., 2008; Gerrity et al., 2014; Shim et al., 2014; Pirraglia et al., 2012). Some randomized controlled trials have confirmed that coordinated, team-based approaches between behavioral health and primary care can result in improved care and outcomes for behavioral health and substance disorders (Druss & Mauer, 2010). Despite consensus in the literature showing that people who use primary care regularly often have better health outcomes (Croghan & Brown, 2010), people with behavioral health issues, especially SMI, are less likely to seek regular primary care services. More often than not, individuals with SMI obtain services from behavioral health clinics (Butler et al., 2008). To address this disparity, two general models for increased care coordination are often discussed in the literature. The first, and most commonly studied, involves care being provided in a primary care setting. The Patient Centered Medical Home (PCMH) designed to use multidisciplinary teams to help patients manage illnesses in a medical setting is a common model. Alternatively, there are models that involve the co-location

of primary care within a behavioral health setting. This approach offers the same sort of team-based method, but in a setting more amenable to individuals with mental illness because they are more likely to seek services in this type of setting (Druss & Mauer, 2010).

In a study that examined the impact of co-located services, Pirraglia and colleagues (2012) conducted a longitudinal study of veterans with SMI receiving services in a facility with primary care co-located within a mental health clinic. Electronic patient records were reviewed to determine whether the co-located program had any impact on service use and cardiovascular risks. The patient records were examined for six months prior to enrollment in the program and six months after. The results for service use showed an increase in primary care visits, but changes in emergency department use was not significant which the authors attributed to lack of power (Pirraglia et al., 2012). Despite the mixed results for service utilization, patients did show improvements in their cardiovascular disease risk goals when receiving services in a co-located setting. Although these findings were consistent with other literature in terms of the benefits of co-location, the authors mentioned that a cost-benefit analysis would have been valuable but was beyond the scope of the study (Pirraglia et al., 2012).

In 2010, Druss and colleagues conducted one of the first population-based studies testing the impact of primary care in a mental health setting. The study was a RCT of 407 individuals with SMI in a single urban community mental health setting. Patients were grouped into usual care or the intervention of medical care management which involved a care manager that coordinated communication with providers, provided education on health conditions, and support for barriers in obtaining primary care

services (Druss et al., 2010). This study did not involve medical services on site; receiving medical services was essentially referral based through the care manager. However, the authors noted that the care management model used in this study was much less expensive than approaches that involve co-location, and therefore might be more practical for smaller clinics lacking resources and funding (Druss et al., 2010). The results showed that individuals in the intervention group had more improvement in continuing primary care services as well as a greater likelihood to report a minimum of one visit to a medical doctor. The authors suggested that although care managers do not provide medical services, they can be helpful in facilitating access to primary care (Druss et al., 2010).

In a meta-analysis of Randomized Controlled Trials (RCTs) examining the impact of collaborative care, short-term and long-term outcomes were examined for over 12,000 patients with depression in either a collaborative care or usual care group (Gilbody et al., 2006). In the short term period of six months, collaborative care resulted in improvements in depression outcomes compared to the usual care group. The improvement in outcomes continued for the 12 month, 18 month, 24 month, and 5 year periods, which suggested that collaborative care was effective in improving outcomes for patients with depression. The authors for this meta-analysis noted that results for the long-term were less certain than the short-term, and therefore future studies should examine long-term impacts as well as cost-effectiveness of collaborative care (Gilbody et al., 2006).

Similarly, a systematic review and meta-analysis of RCTs comparing Collaborative Care Models (CCMs) with other care models was conducted on studies

published through 2011 (Woltmann et al., 2012). The inclusion criteria for studies required a minimum of three of six criteria from the Chronic Illness Care Initiative which ranged from patient support to community resource linkages. The authors pointed out that many RCTs have shown care management approaches like the CCM lead to improvements in many chronic health conditions. The majority of RCTs in this review focused on depression with very few on Bipolar Disorder, anxiety, or other/multiple disorders (Woltmann et al., 2012). On average, the RCTs had 3.9 of the 6 CCM criteria which leads to questions regarding the fidelity to the model. Results from the systematic review found about 50% in favor of the CCM intervention, and all but one showed no difference between the intervention and comparison groups (Woltmann et al., 2012). Although the results of these studies commonly favored the intervention among all behavioral health conditions, the authors pointed out that the result was slightly less favorable for individuals with Bipolar Disorder or other/multiple conditions. This study also reviewed 21 cost analyses of the CCM interventions. Of the ten studies that included p values, nine found no difference in costs between the intervention and control (Woltmann et al., 2012).

Coordinated care and health care system outcomes. Health care costs have increased dramatically in the last half a century. Nearly \$752 billion dollars was spent on health care needs in 1991 compared to about \$42 billion in 1965 (Chiles et al., 1999). Lower costs are commonly cited as a potential benefit of increased care coordination between primary care and behavioral health providers (Chiles et al., 1999; Croghan & Brown, 2010; Green & Cifuentes, 2015; Shim & Rust, 2013). Many studies have found that psychological interventions contributed to lower costs for general medical services

(Chiles et al., 1999). However, there have been mixed findings in the literature regarding the impact of care coordination on health care costs. Some have suggested that costs of coordination tend to be high in the beginning, but clinical outcomes typically continue to improve beyond the initial six months and costs saving are more likely to be seen beyond the first year of implementation (Katon & Unutzer, 2006). Others have suggested that because much of the costs associated with comorbidities come from medical services, therefore cost savings will result from better management of medical conditions via coordinated care (Melek et al., 2014). Despite many studies having demonstrated benefits of coordination, that is not enough to overcome the barriers that exist to implementing such practices outside of a controlled study. The financial barriers to sustaining coordinated care need to be addressed if care coordination efforts are to continue (Butler et al., 2008). Additional studies need to demonstrate improvements in costs or service utilization in order for health care system payers to buy in and support these models and gain access to funding (Butler et al., 2008).

The Minnesota Evidence-based Practice Center conducted a systematic review of RCTs and quasi-experimental studies and examined components of integrated models (Butler et al., 2008). Studies included both primary care settings and specialty behavioral health settings. Findings indicated that integrated care was effective in both settings and that there was no significant effect related to integration level (i.e. more integrated versus less integrated) on patient outcomes in either setting. However, the authors pointed out that most studies focused on patients with depression (Butler et al., 2008), which leaves patients with more complex conditions still understudied in terms of the impact of coordinated care. In addition, the authors suggested that there was not enough evidence

to determine which models of care coordination are best, leading to concerns regarding premature adoption of models without comprehensive testing of what criteria are necessary for improvements to occur and in which settings various models work best. To do this, future studies need to be more explicit in what components of coordinated care are being tested as well as test these models in a variety of settings (Butler et al., 2008). And similar to other studies, the authors pointed out that very few studies included analyses of costs which is essential in order to determine the feasibility of implementing any models of coordinated care (Butler et al., 2008).

In a study of 120 veterans from a Veteran Affairs (VA) mental health clinic, the patients were randomly grouped into receiving care through an integrated clinic or a general medicine clinic to compare health outcomes (Druss et al., 2001). The results found that individuals at the integrated clinic were more likely to have a PCP visit and more of those visits. Costs were examined, but there were no significant differences between the groups for healthcare costs. However, the authors emphasized that the size of the sample created a limitation for statistical power on the cost estimates (Druss et al., 2001).

In a follow-up on a study discussed in an earlier section involving 407 patients with SMI receiving psychiatric outpatient services, the authors focused on quality, costs, and care outcomes in a two-year follow-up using chart reviews (Druss et al., 2011). Patients in the care manager group had better quality in primary care services, and by the second year had decreased costs compared to the usual care group (Druss et al., 2011). The authors examined costs from the health system perspective as well as managerial perspective. From the managerial cost perspective, it was noted that revenue would have

increased if more patients had Medicaid or other insurance. Since the majority of patients did not, the program was unsustainable beyond the grant period (Druss et al., 2011). The cost problem identified in this study could possibly be addressed through healthcare reform. From the health system perspective, costs were determined based on the cost and quantity of different services such as outpatient behavioral health and medical, emergency room, and inpatient services. For these costs, the authors stated that by the second year there was a cost-offset (Druss et al., 2011), which provides evidence for claims in previous studies that cost decreases are more likely to be seen over a longer timeframe.

The empirical literature examining outcomes of coordinated care is promising, but limited. There is a need for more empirical studies to back up the claims that coordinated care is effective, especially for patients with more serious behavioral health and medical conditions. Another concern is the paucity of literature examining the implementation and success or failure in adoption of coordinated care models (Proctor, Landsverk, Aarons, Chambers, Glisson, & Mittman, 2009). Despite the support for effective practices such as coordinated care, there is a gap in what are known to be accepted practices and what is actually implemented (Proctor et al., 2009).

Implementing coordinated care. Regardless of the model of care coordination that an agency chooses to implement, the change often involves staff and organizational capacity issues which can include relationships among providers, effective information sharing, and financial changes (Davis, Balasubramanian, Waller, Miller, Green, & Cohen, 2013; Gerolamo, Kim, Brown, Schuster, and Kogan, 2014). Although many agencies may not be able to implement all components of coordinated care,

improvements in patient outcomes are still possible with some mixture of these elements (Woltmann et al., 2012). Implementing any model of coordinated care will come with challenges for an agency and staff. Many challenges may not have been identifiable in a controlled study, but only realized once being implemented in a real world practice (Davis et al., 2013). Geographic location may also present challenges for providers implementing coordinated care due to access to resources, especially in rural areas where services and access to well trained staff are limited (Corrigan et al., 2014; Gerolamo et al., 2014; Mechanic, 2014; Miller, Petterson, Burke, Phillips, & Green, 2014).

Kodner and Spreeuwenberg (2002) explained integrated or coordinated care as being a central part of systems theory in that all parts of a system are linked. In order for a system to function optimally, many parts of a systems must be able to collaborate. The authors argued that in health care, this concept of various system parts collaborating is key for better performance (Kodner and Spreeuwenberg, 2002). Elements of coordination that are emphasized or focused on differ depending on the interest of a group or individual. As seen in much of the literature, the meaning of integration or coordination varies as much as which elements are considered important. Care coordination is frequently viewed from a macro perspective that focuses on issues such as access to care, quality, efficiency, and costs. Some suggest that the patient perspective should also be incorporated into the definition of care coordination by adding a focus on quality of life and patient satisfaction into the goals of coordination (Kodner and Spreeuwenberg, 2002).

With the patient and macro perspectives together, Kodner and Spreeuwenberg (2002) outline five strategies that should be addressed to successfully achieve

coordinated care. The first strategy involves establishing consistent funds for all elements of care. The second involves administrative functions. This strategy includes consolidating functions, coordinated planning, and assessing needs. The third strategy is organization, which includes co-locating services, patient sharing agreements and planning, collaboratively managing services, and developing partnerships. The fourth strategy is service delivery and involves shared training, common information sharing, care management functions, interdisciplinary teams, and integrated health information systems. The final strategy is clinical and pertains to standardizing criteria for diagnosis and assessments, collaborative treatment planning, sharing of patient records, on-going patient monitoring, standard guidelines and protocols, and consistent contact and support for patients and families (Kodner and Spreeuwenberg, 2002). These broad strategies are seen in the majority of care coordination models. However, it is recognized in many papers that the combination and level of strategies implemented is dependent upon needs of the patient population and barriers and needs of providers (Kodner and Spreeuwenberg, 2002; Woltmann et al., 2012).

Gerolamo et al. (2014) conducted a qualitative study of a co-location model that involved bringing medical professionals into two behavioral health agencies. These agencies were piloting a program called Behavioral Health Home Plus (BHHP) that aimed to serve individuals with SMI. The authors mention that the study contributed to the research on implementation of co-located care in rural areas. The agencies in rural Pennsylvania attempted to improve coordination by hiring nursing staff, trained some staff as wellness coaches, implemented a web-based tool for patient outcome tracking, and building relationships and collaboration with community PCPs. Two rounds of focus

groups were conducted six months apart with 32 individuals in the first round and 38 in the second round (Gerolamo et al., 2014). Focus groups were done with leadership, staff, and clients to understand how they changed their processes to accommodate medical care, training needs, engage clients in care, track outcomes, and improve relationships. The interviews used a semi-structured format that covered areas aligned with the SAMHSA-HRSA framework for six levels of physical and behavioral health integration. The first round of interviews covered agency and staff care processes, location, financial information, and staff training. The second round examined changes and success and barriers experienced during implementation (Gerolamo et al., 2014).

This study demonstrated that agencies were able to effectively implement integrated care processes and improve both staff and patient awareness of health and wellness. Some factors that contributed to the agencies' success included leadership commitment, positive staff communications, and the closeness of medical and behavioral health staff (i.e. working in the same location). The program implemented was closely aligned with the SAMHSA-HRSA framework mentioned previously, and some components of the framework posed more challenges than others (Gerolamo et al., 2014). Those challenging integration elements included: developing referral processes, having a standard process for screening, hesitancy of non-medical professionals to deal with physical health due to lack of training, role confusion for peer specialists, and difficulty with information sharing within agencies and with providers in the community. One specific challenge that agencies were unable to do much about was funding and billing. These agencies like many others depend on financing from Medicaid which creates a

barrier to reimbursement as well as less incentive to build effective partnerships with other providers (Gerolamo et al., 2014).

Another study examining implementation efforts focused on behavioral health that obtained Primary and Behavioral Health Care Integration grants from SAMHSA. This study gathered data from 56 grantees from 26 states that had received the grant in either 2009 or 2010. Data included both qualitative and quantitative components from grant proposals, quarterly reports, and telephone interviews with staff to confirm information that was taken from proposals and reports (Scharf, Eberhart, Schmidt, Vaughan, Dutta, Pincus, and Burnam, 2013). Similar to other studies, the agencies involved here varied in their characteristics and how various elements of coordination were implemented. The sites had large differences in patient counts, number of patients with SMI, and location. Most agencies primary care partner was a Federally Qualified Health Center (FQHC), and they varied in the formality of the partnership. Additionally, there was variation in whether primary care was located on site or at another location (Scharf et al., 2013).

Scharf and colleagues (2013) coded reports and proposals to identify challenges in implementation during different stages of the process. At the start of implementation, the most common barriers were recruiting and retention of qualified staff, managing data for the grant and using EHRs, availability of space for services, obtaining licenses, and information sharing between primary care and behavioral health providers (Scharf et al., 2013). At follow-up one year later, some common barriers were the same and others were new. A few challenges reported by some at both baseline and follow-up included recruitment and retention, staff conflict or morale issues, and increased costs. Barriers

that were reported more at follow-up than baseline were related to EHRs and data management, information sharing, and merging protocols for both practices. At follow-up, providers had difficulty with recruiting and retaining patients in the grant program (Scharf et al., 2013). Despite the limitations in this study, such as lacking statistical power and inability to examine long term sustainability at the end of the four year grants, it did provide valuable insight into provider challenges that are consistent with other studies and theory on implementation.

A mixed-methods study of eleven practices (9 primary care and 2 behavioral health settings) was conducted to learn how agencies integrated care in the Advancing Care Together (ACT) program (Davis et al., 2013). The ACT program is a four-year program aimed at studying strategies real world practices use to integrate care. Practices involved in this program received \$50,000 a year for three years. Multiple data sources to examine integrated practices included documents such as grant applications, emails communications, and reports, biweekly online journal entries shared among team members, site visits, interviews with staff and patients, and a staff survey. The authors stated that integration was achieved by three methods: establishing partnerships with other organizations, hiring new staff, or increasing hours for current behavioral health and medical staff (Davis et al., 2013). A unique aspect of this study was that the authors examined the stage at which a site was in terms of implementation (i.e. start-up, cooperation, collaboration, and full integration). Challenges to integration identified in the early stages for all sites included: (1) consistent workflow that allowed for constant access to integrated services (i.e. scheduling and patient demands), (2) difficulties

adjusting to leadership and culture change among staff, and (3) managing and utilizing data (Davis et al., 2013).

Sites were able to overcome workflow challenges by increasing staff hours, creating time for brief consultations and hand-offs, and developing rules and guidelines. In addressing struggles among staff related to role confusion, opinions on patient needs, and agreeing on how to work together and share information, leadership was essential. Having effective leaders in an organization that could facilitate interdisciplinary struggles and team issues was critical for culture and practice change. Managing and using data was the third most common challenge for practices. Many did not have systematic data collection methods for behavioral health or medical conditions. To address this challenge, practices developed screening protocols, learned how to use data to manage patient conditions and inform care decisions. One problem that practices were not able to address was that many were not using an electronic health record (EHR) and some had to manage two separate EHR systems. The findings from this study demonstrate the difficulties and complexities agencies face when implementing coordinated care practices, but also shed light on how they were able to address some barriers in a real world setting (Davis et al., 2013).

Although there appear to be few studies specifically focusing on the implementation of coordinated care models, several lessons can still be learned from previous studies on coordinated care. First, essential to implementing new processes or practices is ensuring staff understand the changes and are appropriately trained (Gerolamo et al., 2014; Mechanic, 2014). Coordinating care between primary care and behavioral health providers requires that each side understand the treatment and care of

both physical health and behavioral health conditions in order to collaborate with each other. Additionally, staff need clarity on roles in order for all elements of care coordination to be implemented. If staff are not clear on whose role it is to engage in health promotion, screen for medical or behavioral health conditions, or treat conditions, there is the risk of various elements of care falling through the cracks (Gerolamo et al., 2014; Robson and Gray, 2007).

Second, the development of collaborative relationships between medical and behavioral staff within agencies and throughout communities with communication protocols will facilitate coordination (Gerolamo et al., 2014). Lack of collaborative relationships and communication protocols increases the likelihood of duplicating care and providers missing information about patients that could impact their care (Corrigan et al., 2014). The development of collaborative relationships may require special leadership to address difficulties unique to each agency (Davis et al., 2013).

Third, without proper billing and funding infrastructure, it is not possible for medical and behavioral health professionals to really integrate or coordinate care. With some services not being reimbursable on either the medical or behavioral health side, there is little ability or motivation to coordinate care (Gerolamo et al., 2014; Mechanic, 2014). Even if agencies are able to obtain short term funding to start implementing coordinated care, they must have mechanisms in place to fund this level of care beyond the initial start-up.

Summary and Conclusions

Most studies on the impact of coordinated care involve the use a primary care setting rather than a community mental health setting. The common reasoning for this is

that most people seek mental health treatment from a Primary Care Physician (Croghan & Brown, 2010; Shim & Rust, 2013); however, the majority of these studies focus on individuals with depression (Butler et al., 2008; Gilbody et al., 2006; Mauer & Druss, 2010). This is a big limitation in the current literature given that most of the evidence of effectiveness on coordinated care can only be applied to less serious forms of mental illness. Until more studies are done on coordinated care for patients with serious mental illnesses such as Bipolar Disorder or Schizophrenia, we cannot be certain what the outcomes will be for this group. The few studies that have examined coordinated care in mental health settings often take place in environments that are relatively integrated to begin with such as the VA, which severely limits generalizability to more common community mental health clinics that do not have access to the resources that these larger more integrated settings do (Butler et al., 2008; Croghan & Brown, 2010; Druss et al., 2001; Druss et al., 2010; Manderscheid et al., 2008). Though findings have been relatively promising in studies conducted in primary care and mental health settings, the impact of coordinated care for a variety of mental health conditions, especially the more severe conditions and comorbid mental health and medical conditions remains understudied. In general, there is a large gap in the literature on outcomes of coordinated care for individuals with SMI (Gerrity et al., 2014). This population in particular is higher risk due to severity of conditions and unpredictable treatment responsiveness in addition to being costlier, and more likely to receive services in a mental health setting rather than in a primary care setting (Butler et al., 2008). For that reason, it seems important for studies on the effectiveness of coordinated care for this population to be conducted in a mental health setting, thereby bringing medical services to this vulnerable

population rather than expecting them to seek services elsewhere (Butler et al., 2008; Croft & Parish, 2013). Although effectiveness outcomes for coordinated care have generally been positive, the fact that most of these studies were done in primary care settings and used patients with less serious conditions, those findings may not be applicable to individuals with SMI receiving care in a behavioral health setting.

Many of the studies that have examined the impact of coordinated care used the rigorous method of a Randomized Control Trial (RCT), and as mentioned above they tend to focus on depression and take place in primary care or general medical settings (Butler et al., 2008; Gerrity et al., 2014; Gilbody et al., 2006; Mauer & Druss, 2010). Despite the RCT being viewed as the highest standard in studying interventions, there is a rationale for why that design may not be the most appropriate for the current topic. Coordinated care interventions may show success in a controlled environment, but sustaining these practices in a real world setting can introduce a variety of difficulties (Mauer & Druss, 2010). Barriers to implementing and sustaining coordinated care include the inability to secure or maintain funding and resources, overcoming organizational barriers such as changing culture, and developing feasible information sharing procedures (Butler et al., 2008; Mauer & Druss, 2010). Conducting studies on coordinated interventions in real world settings and examining elements currently missing or limited in the literature on costs and impact on understudied populations could provide valuable knowledge regarding how these interventions are carried out in a real life setting and the feasibility of sustaining them.

One study was found that used semi-structured interviews for staff at integrated clinics in thirteen locations nationally (Kathol et al., 2010). The authors suggested that

clinical trials were not the best method for understanding the implementation of coordinated care models. The interviews asked staff about factors that enabled sustainability of coordinated models and inhibited success based on their experience in a real world setting. Some factors related to success included training on providing integrated services, integration of both medical and behavioral health records, and the use of care coordinators. Barriers to success included conflicting payment policies and poor relationships among providers (Kathol et al., 2010). Overall, this study provided qualitative findings related to the implementation of care coordination models and was able to provide detailed information about each site and descriptions of their models. The proposed studies will be able to provide a similar level of contextual detail about real world practices, but also add value through quantitative data to examine outcomes in patient service utilization for two care coordination models.

Despite many limitations in previous studies, there is evidence that care coordination can lead to improvements in clinical outcomes, service utilization, and costs, at least for patients with depression. However, findings are less clear and somewhat limited in settings serving patients with more severe and complex mental health conditions. The argument for coordinating primary care services within the context of a behavioral health setting is becoming increasingly common due to the complex needs of people experiencing serious mental health conditions in combination with medical conditions (Butler et al., 2008; Croft & Parish, 2013). Of course, the feasibility of implementing this sort of model also comes into question because of the two primary challenges: resources and funding (Butler et al., 2008; Croft & Parish, 2013; Druss et al., 2011). However, coordinated care could become a more feasible option as a result of the

ACA making care coordination a priority with new initiatives for health home models in behavioral health settings (Druss et al., 2011) and increased funding opportunities (Druss & Mauer, 2010). Because many studies were done prior to health care policy change in 2010, findings from previous studies could be less relevant because many obstacles to coordination could have been removed or new challenges developed due to the new policies emerging as a result of PPACA. Studying the changes in coordinated care delivery over time within the agencies included in this study could provide rich information on implementation and patient outcomes over the lifecycle of innovation (care coordination) adoption, implementation, and institutionalization.

CHAPTER 3

CHALLENGES IN IMPLEMENTING MODELS OF COORDINATED CARE: SIX CASES OF COORDINATING PRIMARY CARE SERVICES AND BEHAVIORAL HEALTH SERVICES

Nicole K. Janich, MSW & Michael S. Shafer, PhD

Abstract

The purpose of this study is to explore implementation challenges behavioral health agencies have faced in moving towards new models of care coordination which have been mandated by healthcare policy. Specifically, this study looks at six behavioral health agencies in a rural region of a southwestern state. Three agencies had adopted a co-located model of care coordination, which involved partnering with a local Federally Qualified Health Center to provide primary care services at the behavioral health agency facilities. Three other agencies included in the study had adopted a fully integrated model of care coordination, which involved hiring their own practitioners to provide primary care services at their facilities. Results from this qualitative study identified seven areas of implementation challenges experienced by agencies including: financial mechanisms, regulation, electronic health records, role clarification, information sharing, medical provider stigma, and staff training on coordinated care. Some of the most common challenges for all agencies regardless of the model being implemented were: funding mechanisms, information sharing, and regulation. Findings from this study indicate that although healthcare policy has moved toward a more progressive form of healthcare, challenges still remain that threaten the sustainability of such care. Improvements at the policy level are needed to reform payment mechanisms and

regulatory burden, in addition to making improvements at the local level to train practitioners.

Introduction

The concept of coordinated care has been around for decades, but it was not until recently that this form of care gained momentum. Research has suggested the benefits of coordinated care in both medical and behavioral health fields for some time (Brown et al., 2015; Butler et al., 2008; Druss & Mauer, 2010; Jones et al., 2004; Razzano et al., 2015; Robson & Gray, 2007; Shim et al., 2014). Although a consistent definition of coordinated care has not been established in the literature, generally the concept of coordination care refers to either primary care practices adopting a behavioral health component of care or behavioral health practices adopting some form of primary care services with the purpose of treating the whole person. In 2010, the Patient Protection and Affordable Care Act (PPACA) created a policy mandate to bridge the gap between medical care and behavioral health care (Croft & Parish, 2013). The policy provided recognition of the function that behavioral health plays in the general population's overall health (Mechanic, 2014). The PPACA was expected to have a positive impact for people with comorbid medical and behavioral health conditions through three interrelated policy drivers: the expansion of Medicaid; changes in financing and reimbursement; and improvements in health informatics and infrastructure (Croft & Parish, 2013). One of the more significant changes brought about by the PPACA has been behavioral health agencies implementing a model of coordinated care (i.e. adding primary care to their services). Although some agencies had already or were moving in that direction prior to the policy mandate, this change was likely a large effort for most.

A variety of models for enhancing care coordination between primary care and behavioral health services has been promulgated over the years (e.g., Blount, 2003;

Doherty et al., 1996; Heath, Wise Romero, and Reynolds, 2013). Blount (2003) originally proposed three models of coordination: coordinated care, co-located care, and fully integrated, with each model characterized by variations in staffing, collaboration with other agencies, reimbursement sources, and a plethora of other issues. As behavioral health agencies respond to the calls for better care coordination resulting from the PPACA, they will wrestle with a variety of staff and organizational capacity issues such as relationships between medical and behavioral health professionals, information sharing, payment changes, and patient engagement (Davis, Balasubramanian, Waller, Miller, Green, & Cohen, 2013; Gerolamo, Kim, Brown, Schuster, and Kogan, 2014). For rural and frontier area-based providers, the challenges of enhanced care coordination will be complicated by the geographic dispersion of a patient base, and the unique challenges of accessing and retaining well trained staff (Corrigan et al., 2014; Gerolamo et al., 2014; Mechanic, 2014; Miller, Petterson, Burke, Phillips, & Green, 2014).

To date, research on implementing care coordination has been focused primarily on primary care settings enhancing their behavioral health services with a paucity of research on behavioral health agencies implementing their primary care services (Croghan & Brown, 2010; Shim et al., 2014). Examination of implementation challenges, particularly among early adopters of an innovation, such as care coordination, is critical to subsequent implementation and scaling up efforts (Proctor et al., 2011). A model proposed by Shortell (2004) identifies four inter-related levels of change, all of which must be targeted for successful implementation efforts. These four levels include: the larger system and environment in which the implementing organization is located; the organization itself including its structure and strategy; the group or team of staff

implementing the change in terms of their degree of cooperation, coordination, and shared knowledge; and individual staff knowledge and skill.

This study examined implementation challenges experienced by six behavioral health agencies operating in the rural/frontier areas of a southwestern state. Site visits and interviews were conducted as part of a larger study of network capacity of the agencies' ability and needs to implement models of coordinated health care services. Findings from this paper contribute to gaps in our understanding of implementation of innovation and organizational change in behavioral health care settings. *Model of coordination* (co-located or fully integrated) was used as a case sorting variable in understanding the organizational challenges involved in healthcare innovation. Comparing *implementation challenges* by model of coordination may indicate whether implementation of a particular model leads to different challenges for behavioral health agencies and would therefore be more feasible or sustainable than the other model. In this study, two models of coordinated care were studied: co-located health care and fully integrated health care. Co-located refers to behavioral health agencies that partnered with a Federally Qualified Health Center (FQHC) which provided primary care services at the site(s) of the behavioral health agency. Fully integrated health care refers to behavioral health agencies that provided both primary care and behavioral health care directly, in the same location, by staff employed by the same agency.

Methods

Sampling

A total of six agencies were purposively sampled to ensure maximal variation in the levels of care coordination (Shadish et al., 2002). As reflected in Table 1, three of the

agencies had implemented a co-located model of care coordination while three agencies had implemented a fully integrated model of care coordination. The co-located agencies partnered with the same Federally Qualified Health Center (FQHC) which provided primary care services on site at the behavioral health agency at least one day per week, with itinerant physicians and nurses traveling to the behavioral health agency from the FQHC. and operated only one electronic health record (EHR) system (different systems at each agency), and their FQHC counterpart operated a separate EHR system. The fully integrated agencies had physicians and nurses on their staff and premises that provided primary care services on a routine basis. Each of the fully integrated agencies were utilizing two separate EHRs, one for primary care services and another for behavioral health services.

Table 1					
<i>Agency Characteristics (n = 6)</i>					
Agency	# Facilities	Model of Coordination	# Staff	# Patients	Funding (in millions)
Agency 1	5	Co-located	212	2,088	17.3
Agency 2	3	Co-located	310	4,494	38
Agency 3	2	Co-located	217	2,227	21
Agency 4	10	Fully integrated	350	3,322	36
Agency 5	4	Fully integrated	100	714	7
Agency 6	5	Fully integrated	155	2,401	15.8

Data Collection

Site visits were conducted with each agency, generally at their executive/administrative location. Site visits involved two research staff and 2-7 agency executive level staff (e.g. CEO, CMO, COO, CIO). The site visit and semi-structured interview followed a protocol, which contained narrative for the interviewer to follow

and a series of topic areas for questions and discussion during the interview portion. Two researchers participated in the site visits, one of whom was responsible for leading the interviews while the other completed field notes.

The site visit interviews were audio-recorded and transcribed; detailed field notes were taken; and official agency documents (i.e. organizational charts, annual reports, brochures, etc.) were collected with data later compiled into an Excel database for analysis. Any information that was still missing was included in a follow-up email or phone call requesting the additional information.

Measures

The key constructs in this study included implementation challenges and model of care coordination which were each measured through questions asked in the semi-structured interview. As noted previously, three of the agencies had implemented a co-located model of care coordination, while three of the agencies had implemented a fully integrated model of care coordination. The implementation challenge topics that we examined aligned with Shortell's (2004) heuristic, focusing on: Larger System & Environment (regulatory environment and licensing, payors, reimbursement, relationship with other agencies); Organization (agency overview and history, information technology and Electronic Health Record (EHR), coordination model); Team/Group (workforce skills, competencies, and capacity, technical assistance needs), and Individual Staff (workforce skills, competencies, and capacity, technical assistance needs). These categories captured factual data such as number of employees and name of the electronic health record system the agency uses, as well as subjective data such as perceived challenges the agencies faced in each issue category.

Data Analysis

The qualitative analysis of *implementation challenges* used an iterative approach that allowed coding to be guided by the current literature, theory, and themes that naturally emerged from the data (Tracy, 2013). The author used Nvivo version 11, for data coding, using an etic approach (Tracy, 2013), in that codes were developed based on concepts already found in implementation theory. Additional codes were included that emerged from the data and were not accounted for by extant theory. The model of coordination variable provided a way to compare implementation challenges based on the type of care coordination model. After a first phase of coding broad themes was completed, data reduction proceeded by clustering or grouping codes if they were similar (Miles & Huberman, 1994). Data was further reduced from the initial themes into more specific themes as outlined in Table 2, which were used for reporting results on similarities and differences in implementation challenges by model of coordination. Implementation challenges were grouped into the four levels of change: system/environment, organization, group/team, and individual (Shortell, 2004).

Table 2		
<i>Implementation Challenges</i>		
Implementation Level	Theme	Definition
System/Environment	Financial Mechanisms	Challenges for behavioral health providers related to inadequate billing and reimbursement structures.
System/Environment	Regulation	Challenges resulting from mandates from various regulatory bodies (local, state, or federal).
Organization	Electronic Health Records	Difficulty using an EHR system or establishing an integrated system that allows for easily accessible patient information.

Organization	Role Clarification	Challenges related to agency and staff understanding of roles and expectations in the care coordination process, and understanding of responsibility over complex patients.
Group/team	Information Sharing	Difficulties in obtaining patient records and/or collaboration between medical and behavioral health providers.
Individual	Medical Provider Stigma	Difficulties related to medical providers that have stigmatizing beliefs towards individuals with behavioral health conditions and/or being inexperienced in working with individuals with behavioral health conditions.
Individual	Staff Training on Coordinated Care	Challenges stemming from staff needing additional training to improve their understanding of coordinated care and the continuum of care process.

Results

System/Environment Challenges

Financial Mechanisms. A recurring theme heard from participants at five of the six agencies (2 co-located and 3 fully integrated) had to do with the financial challenges and obstacles to transitioning to a coordinated care model of service, or the challenges to delivering coordinated care. These challenges included not being compensated or able to bill for services or activities related to the coordination process. There was discussion of the behind the scenes work including paperwork and communication between providers that is necessary for effective coordination that is not billable. Agencies experienced an inability to bill for multiple services on the same day, and being unable to bill for all services that they provided (in one case medical staff being unable to bill for behavioral health services rendered). Funding was mentioned as a challenge because some agencies wanted to expand and grow their services and expand to other communities but felt they did not have enough funding to grow. One fully integrated agency wanted to start

offering tele-medicine services to reach more rural populations and implement a better EHR system, but did not have the funds to do so. A co-located agency desired to become independent and move toward becoming fully integrated, but did not have the funds they needed to pay for their own medical staff. Participants from two co-located agencies expressed observations on the impact that moving to an integrated care delivery was having upon agency bottom lines. A participant from one of those agencies noted: “...what I hear from my integrated care friends, is that the reimbursement rates stink for primary care service...” and a participant from the other co-located agency explained that, “... integrated/ primary care operations is enormously expensive. Almost everyone that has tried it in (this area) has financially lost their shirt.”

For these two agencies, the loss of revenue that other agencies had experienced may have strengthened their resolve to implement a less risky alternative. Among those agencies implementing fully integrated models of coordinated care, the loss in revenue was observed to be abating over time, and reflective of an organizational learning curve: “We're losing money, we'll continue to do that, but...the delta is shrinking, and I would expect that to continue to shrink, but the learning curve in this kind of work is extraordinary...”

For some, their funding agency's prospective payment methodology created challenges to their movement toward coordinated care models and their agency's opportunity to expand into new markets:

“...there are limitations for growth, imposed by actually having a prospective payment system. We're so busy chasing down value of service and trying to draw down those dollars, it makes it very difficult to develop other sources of revenue

and business lines.”

These agencies expressed worry about their agency’s sustainability if and when the funding models should shift:

“...prospective payment is wonderful now, I mean we can squeak by on a week by week basis, but if there is a quick transition to fee for service without a war chest, how do we survive?”

Some agencies expressed that the encounter unit with patients was too short and did not allow for providing quality care, especially to the more complex patient:

“...the 15-minute visit model in primary care, just doesn't match up for the most part for somebody with a serious mental illness...the funding stream...that we operate on is designed from the funding stream for behavioral health. The funding stream for primary care is a very different piece.”

“...there's times where we have clients that are back in constantly for non-healing wounds, just things that we spend a lot of time, and is just not compensated.”

For others, the encounter value and the differential rates that these behavioral health agencies received in comparison to an FQHC delivering the same service was identified as a major barrier to implementing coordinated care. One fully integrated agency explained this problem:

“...the rates don't cover our true cost. And because of that you either have to see a whole lot more clients than you are comfortable seeing, and reduce that quality if you will, or go broke...so it’s got us backed up into a pretty good corner where we're seeing a few more patients than we would like to...”

“...community health centers are being reimbursed somewhere between \$185 to \$240 dollars for that service, we're getting \$53...It's not a level playing field, it's just not right.

A participant at a fully integrated agency expressed frustration with his agency's ability to attract and retain medical providers due to the low reimbursement rates they could collect:

“I've lost two primary care persons ...they are not reimbursing them enough and so we have people slowly pulling out to even be available to help coordinate or provide care, and it's like, ‘we really like you.... but I'm sorry, unless you want to pay me cash’...” that keeps happening to our medical providers, and then they're going to go: ‘why even go into community care?’”

A participant at an agency that had been an early adopter of integrated care, shared a sense of disillusionment in his aggressive move into integrated health care delivery and what he viewed as broken promises or unfulfilled assurances of financial reward for innovating:

“...there was a pretty considerable belief on my part whether anyone told me or not, was that there would be as we moved into a new world order some premium pay, ...for providing integrated care services, and/or some other way by which we would be able to be better reimbursed to manage something that's very difficult to sustain financially. So, that has not come into pass...”

“...we've been taken down a path...with an expectation that once we've moved into the integrated care.... arena, that persons with SMI would be directed

to our physicians at the very least, and then that when that service was delivered that there would be an enhanced rate to that service.”

Regulation. A commonly cited implementation challenge, identified by five out of the six agencies, was the plethora of regulations and reporting requirements that these agencies faced from a myriad of local, state, and Federal agencies requiring excessive paperwork, tracking, and frequently conflicting or contradictory reporting requirements. Agencies expressed frustration with the top down approach taken by regulatory bodies, hindering their clinical judgment and limiting growth and creativity. One participant at a fully integrated agency discussed their part of their regulatory challenge as: “a combined issue that drowns our staff at times with paper, with process versus really taking care of people.” A participant at a different fully integrated agency explained:

“...they don’t know what the hell they are doing...we have people running around saying deliver more vocational rehab services, and do this, and people running around over here and...you've got to be doing this...we worked this hard to get this far, and so we have some apprehension as to now is there going to be regulations imposed that are going to somehow undo what we have done, or do things in a different way when we've worked hard to get it working in a way that’s works.”

A participant from a co-located agency expressed frustration stemming from feeling over-regulated:

“Agencies like ours are overregulated, the regulations are over muscled, they are over obsessive, they really prevent us from doing the kind of care we could do if we didn't have to do so much in regards to regulation. That’s a very gentle

statement.”

Another participant at the same co-located agency explained:

“What we've found on top of the state's peculiar brand of regulation, is that the Joint Commission has become more specific in how they expect us to deliver care, not just the outcome and processes we use to provide services, but they want to tell us how to do it too. So, we've got a number of masters if you will, who want to tell us how to take care of people, it tends to crush creativity and innovation especially, and clinical judgement, other than that we're perfectly happy.”

The regulatory burden extended to the area of information technology as described by another participant at the same co-located agency:

“The ACA puts a tremendous amount of regulations upon us. So, meaningful use was just part of it that we worry about, because now we've got to track all of those. That takes a lot of additional time and effort to track all of those outcomes that they want tracked and reported. In addition, as I mentioned, we worry about how will we stay competitive with a private practice type of professional who doesn't have to do all of that.”

A participant at another co-located agency discussed their difficulties with balancing varying regulatory requirements as:

“I think it's a balance between maintaining and keeping all these agencies happy, whether it's the Joint Commission, [State Medicaid Agency], the state, and being able to sustain financial viability because regulations, rules, guidelines continue to go up...just balancing those requirements and being able to stay profitable.”

Organization Challenges

Electronic Health Records. The implementation and utilization of Electronic Health Records (EHR) was identified as a challenge by two fully integrated providers and two co-located providers. For both groups of agencies, the lack of a single EHR that provided robust documentation of both physical health and behavioral health services was a common complaint. A participant at a fully integrated agency explained part of their EHR challenge as:

“I would agree with the EMR thing, to add insult to injury with the EMR problem that we have, not only can we not find a fully integrated healthcare record that we are satisfied with, and we’ve been turned on to a couple of them, and its either a very good medical record which won’t meet state standards for behavioral health which are pretty cumbersome or vice versa.”

A participant at a co-located agency described part of their EHR challenge as:

“Well I’d have to say that [named primary care provider] and [named behavioral health provider] are not using the same EHR, is one of those things that creates a barrier to fully integrated care, and information sharing.”

Most of the individuals described the superiority of the primary care oriented EHRs, relative to the sophistication of the behavioral health oriented EHRs and the inadequacies of any one commercial product to meet the clinical and regulatory requirements of both scopes of practice. A number of participants identified the high degree of customization needed and the resulting financial and human resource costs as significant challenges to implementing EHRs. This issue is described by a participant at a fully integrated agency:

“...you have a very strong primary care medical module that is extraordinarily robust, and then the behavioral health systems, really have their own niche, and behavioral health EMR companies have their niche because they tend to be much more public funded oriented. So, they are less out of the box, more customizable, and therefore it’s very difficult as they work in one county, one state, and there’s different reporting requirements...”

Similarly, a participant at another fully integrated agency explained:

“...the primary care folks, have a wonderful medical record, they are really happy with it...we cannot stand our mental health record ... yet if we change or go to one integrated record, one we are going to go backwards on the primary care side of the record that we implemented, but in addition to that...we don’t have the 2,3,4 hundred thousand dollars readily available to buy a new record... without a doubt we are going to have such a loss of productivity, not only on the behavioral health side, which is making our profit for us, we would lose that, but on the primary care side of it too, of which we can’t afford to go backwards. And so we’re just kind of stuck, and I think the sad thing about it, is I think some of the higher ups don’t get that, that we would love to go out and buy something, but it would be nice if they cut a kind of incentive or something like that where for a one year period...you were kind of held harmless...”

Responding to the inadequacies of EHRs to robustly meet the needs of coordinated care services lead some agencies to create work arounds to facilitate communication among their providers while recognizing the evolutionary state of EHR products to support coordinated care, as expressed by a participant at a fully integrated

agency:

“So, we staff it with nurses, it’s one of our major I guess you could call it understanding, but the way we use it...we use nurses to reconcile medications and to communicate lab results, that type of thing, and then also our IT department, developed the CCD, or Continuation Care Document, that we’re just in the beginning stages of being able to transmit electronically from one system to the next. So, customizable with things as clinical as vital signs, to as therapeutic as treatment plans.”

Another participant at the same agency added:

“But a lot of folks don’t understand that, that’s surrounding a meaningful use. So, the CCD is I think an extraordinarily helpful method. It’s not interoperability. The fact that there’s this excitement over interoperability is great, it’s just not worth the energy at this point in time as organizations try to synthesize what they already do well from a managing and information issue. I know that’s saying poorly but hopefully there’s an awareness around that.”

Role clarification. Clarifying provider roles and responsibilities was identified as an implementation challenge by one fully integrated provider and two co-located providers. These providers described challenges related to roles and responsibilities in the coordination process at the individual staff level and between agencies. Some providers felt that the different understandings may be contributing to difficulties in coordination. A participant at one co-located agency noted that:

“there’s a very high expectation on the behavioral health system, to share information with primary care providers, and the perception is, and I think some

of this is contractual, at the [state Medicaid agency] level and the health plans, that the expectation for PCPs is not commensurate with what it is in our system.”

“I think there’s a sense that the providers on the primary care side have different levels of expectations around integration, and I think our system is really recognizing that we need to be more integrated, I don’t know that every primary care provider in our community has the same perspective, so I would say that’s a barrier.”

A participant at another co-located agency characterized their relationship with the FQHC partner as:

“...a very touchy kind of a relationship and one that we have to be kind of careful of, but it does not feel to me as though it’s a true partnership. It’s a one-way requirement, and the burden is all on us.”

A participant at another co-located agency mentioned:

“all of this is demanded of us by the nature of the integrated health mandate, that the state has. There's no mandate from the primary care side. They don’t pay us for any rent. They don’t pay for any equipment, they don’t have to be invested, whereas we regulatorily have to be invested...we are coming from two different places, two different motivational factors...not enough common vision, not enough common mission.”

Another challenge related to role clarification was determining responsibility over patients with complex health situations. This was unique to only co-located agencies, with two of the three co-located agencies describing challenges caring for patients with serious medical conditions who were sent to them because medical facilities did not want

to treat them due to their behavioral health condition. Cases were described that involved hospitals having sent patients with an untreated medical condition to a behavioral health provider to address a behavioral health condition. However, the behavioral health agency often has not had the capacity to treat the medical problem, which needs to be treated before they can address the behavioral health issue. Discussions around these types of cases seemed to lead to a question regarding what can be done with this gap population. Who is responsible for them? A participant at one of the co-located agencies explained:

“I think in regards to integrated care, there have been in the last year or two, some concerns that we've had, of cases that have come our way, where there legitimately is a behavioral health issue, but a much more primary physical healthcare issue, and one that is life threatening that has made us quite nervous. I think at other times that we've made inquiries at [State Medicaid Agency], in terms of getting information regarding their vision of integrated care and it's come up around some of those cases, they haven't provided a definition of what they expect for integrated care, and at times that leaves us in a very awkward position.”

“Another illustration as to the lack of clarity from [State Medicaid Agency], as to what they expect of us, there's the extreme of expecting us to take someone into our acute psychiatric unit who has some sort of end of life, chronic disease because the local hospital didn't want them anymore. And the opposite extreme, which is [State Medicaid Agency] expecting us to coordinate care for anyone who has an open episode of care...”

Group/Team Challenges

Information sharing. Five of the six agencies described challenges related to sharing of patient information, two fully integrated and all three co-located. Information sharing challenges were discussed in terms of both behavioral health and primary care providers sharing critical patient information such as services provided and medication changes. A participant at a co-located agency discussed the problems with information sharing because of regulations:

“[State Medicaid Agency] expects our beds to be at the beck and call to every Responsible Agency in the region. Notwithstanding whether or not we've received a referral packet. So, there've been times that we've had difficulties because an agency doesn't have their stuff together, doesn't have a referral packet put together, or for whatever reason doesn't send it to us. And [State Medicaid Agency] on the phone with us saying why aren't you admitting this patient, and we don't really have enough information to admit the patient, and what [State Medicaid Agency] wants us to do is just...Joe Blow down in [town] says admit--we should just do that. Real problem.”

A participant at another co-located agency described their biggest challenge as: “The sharing. Information from the medical side and the behavioral side, so that when our doc sees a client or member, we know what kind of services they're getting on the medical side, and likewise when the medical doc is seeing a patient, are they getting the full picture of behavioral health services. I think that's probably the biggest challenge.”

Difficulties that resulted from information sharing challenges were described by a participant at a fully integrated agency:

“Access to current records, whether it be in the same EHR, or just access. It’s very critical when just working with patients that are having doses adjusted by the psychiatrist, and the psychiatrist is out or not in office, and especially with the tele med, we are the backup or the bridge for that psychiatrist. If we don’t have access to those records, that makes it very difficult to anticipate for the patient's needs.”

Individual Challenges

Medical provider stigma. Challenges related to medical provider attitudes or stigma towards people with behavioral health conditions came up in four of the six agencies (two fully integrated and two co-located). Respondents noted that medical providers did not understand behavioral health issues, didn’t know how to effectively treat these patients, and often feared them or viewed them as nuisances. One participant at a fully integrated agency noted: “...there is a lot of primary care providers in our area because they don’t want to take those clients on, because they can be difficult to take care of from that perspective...”

A participant at a co-located agency described the problem as: “...they view them as nuisances, and I've had ER doctors yelling at me saying they are behavioral health they don’t belong here. Really?”

A participant at another co-located agency explained: “...a lot of the medical providers don’t understand behavioral health or serious mental illness, they don’t. We fear it, so it's hard to provide care for those that you are afraid of.”

Other respondents noted that the medical providers exhibited patterns of interacting with patients that were stigmatizing or engaging in diagnostic overshadowing, wherein the behavioral health diagnosis overshadows attending to other presenting, at

times serious, health conditions. This was described by a participant at a co-located agency:

“I think there's a huge stigma on drug seeking. If you're diabetic and you need a refill on your insulin are you drug seeking? Yes. Is there a negative connotation with that? No. But if you're a behavioral health client and you need a refill, and you are 2 days too early you are a drug seeker. I'm sorry...”

“...when people present to ERs because they are medically unstable, that if they've got a behavioral health condition, a lot of times their stuff gets written off as behavioral...and it's like why aren't you stabilizing their diabetes? I mean we've had people transferred that have blood sugars of 700, so there's a huge stigma still in the medical system around people with behavioral health...medical director had to explain to an ER doctor, I need you to bring their blood sugar down, they are at risk of coma... we need you to stabilize that before we can accept them. I think that's deplorable.”

Staff training on coordinated care. Only the three co-located agencies described challenges related to their staff's understanding of coordinated care. Agencies expressed a need for training of medical and behavioral health staff on understanding the coordinated care process, the principles behind the process, application and follow through, and understanding each role in the process. A participant from a co-located agency talked about wanting to “get all our staff on board with understanding what integrated means, and that includes our medical officers.” A second participant from the same agency added, “And the education of why it's important. That would be a good, even better annual conference that we can do integrated training or something.”

A participant from another co-located agency described the agency's knowledge of coordination as: "We have a working knowledge, I don't know how good that working knowledge is...I think they understand the principles of integrated care, I don't know if they understand the nuances that clearly..."

At that same agency, another participant responded on the issue of their staff's knowledge of coordinated care concepts: "Individually it exists, but the actual application and follow through of the principles, could be some work."

A participant at another co-located agency described the training needs within their agency: "I don't think our nursing staff has a good grasp of continuation of care outside of the Psychiatric Acute Care unit, so it's kind of like they are in this small bubble, and once the patient leaves they don't really give the patient any thought regarding continuity of care, and I know the social workers and the medical staff are involved with organizing their care outside, but I think the nursing staff should be more involved in some ways as well because they do continue on an out-patient basis."

Discussion

This study examined challenges experienced by behavioral health agencies implementing two models of coordinated care. Results from this study indicated that many of the challenges examined were seen in most agencies regardless of model of coordination. However, there were some issues that were unique to co-located agencies. Some studies have found that developing standard protocols and defining roles are factors in successfully implemented a care coordination model (Butler et al., 2008; Gerolamo et al., 2014; Kodner & Spreeuwenberg, 2002). The findings from this study support the need for standardized procedures, referral processes, and role clarification. Most

agencies experienced difficulties as a result of lacking standard procedures within and between agencies as well as poorly defined roles for staff and agencies. This resulted in confusion and misunderstandings in how to care for patients and who has responsibility.

Although none of the agencies in this study reported any difficulty with their behavioral health staff dealing with physical health issues, five of the six agencies reported medical providers' lack of understanding of behavioral health and discomfort with behavioral health conditions as challenges to providing adequate care coordination. The literature has identified the need for both behavioral health and medical providers to be properly trained and be comfortable addressing both physical health and behavioral health conditions (Butler et al, 2008; Croghan & Brown, 2010; Gerolamo et al., 2014; Green & Cifuentes, 2015; Mauer & Druss, 2010). The biggest similarity with these findings and previous research on coordinated care is related to financial challenges (Butler et al., 2008; Gerolamo et al., 2014; Croghan & Brown, 2010; Mauer & Druss, 2010). Five of the six agencies reported inadequate reimbursement and billing structures as their biggest challenge to sustaining coordinated care.

Another important issue that emerged from the data is the importance of relationships between medical and behavioral health providers (Gerolamo et al., 2014; Kodner & Spreeuwenberg, 2002). This was especially evident in terms of relationships with local hospitals. Most of the agencies talked about their interactions with local hospitals in terms of shared patients and it became clear that for coordinated care to work, hospitals and behavioral health agencies need to be on the same page and have a strong working relationship. If these relationships cannot be repaired, it is the high need patients who suffer the consequences, the patients who arrive at a hospital with a medical need

but get sent to a behavioral health facility because of a behavioral health condition.

These patients are at risk of receiving inadequate care because behavioral health providers often do not have the tools to treat serious medical issues (Croghan & Brown, 2010).

One limitation of this study is the possibility of bias in responses gathered from site visit interviews. Agency representatives may not have been completely open or honest in order to present their agency in a better light. Similarly, the behavior and responses of the agency representatives could have been influenced by the rapport or lack of rapport with the researchers during the visit (LeCompte & Goetz, 1982). Although staff that conducted the visit and interview could offer insight into their perceptions about the rapport with agency representatives, it is not possible to know if the rapport influenced the data.

One of the strengths of this study is the ability to build on existing theory, which is relevant here due to inconsistent definitions of coordination or lack of understanding of what components of coordination are necessary to improve outcomes (Mauer & Druss, 2010; Woltmann et al., 2012). The use of the detailed protocol for the site visit interviews with agency executives is also a strength because it increases the likelihood that other researchers could come close to replicating the methods and findings in similar environments and improves reliability (LeCompte & Goetz, 1982). Furthermore, the methods used in this study provide a richer description of the implementation issues than what can be obtained in quantitative studies.

Although this study found few differences in implementation challenges by model of coordination, it became clear that the most significant issues of implementing

coordinated care in a behavioral health setting have less to do with the model and more to do with system wide problems. The first of those difficulties was reimbursement rates, which most sites suggested were unsustainable and needed to improve if coordinated care is to succeed. The second is information sharing, which most sites indicated was essential for true coordinated care. If both behavioral health and medical providers cannot easily share critical information about shared patients that will limit their ability to effectively coordinate care. The third most common challenge was regulation, such as excessive paperwork, tracking and reporting requirement taking time away from patient care and being quite costly. Additionally, agencies seemed to express some resentment toward regulating bodies due to their tendency to set rules in a top down manner while also providing little guidance which caused frustration and confusion for agencies. And finally, training needs were also an issue, specifically for co-located agencies that felt their staff needed training to understand the principles of coordinated care and associated processes and roles. Other training needs included cross training for both medical and behavioral health staff on understanding physical and behavioral health, as well as training specific to medical providers in understanding behavioral health and SMI issues to address their aversion to treating patients with behavioral health issues.

Based on these findings, it seems clear that for behavioral health agencies to continue working towards the implementation of coordinated care and sustain such practices, changes must be made at the system or policy level. The findings in this paper provide a starting point for where changes can be made to improve implementation. However, it is also important to take into account that implementation takes time and agencies may overcome these difficulties in the coming years. Future research should

continue to examine progress of agencies in implementing coordinated care to ensure it is having the best possible impact on patients.

Ethics Approval

Ethical approval for this project was given by the Arizona State University Institutional Review Board [STUDY00003014]

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CHAPTER 4

STAFF AND ORGANIZATIONAL CAPACITY IN IMPLEMENTATION OF COORDINATED CARE: AN EXAMINATION OF 10 BEHAVIORAL HEALTH AGENCIES IN RURAL COMMUNITIES

Nicole K. Janich, MSW

Abstract

Providing primary care services in behavioral health settings is becoming more common and necessary given the needs of individuals with Serious Mental Illness (SMI). This study developed a survey to assess agency and staff capacity for coordinated care. Logistic regressions compared differences in 20 dimensions of coordinated care specifically comparing capacity based on professional role (behavioral health and medical), model of coordination (co-located and fully integrated), and time of model adoption (early and late adopters). Findings indicated all three were significant predictors of capacity in multiple dimensions which suggested the need for training and planning around inter-professional and inter-agency coordination.

Introduction

The evidence base supporting the coordination between behavioral health and primary care services has continued to grow (Croft & Parish, 2013; Gerrity et al., 2014; Keeley et al., 2014; Mauer & Druss, 2010; Phelan et al., 2001; Woltmann et al., 2012). There are a variety of models for coordinated care that can differ in their methods and strategies linking service systems (Butler et al., 2008). The commonality among the models is improving linkage between primary care and behavioral health. In this paper, the term coordinated care generally describes a linkage between behavioral health and physical health providers to address concomitantly both physical and mental health needs. Specifically, the linkage involves some degree of communication between providers regarding shared patients and collaboration in terms of treatment planning and care of patients (Butler et al., 2008; Mauer & Druss, 2010).

The current understanding and clarity related to the process by which behavioral health agencies adopt and implement models of coordinated care is limited (Butler et al., 2008; Gerrity et al., 2014; Woltmann et al., 2012). Given the policy changes pushing these agencies to coordinate behavioral health and primary care services, it is important to understand how this change is occurring and barriers or challenges to implementation. Both medical and behavioral health providers will need to undergo significant changes in their organizational culture, structure, and training in order for coordinated care to be successful (Croghan & Brown, 2010; Gerrity et al., 2014; Green & Cifuentes, 2015; Mechanic, 2014).

Previous studies have demonstrated issues of staff and organizational capacity that arise when implementing models of coordinated care. Capacity issues identified in

previous research included staff training needs, development of protocols to conform to new models of care and clarify roles, changes in organizational culture, adopting and improving technology and information sharing systems, and funding mechanisms (Davis et al., 2013; Gerolamo et al., 2014; Kodner & Spreeuwenberg, 2002; Mechanic, 2014; Scharf et al., 2013). The ability to assess and address individual provider and organizational capacity issues could determine whether agencies are successful and able to sustain implementation efforts.

The implementation of coordinated care models can be informed by Rogers' seminal work on innovation diffusion and implementation theory. Rogers' (1983) identified four key elements in the process of diffusion: the innovation itself; the communication channels or methods used to diffuse the innovation, the lag between the diffusion and the adoption; and, the social system within which potential adoptees exist. Rogers' now famous S curve of adoption and the identification of early adopters and laggards are two of the more profound concepts of Rogers' theory of innovation diffusion. Implementation theory describes a more purposeful and directed approach to facilitating the adoption and implementation of innovations (Fixsen et al., 2005; Fixsen et al., 2009; Proctor et al., 2009; Proctor et al., 2011). Collectively, the theories of diffusion and implementation provide a conceptual framework from which the adoption and implementation of various models of care coordination can be studied.

This study examines variations in care coordination implementation capacity within 10 rural and frontier-based agencies implementing fully integrated and co-located models of care coordination. Drawing upon previous efforts to study agency care coordination capacity and informed by the constructs of implementation and diffusion

previously described, a forced choice staff survey was designed and disseminated to more than 900 personnel. The survey data provide insight into the ubiquitous and distinct challenges that health care agencies face as they implement different approaches to care coordination and provide actionable information regarding the staff and organizational capacity and needs associated within implementing innovative models of care coordination.

Methods

Sampling

Staff (including medical and behavioral health providers) affiliated with 10 independent behavioral health agencies were surveyed in this study. The 10 agencies were designated behavioral health agencies within a Medicaid managed care network. The managed care network funding agency had recently implemented a contract amendment requiring coordinated health care delivery for patients with serious mental illness and the investigators were engaged to assess agency capacity and need. Each of the 10 agencies served a distinct community within a large, rural and frontier region of the state. Each agency had implemented either a fully integrated model or a co-located model as an approach to providing coordinated care for their patients with serious mental illness. Further, each agency had initiated their coordinated care model at varying points in time, allowing for designation as early and late adopters. Co-located models of care coordination involved partnerships with a Federally Qualified Health Center (FQHC) that provided physician and nursing staff within the behavioral health clinic on an itinerant, fixed schedule basis. Fully integrated models of care coordination involved behavioral

health agencies that hired physician and nursing staff directly to provide physical health care services within the behavioral health clinic.

Data Collection

An online, anonymous staff survey was administered to assess individual staff and organizational capacity to provide coordinated care services. The survey was administered over three-months and involved a series of survey prompts that were distributed to staff by their agencies' CEO or other senior administrator.

A total of 996 staff received an email and two additional follow-up emails to participate in the survey; 446 completed the survey resulting in a 44.8% response rate. Respondents identified their role in their place of employment which were later grouped into four professional categories: medical, behavioral health (BH), support services, and administrative. Only respondents categorized as behavioral health or medical professionals were included in data analysis because the intention of this study was to focus on staff who directly provide coordinated care services. After removing respondents who were not in those roles, there were a total of 294 respondents included in the data for analysis. Table 3 provides details about each agency including the breakdown of behavioral health and medical survey respondents. For the 294 respondents included in this study, 67% ($n = 197$) of the responses came from agencies categorized as co-located and 33% ($n = 97$) came from fully integrated agencies. Among agencies categorized as early and late adopters, 40.8% ($n = 120$) of responses came from early sites, and 59.2% ($n = 174$) came from late sites.

Agency	# Facilities	Model of Coordination	Model Adoption Time	BH Professional (n=244)	Medical Professional (n=50)
Agency 1	2	Fully Integrated	Early (2011)	8	3
Agency 2	5	Co-located	Late (2013)	29	5
Agency 3	4	Fully Integrated	Early (2011)	16	2
Agency 4	2	Co-located	Late (2013)	10	1
Agency 5	3	Co-located	Late (2014)	83	6
Agency 6	7	Fully Integrated	Late (2015)	22	5
Agency 7	2	Co-located	Early (2010)	44	14
Agency 8	5	Fully Integrated	Early (2009)	26	7
Agency 9	1	Co-located	Late (2015)	5	0
Agency 10	10	Fully Integrated	Late (2012)	1	7

The majority of the respondents ($n=244$, 83%) identified their role as a behavioral health professional (e.g. therapist or counselor, case manager, peer support) while 50 (17.0%) identified as medical professionals (e.g. nurses or physicians). Twenty-two ($n=66$) percent of respondents were male, 77% were female ($n=225$), and about 1% were transgender ($n=3$). Most respondents identified their race as White ($n=251$), 5.1% identified as mixed race, 4.4 percent selected Other, 3.7% identified as American Indian/Alaska Native and less than 1% identified as each of the following races: Asian ($n=1$), Native Hawaiian/Other Pacific Islander ($n=1$), and Black or African American ($n=2$). Almost 10% identified as Hispanic or Latino ($n=27$). In terms of education level, 7.5% only had a high school diploma or equivalent ($n=22$), 20.1% had some college but no degree ($n=59$), 12.9% had an Associate's degree ($n=38$), 25.2% had a bachelor's degree ($n=74$), 26.2% had a master's degree ($n=77$), 4.8% had a Doctoral degree or

equivalent ($n=14$), and 3.4% selected other. Respondents reported being in their current role a median of two years ($SD=3.9$) and with their current employer for two years ($SD=4.3$).

Instrument

The survey instrument consisted of 102 items, distributed into 11 sections to assess the respondent's perceptions of their self-knowledge and efficacy, and that of their agency in providing coordinated care. Table 4 summarizes the 11 sections and the number of items in each section. A 5-point Likert scaled response set was used (1=strongly disagree and 5=strongly disagree).

Table 4			
<i>Survey Sections & Number of Items</i>			
Domain	# of items	Domain	# of items
Screening & Assessment	11	Care Coordination	8
Client Engagement & Early Intervention	9	Patient Access to Care	8
Integrated Health Information/technology	10	Pharmacology/Medication Management	8
Interdisciplinary Service Delivery	11	Continuity of Care	7
Treatment & Care Planning	10	Agency Culture	15
Care Management	5		

After the data were collected, an Exploratory Factor Analysis (EFA) revealed 24 dimensions (dimensions are groups of items with acceptable reliability and correlations based on the EFA) that were grouped into four broader domains: Personal Capacity (7 dimensions), Organizational Capacity (13 dimensions), Training Needs (4 dimensions), and Professional Development (1 dimension). Twenty-seven (27) items were dropped from analysis because they did not load well within any domain. For the purposes of this study, only the personal and organizational domains were included in analysis.

Personal Capacity and Organization Capacity items captured similar constructs but were worded in a way that focused on either an individual's capacity or the organization's. For example, Personal Capacity included items such as "I am knowledgeable about my role and responsibilities as part of an interdisciplinary team" or "I am proficient in screening for chronic health conditions". Organizational Capacity included items such as "My agency has written policies and procedures that promote appropriate and routine sharing of necessary information between providers with shared patients." or "Overall, our agency does a good job in coordinating the care of our patients".

Data Analysis

Assumptions for linear regression were not met for any of the dimensions in each domain originally. Therefore scores for each dimension were converted to a binary outcome variable, which meant scores were grouped into either high or low capacity for each of the 20 dimensions in the two domains. Each of the 20 logistic regression models included professional role (behavioral health or medical professional), model adoption time (early or late adopter), and model of coordination (fully integrated or co-located) as predictor variables. Professional role was included in the model because previous work indicated that responses were impacted based on whether an individual identified as a behavioral health or medical professional (Janich, Rivera, & Shafer, 2016).

Results

Staff and Organizational Capacity by Model of Coordination

Personal capacity dimensions. Table 5 provides the odds ratios for each of the seven (7) personal capacity dimensions and the influence of provider role (behavioral

health v. physical health); model of coordination (co-located v. integrated), and time of adoption (early v. late). As these data reveal, behavioral health providers were statistically significantly more likely to report high levels of personal capacity for two of the dimensions (early intervention and treatment planning) and statistically significantly more likely to report low levels of personal capacity for two additional dimensions (pharmacotherapy and chronic disease screening). The influence of the type of coordination model that respondents' agencies had adopted failed to yield any statistically significant results. Respondents from agencies that had adopted a coordinated care model later were less likely to express confidence in their personal capacity in the areas of treatment planning and inter-agency communications, at levels that were statistically significant. No other statistically significant findings were found influencing the personal capacity of respondents.

Table 5			
<i>Results of Logistic Regressions for Personal Capacity Dimensions</i>			
Dimension	OR (95% Confidence Interval)		
	Behavioral Health	Co-located	Late Adopter
Integrated Care Readiness (n=235)	0.662 (0.271, 1.616)	1.636 (0.813, 3.292)	0.730 (0.365, 1.459)
Early Intervention Proficiency (n=242)	2.403 (1.163, 4.964) **	0.732 (0.363, 1.478)	1.842 (0.953, 3.561)
Behavioral Health Screening Proficiency (n=238)	0.975 (0.500, 1.899)	1.197 (0.671, 2.133)	1.159 (0.669, 2.008)
Treatment Planning Proficiency (n=234)	3.821 (1.837, 7.948)***	1.671 (0.896, 3.115)	0.464 (0.254, 0.848)**
Pharmacotherapy Knowledge (n=238)	0.153 (0.066, 0.355)****	1.402 (0.746, 2.635)	1.508 (0.838, 2.715)
Inter-Agency Communications (n=237)	1.211 (0.593, 2.474)	1.597 (0.852, 2.994)	0.459 (0.247, 0.853)**

Chronic Health Screening Proficiency (n=236)	0.210 (0.102, 0.432)****	1.286 (0.620, 2.666)	1.099 (0.547, 2.211)
** p<0.05 ***p<0.01 ****p<0.0001			

Organizational capacity dimensions. Table 6 provides the odds ratios for each of the 13 organizational capacity dimensions and the influence of provider role (behavioral health v. physical health), model of coordination (co-located v. integrated), and time of adoption (early v. late) upon respondents’ perceptions of their agencies organizational capacity to provide coordinated care. As shown in Table 4, thirteen logistic regressions were completed to model the probability of having high or low capacity in each of the organizational capacity dimensions. Similar to results in the personal capacity dimensions, respondent’s professional role had a statistically significant impact in some dimensions, including EHR documentation utility ($p<.01$), physician-provider communication ($p<.05$), and inter-agency coordination of care protocols ($p<.05$). Model of coordination was statistically significant in predicting high capacity in the dimensions of patient access to care ($p<.01$), inter-agency network participation ($p<.05$), inter-agency coordination of care protocols ($p<.05$), interdisciplinary role clarity ($p<.05$), and interdisciplinary team cohesion ($p<.05$). Model adoption time was also statistically significant in the dimension of interdisciplinary role clarity ($p<.05$).

Table 6			
<i>Results of Logistic Regressions for Organizational Capacity Dimensions</i>			
Domain	OR (95% Confidence Interval)		
	Behavioral Health	Co-located	Late Adopter
EHR Integration Utility (n=234)	1.733 (0.841, 3.574)	0.891 (0.489, 1.624)	1.585 (0.894, 2.810)
EHR Real Time (n=246)	0.949 (0.481, 1.872)	1.597 (0.888, 2.875)	1.296 (0.736, 2.281)

EHR Documentation Utility (<i>n</i> =223)	3.238 (1.507, 6.955)***	0.968 (0.524, 1.788)	1.423 (0.791, 2.557)
Treatment Planning Proficiency (<i>n</i> =229)	1.060 (0.526, 2.140)	1.135 (0.600, 2.147)	0.764 (0.415, 1.406)
Early Intervention Proficiency (<i>n</i> =238)	1.137 (0.586, 2.207)	1.266 (0.699, 2.293)	0.792 (0.446, 1.406)
Patient Access to Care (<i>n</i> =246)	1.588 (0.816, 3.089)	2.098 (1.175, 3.747)***	0.652 (0.370, 1.147)
Inter-Agency Communications (<i>n</i> =294)	0.924 (0.499, 1.713)	1.179 (0.701, 1.982)	0.998 (0.609, 1.636)
Physician-Provider Communications (<i>n</i> =230)	0.478 (0.240, 0.952)**	0.824 (0.455, 1.492)	0.970 (0.551, 1.707)
Inter-Agency Network Participation (<i>n</i> =235)	0.665 (0.324, 1.362)	0.493 (0.265, 0.917)**	1.087 (0.590, 2.002)
Inter-Agency Coordination of Care Protocols (<i>n</i> =237)	0.470 (0.230, 0.963)**	0.484 (0.253, 0.925)**	1.093 (0.574, 2.081)
Interdisciplinary Role Clarity (<i>n</i> =237)	0.736 (0.374, 1.448)	0.541 (0.294, 0.994)**	1.934 (1.071, 3.493)**
Interdisciplinary Team Cohesion (<i>n</i> =237)	1.523 (0.734, 3.159)	0.507 (0.275, 0.935)**	1.449 (0.799, 2.626)
Integrated Care Readiness (<i>n</i> =238)	0.920 (0.477, 1.774)	1.336 (0.758, 2.356)	1.137 (0.663, 1.948)
** p<0.05 ***p<0.01 ****p<0.0001			

Results of logistic regressions revealed that respondents who identified themselves to be behavioral health professionals were statistically significantly more likely to evaluate their agencies' electronic health record (EHR) documentation utility favorably while also less likely to evaluate their agencies' capacity for physician-provider communication and inter-agency coordination of care protocols highly. Five statistically significant differences were found in organizational capacity based upon the model of care coordination the respondents' agencies had adopted. Respondents from agencies that had adopted co-located models of care coordination were less likely to evaluate their agencies' capacity favorably in the following domains: inter-agency network participation, interagency coordination of care protocols, interdisciplinary role clarity,

and interdisciplinary team cohesion. Respondents from co-located agencies were also found to be twice as likely to evaluate their agencies' capacity for patient access to care as high, compared to their counterparts from agencies that had adopted integrated care coordination models. Finally, the influence of adoption time upon respondents' perceptions of their agencies' capacity to deliver coordinated care services was modest, with only one statistically significant finding. Respondents from agencies that were identified as late adopters were significantly more likely to evaluate the interdisciplinary role clarity within their agencies as high.

Discussion

The purpose of this study was to evaluate the personal and organizational capacity and needs among a group of 10 rural and frontier based behavioral health agencies. An online, anonymous 102 item survey was designed, pilot tested, and disseminated to over 900 staff employed by these agencies. Exploratory factor analysis revealed 24 dimensions with acceptable reliability, these dimensions clustered in areas that reflect individual, personal capacity and agency-wide organizational capacity. A total of 446 usable surveys were returned, resulting in a response rate of 44.8%. Logistic regression analyses were conducted to evaluate the influence of three factors upon these personal capacity and organizational capacity dimensions: provider (behavioral health v. physical health) care coordination model (co-located v. integrated), and adoption time (early v. late).

Behavioral health providers expressed greater confidence in their capacity to provide early intervention and treatment planning and less confidence in the areas of pharmacotherapy and chronic disease screening, relative to their physical health care provider counterparts. The model of coordinated care implemented was not found to

affect personal capacity dimensions while respondents from late adopting agencies expressed less confidence in their capacity regarding treatment planning and inter-agency communications. In the area of organizational capacity, behavioral health respondents expressed less confidence in their agency's capacity regarding physician-patient communications and interagency care coordination protocols and greater confidence in their agency's EHR Utility capacity, relative to their physical health care provider counterparts. Respondents from agencies implementing co-located models of care coordination expressed less confidence in their organization's capacity in the areas of interdisciplinary team cohesion, interdisciplinary team role clarity, interagency care coordination protocols, and interagency network participation, relative to their counterparts from agencies implementing fully integrated care models. Interestingly, those providers from co-located agencies expressed greater confidence in their agency's capacity for patient access to care, relative to respondents in fully integrated agencies. Finally, respondents from late adopter agencies expressed greater confidence in their agency's capacity to provide clarity in interdisciplinary roles.

Findings from this study indicate that differences do exist in staff and organizational capacity based on the model of care coordination, amount of time since an agency adopted a particular model, and professional roles. These findings provide important implications for the implementation of care coordination in particular and for implementation theory in general. Before discussing these implications, however, it is important to note the various limitations to the study. Most notably, this study used a newly developed self-report survey with unknown psychometric properties. This action was taken due to the paucity of acceptable and actionable data collection alternatives

available to assess the constructs of study. As reported earlier, exploratory factor analysis demonstrated acceptable reliability and identified constructs with strong face validity. A second limitation of the study is the limited sampling window, consisting of staff from 10 agencies located in a single southwestern state. As such, the external validity of these findings is limited and dependent upon future replications with a larger and more diverse sampling of respondents and agencies. In spite of these limitations, and given the novelty of the subject of study - health care coordination - these results provide promising and provocative findings.

Evaluation of the influence that provider role had upon perceptions of personal and organizational capacity provide interesting insights regarding the relative strengths of each of these groups of healthcare providers as well as areas that may be considered targets for professional development and technical assistance capacity efforts. Areas of pharmacotherapy and screening for chronic health conditions represent relatively new areas of responsibility and practice scope for providers delivering behavioral healthcare services and as a result, the findings of this study in these areas were not surprising. These same behavioral health providers were much more confident in their personal capacity for treatment planning, due no doubt, to the significant degree of regulation and oversight the agencies for whom these staff are employed have faced in this area. More actively and effectively engaging physical health care providers in interdisciplinary treatment planning may be an important area to address as efforts toward care coordination continue. Organizational capacity of physician-provider communications and interagency care coordination also identify the need for greater efforts to address

communication and collaboration between behavioral health and physical health providers and agencies.

The model of care coordination implemented had no influence on respondent personal capacity dimensions, but significant influence in four organizational capacity dimensions all of which are concentrated in areas of inter-professional and inter-organizational communications and coordination. Respondents from agencies that had implemented integrated care models appeared in this study to express greater confidence in their agency's attendance to these issues, while respondents from co-located agencies expressed less confidence. Anecdotal evidence collected from site visits conducted with these agencies and reported elsewhere (Janich & Shafer, 2017), found a lack of formal written agreements, protocols, and directives that delineate roles, functions, and procedures within these agencies. In contrast, as an agency makes the significant investment and program redesign in adding physical health care services and staff to their agency as in those agencies implementing fully integrated care, it is more likely that clarity regarding role, responsibility, function, and process had been addressed as part of the design and implementation processes. These results suggest that agencies implementing a co-located approach to care coordination could well benefit from greater attention to the establishment of shared memorandum of understanding (MOUs) and treatment coordination protocols that provide their staff with clarity in function and facilitate communication between the clinical staff of the different agencies.

Facilitating care coordination and provider communications should be the Electronic Health Record (EHR), the digitalized, medical record that, ideally, all providers make use of to document, communicate and collaborate. In general, EHR

capacity was not found to be influenced by any of the implementation dimensions studied (provider role, integration model, implementation time), with one exception as behavioral health providers expressed greater confidence in the documentation utility of their EHR. Other research has documented the inadequacies of currently available commercial EHRs to support health care integration (Cifuentes et al., 2015; Krist et al., 2014), as most of these systems do a good job for either physical health or behavioral health, but few do a great job for both. Until such time as commercial EHR products are made available that effectively meet the unique and shared needs of physical health and behavioral health services, communication and coordination between these providers will be hampered and will continue to require costly and ineffective makeshift solutions.

Conclusions

The push toward health care coordination is a significant driver impacting healthcare delivery. This study reports on an effective instrument to assess the relative capacity of health care organizations to implement care coordination and identify areas for targeted capacity enhancement. These findings, derived from a study of 10 rural-based behavioral health agencies, identify ongoing needs in the areas of inter-professional and interagency coordination and collaboration as common and recurring areas of need, particularly among those agencies adopting a co-located model of care coordination. These results also suggest that the relative role of the health care provider affects their capacity and need, along with their perceptions of their agencies' capacity and need to implement coordinated care. The influence of adoption time, or the duration since an agency had implemented a care coordination model, appeared to exert a modest influence upon provider's perceptions of personal and organizational capacity, relative to the

influence of the provider role and the model of care coordination adopted. Findings from this study highlight the importance of agency capacity and capacity building for successful uptake of new practices.

Ethics Approval

Ethical approval for this project was given by the Arizona State University Institutional Review Board [STUDY00003014]

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CHAPTER 5

PATIENT SERVICE UTILIZATION AMONG INDIVIDUALS WITH CO- OCCURRING PHYSICAL AND BEHAVIORAL HEALTH CONDITIONS: A COMPARISON OF TWO MODELS OF CARE COORDINATION

Nicole K. Janich, MSW & Elsa Vazquez Arreola, MS

Abstract

This study examined the impact of two models of care coordination for high risk individuals with co-occurring medical and behavioral health conditions. Specifically, the models were compared in their impact on three service utilization outcomes for 2,756 patients with Serious Mental Illness (SMI): inpatient hospitalizations, emergency visits, and outpatient visits. Findings indicated that patients served at agencies with a fully integrated model of care coordination had fewer inpatient hospitalizations, emergency visits, and outpatient visits compared to patients served at agencies that had adopted a co-located model of care coordination. These findings have the potential to impact decisions regarding the effectiveness of two different models of care coordination.

Introduction

Care coordination between behavioral health and primary care providers has become a prominent topic due to health care reform in the United States and there is increasing recognition that patients experiencing behavioral health and physical health conditions can benefit from such care. Research has continued to demonstrate a need for improved care coordination for complicated patients with comorbid, or multiple chronic health conditions. Individuals experiencing serious mental illness (SMI) typically have elevated mortality rates, with the co-occurrence of physical health and behavioral health conditions being a large factor. Compared to the general population, people with SMI are likely to die up to 30 years earlier (Corrigan et al., 2014; Croft & Parish, 2013; Druss & Mauer, 2010; Druss et al., 2011; Gerrity et al., 2014; Manderscheid et al., 2008; Mechanic, 2014; Robson & Gray, 2007). Causes of earlier death in this population are primarily medical reasons such as heart disease, respiratory diseases, and some cancers (Colton & Manderscheid, 2006; Robson & Gray, 2007). Additionally, these same individuals experience higher usage of emergency services, which can have a significant impact on the health care system. However, even with the large body of literature demonstrating a need for better care, there is still little research on the impact of care coordination on individuals with co-occurring physical and behavioral health conditions.

Individuals with behavioral health conditions experience higher rates of preventable health conditions including cardiovascular and respiratory issues, diabetes, and HIV (Croft & Parish, 2013; Manderscheid et al., 2008; Razzano et al., 2015). While behavioral health disorders may not directly cause medical conditions, they can greatly influence health conditions due to lifestyle and behaviors such as substance use, lack of

physical activities, tobacco use, poor diet, poverty, and even medication used for treatment (Corrigan et al., 2014; Mechanic, 2014; Robson & Gray, 2007).

The detrimental effect that comorbid physical and behavioral health conditions have on the health and well-being of vulnerable populations is just one concern. The impact of these conditions and the often inadequate care provided to persons experiencing such conditions also have negative consequences for the health care system including higher rates of service utilization and higher rates of high costs services. Among the top 10% highest medical service users, about half of those individuals had a psychiatric diagnosis such as depression, anxiety, panic disorder, and alcohol abuse (Gatchel, 2004). Co-morbidities of physical health conditions and behavioral health conditions have continued to be associated with increased emergency department use (Croft & Parish, 2013; Gerrity et al., 2014; Pirraglia et al., 2012; Robson & Gray, 2007; Shim et al., 2014). In terms of costs, Mechanic (2014) emphasized that behavioral health disorders are expensive not only due to less productivity, but these disorders are also one of the biggest factors in Social Security Disability status. Costs of behavioral health conditions can be directly related to service use, but indirectly there are costs related to labor, income support, lower educational achievement, homelessness, and involvement in the criminal justice system (Insel, 2008). Direct costs stemming from treating individuals with both medical and behavioral health disorders can lead to medical costs that are 2-3 time higher than individuals without comorbidities (Melek et al., 2014).

Most studies examine coordination between primary care and behavioral health in a medical setting rather than in a behavioral health setting (Butler et al., 2008; Croghan & Brown, 2010; Druss et al., 2001; Druss & Mauer, 2010; Manderscheid et al., 2008), and

also do not focus on patients with more serious behavioral health conditions (Butler et al., 2008; Gilbody et al., 2006; Mauer & Druss, 2010). This study addresses the gap in knowledge about how two models of care coordination that have been implemented in community based behavioral health agencies impact service utilization for patients with serious mental illness (SMI) in a rural, frontier region of a southwestern state. The research question that guided this study is as follows:

Among community-based behavioral health agencies, what is the relationship between *model of care coordination* and *service utilization* for patients with co-occurring physical and behavioral health conditions?

Methods

A quasi-experimental design was used to examine the relationship between *model of coordination* and patient *service utilization*. Patients used in this study were receiving their behavioral health and primary care services from one of ten independent and geographically dispersed behavioral health agencies serving as their health home. Each of the ten agencies had recently (between 2009 and 2015) implemented a model of coordinated care. The outcome variable, *service utilization*, was measured through three variables from the Johns Hopkins Adjusted Clinical Groups (ACG) System maintained by the state designated managed care organization that served as the intermediary funding agency between the state Medicaid authority and the providers. The three outcome variables included in: *Inpatient hospitalizations*, *emergency visits*, and *outpatient visits*. The predictor variable, *model of coordination*, contained two categorical groups: co-located and fully integrated.

Sampling

The sample consisted of ten behavioral health agencies with a total of 2,757 patients with SMI. A variable called Resource Utilization Band (RUB) was used to identify high risk patients for inclusion in analysis. The RUB variable is generated by the Johns Hopkins ACG System and groups patients into five categories based on their diagnosis codes and expected resource use and need for care. RUB scores are created by grouping thousands of International Classification of Diseases (ICD) diagnosis codes into 32 Aggregate Diagnosis Groups (ADG). The 32 ADGs are collapsed based on expected resource use into the six groups: No or Only Invalid Diagnosis (0), Healthy Users (1), Low (2), Moderate (3), High (4), and Very High (5). For this study, patients categorized as high and very high were included so the sample was limited to individuals with more severe conditions that were expected to utilize more resources. Table 7 presents aggregate characteristics of agencies included in the study by model of coordination. The number of patients includes only those who were enrolled in services for the full 12 months (November 2015 to October 2016). The data encompassed five fully integrated agencies with a combined 1,406 patients, and five co-located agencies with 1,351 patients. Fully integrated agencies received about double the funding of co-located agencies. The mean number of chronic conditions was 6.05 ($SD = 3.21$). Average pharmacy costs were \$3,516 ($SD = 8,746$), and average total costs of all care (pharmacy plus medical) was \$9,217 ($SD = 16,552$). A total of 409 (14.83%) patients had at least one inpatient hospitalization, 1,828 (66.3%) patients had at least one emergency visit, and 2,753 (99.85%) patients had at least one outpatient visit, 49 (1.78%) patients had at least

one unplanned readmission. Additional descriptive statistics of patients are shown in

Table 8.

Table 7				
<i>Aggregate Agency Characteristics by Model of Coordination</i>				
Model of Coordination	# Agencies	# Facilities	# Patients	Avg. Funding (in millions)
Co-located	5	13	1,351	17.9
Fully Integrated	5	28	1,406	36.8
Total	10	41	2,757	

Table 8					
<i>Patient Descriptive Statistics by Model of Coordination (N = 2,757)</i>					
	Co-located (n = 1,351)		Fully Integrated (n = 1,406)		
	n	%	n	%	
Age Bands					
	18-34	174	12.88	244	17.35
	35-44	267	19.76	260	18.49
	45-54	411	30.42	410	29.16
	55-64	381	28.2	381	27.1
	≥65	118	8.73	111	7.89
Female		844	62.47	904	64.3
Psychiatric Diagnosis					
	Schizophrenia	396	29.31	430	30.58
	Bipolar Disorder	536	39.67	658	46.8
	Depression	1,040	76.98	1,081	76.88
Medical Diagnosis					
	Hypertension	742	54.92	686	48.79
	Hypothyroidism	259	19.17	306	21.76
	Ischemic Heart Disease	140	10.36	109	7.75
	Parkinson's Disease	176	13.03	208	14.79
	Seizure Disorders	696	51.52	656	46.66
	Persistent Asthma	539	39.9	518	36.84
	Chronic Obstructive Pulmonary Disease	319	23.61	304	21.62
	Disorders of Lipid Metabolism	490	36.27	510	36.27
	Human Immunodeficiency Virus	12	0.89	10	0.71
	Rheumatoid Arthritis	66	4.89	52	3.7
	Diabetes	337	24.94	304	21.62
	Congestive Heart Failure	89	6.59	87	6.19
Note: Psychiatric and medical conditions are not mutually exclusive.					

Data Collection

The patient level data from the Johns Hopkins ACG System was provided by the managed care organization which collects claims data from health plans covering all counties in the region. The Johns Hopkins ACG System calculates variables based on claims data submitted by the health plan organizations in the region. The managed care organization provided the data for this study as an Excel file in March 2017 that included patients who were in services for a full 12 months between November 2015 and October 2016.

Measures

The variable, *model of coordination*, came from site visit interviews conducted between August 2015 to October 2015 with executive level staff at each agency. Site visits, following a structured interview protocol, gathered information regarding service capacity and implementation challenges these agencies were experiencing. Based upon the results of these site visits, each agency was identified as either implementing a *fully integrated* model of care coordination or a *co-located* model of care coordination defined as follows:

- 1)Co-located: Services are provided at the same physical location but by the personnel of two different agencies. The providers of the Federally Qualified Health Center (FQHC) and the behavioral health provider work together as a team and staff their shared patient population, while maintaining separate charting and billing systems.
- 2)Fully Integrated: Services are provided at the same physical location by physical health and behavioral health providers all working for a single agency, a former

behavioral health provider. The providers work together as a team and staff their shared patient population.

Service utilization was measured using three variables from the Johns Hopkins ACG System which are listed and operationalized in Table 9. In addition to the three outcome variables that made up *service utilization*, other variables were included as covariates.

Table 9		
<i>Study Variables</i>		
Variable	Definition	Purpose
Model of Coordination	Two models: co-located and fully integrated	Predictor
Outpatient visits	Count of ambulatory and hospital outpatient visits	Outcome
Emergency visits	Count of emergency room visits that did not lead to a subsequent acute care in-patient hospitalization	Outcome
Inpatient hospitalizations	Binary variable indicating either zero or at least one acute care inpatient stay not related to child-birth or injury	Outcome
Patient Sex	Patient identification as male or female	Covariate
Chronic Conditions Count	Count of total chronic conditions associated with a patient	Covariate
Patient Age	Patient's identified age	Covariate
Schizophrenia Condition	Binary variable indicating either the condition was not present or present based on treatment, prescription, or diagnosis code indicators.	Covariate
Bipolar Disorder Condition	Binary variable indicating either the condition was not present or present based on treatment, prescription, or diagnosis code indicators.	Covariate
Depression Condition	Binary variable indicating either the condition was not present or present based on treatment, prescription, or diagnosis code indicators.	Covariate

Data Analysis

All analyses were completed using SAS version 9.4. To test the impact of models of coordination for outpatient visits and emergency visits, a Poisson Regression was

completed to examine differences in frequency of each service based on the model of coordination. A Poisson Regression was determined to be the best analytic approach for outpatient visits and emergency visits because in both variables, the occurrence of such events was rare (Cohen, Cohen, West, & Aiken, 2003). For example, in emergency visits there were a large number of zeros which caused a Poisson distribution. To test the impact of model of coordination on inpatient hospitalizations a logistic regression model was used to examine the probability of patients having at least one inpatient hospitalization. In all three regression models, the following covariates were included: sex, chronic condition count, age, and presence of schizophrenia, bipolar disorder, and depression.

Results

Specific results are reported on the regression models for each of the three outcome variables in subsequent sections. Overall, all three regression models found that model of coordination was a statistically significant predictor of service utilization variables. In comparison to fully integrated models, patients receiving services at co-located agencies had a higher probability of inpatient hospitalization, and higher frequencies of emergency visits and outpatient visits. Additionally, most of the covariates were significant predictors. Patient sex was the only variable that was not significant in any of the three regression models.

Outpatient Visits

A Poisson regression was completed to model the expected number of outpatient visits during a 12-month period. Results indicated that model of coordination of the patient's primary service provider agency, patient age, patient number of chronic

conditions, presence of bipolar disorder, depression and schizophrenia were significant in predicting the number of outpatient visits during the 12-month period. Patients treated at an agency with a co-located coordination model experienced 12.5% more outpatient visits, compared to a fully integrated coordination model ($p < .0001$). The number of outpatient visits decreased by 0.3% for every one year increase in age ($p < .05$). The frequency of outpatient visits increased by 7.5% for every unit increase in chronic condition count ($p < .0001$). The presence of schizophrenia increased outpatient visits by 33.8% ($p < .0001$). Patients with a diagnosis of depression experienced 36.8% more outpatient visits ($p < .0001$) while patients diagnosed with bipolar disorder experienced a 12.0% increase in outpatient visits ($p < .01$).

Variable	Coefficient estimate	Wald 95% Confidence Limits	
Coordination model (reference: Co-located)	0.118 ****	0.0613	0.1747
Sex (reference: Male)	0.0487	-0.012	0.1094
Age	(-0.0031)**	-0.0055	-0.0007
Chronic Condition Count	0.072 ****	0.0637	0.0803
Schizophrenia	0.2912 ****	0.2302	0.3522
Depression	0.3136 ****	0.2358	0.3913
Bipolar disorder	0.1136 ***	0.0549	0.1724
** p<0.05 ***p<0.01 ****p<0.0001			

Emergency Visits

A Poisson regression was completed to model the expected number of emergency visits during a 12-month period. Results indicated that model of coordination of the patient's primary service provider agency, patient age, patient number of chronic conditions, presence of bipolar disorder and schizophrenia were significant in predicting

the number of emergency visits during the 12-month period. Patients treated at an agency with a co-located coordination model experienced 13.6% more emergency visits, compared to patients treated in an agency with a fully integrated model of care ($p < .01$). The number of emergency visits decreased by 2.3% for every one year increase in patient age ($p < .0001$). The number of emergency visits increased by 16.0% for every unit increase in chronic condition count ($p < .0001$). Patients with a diagnosis of schizophrenia experienced 14.5% more emergency visits ($p < .01$) while patients diagnosed with bipolar disorder experienced 10% more emergency visits ($p < .05$).

Table 11			
<i>Emergency Visits During 2016</i>			
Variable	Coefficient Estimate	Wald 95% Confidence limits	
Coordination model (reference: Co-located)	0.1277***	0.0452	0.2102
Sex (reference: Male)	-0.0151	-0.105	0.0748
Age	(-0.0231) ****	-0.0266	-0.0197
Chronic Condition Count	0.1484****	0.1377	0.1591
Schizophrenia	0.1351 ***	0.0455	0.2247
Depression	0.0233	-0.0865	0.1331
Bipolar disorder	0.0923 **	0.0063	0.1782
p<0.05 *p<0.01 ****p<0.0001			

Inpatient Hospitalizations

A logistic regression was used to model the probability of patients having at least one inpatient hospitalization during the 12 months of data. Results indicated that model of coordination of the patient’s primary service provider agency, patient age, patient number of chronic conditions, presence of depression and bipolar disorder were significant in predicting the probability of patients having at least one inpatient hospitalization during the 12-month period. Patients treated at an agency with a co-

located coordination model had a 64.6% increase in the probability of having at least one inpatient hospitalization compared to patients treated in an agency with a fully integrated coordination model ($p < .0001$). The probability of having an inpatient hospitalization increased by 1.2% for every one year increase in patient age ($p < .05$). The probability of having an inpatient hospitalization increased by 28.1% for every unit increase in chronic condition count ($p < .0001$). Patients with a diagnosis of depression had a 31.1% increase in the probability of at least one inpatient hospitalization ($p < .01$) while patients diagnosed with bipolar disorder had a 24.6% decrease in the probability of having at least one inpatient hospitalization ($p < .05$).

Table 12			
<i>Inpatient Hospitalizations During 2016</i>			
Odds Ratio Estimates			
Variable	Point Estimate	95% Wald Confidence Limits	
Coordination model (reference: Co-located)	1.646****	1.312	2.064
Sex (reference: Male)	1.227	0.964	1.562
Age	1.012**	1.002	1.022
Chronic condition count	1.281****	1.237	1.327
Schizophrenia	0.916	0.712	1.179
Depression	0.689***	0.524	0.907
Bipolar disorder	0.754**	0.596	0.954
p<0.05 *p<0.01 ****p<0.0001			

Discussion

The purpose of this study was to examine whether the model of coordination of an agency impacted patient service utilization. Previous studies have suggested that care coordination between behavioral health and primary care providers could reduce the use of high cost emergency services and increase the use of preventative services (Croghan & Brown, 2010; Gerrity et al., 2014; Jones et al., 2004; Melek et al., 2014). Given the

mixed findings in the literature regarding the impact of coordinated care, this study adds to the knowledge of this issue by comparing two models of coordinated care. Findings from this study demonstrated that the model of coordination does in fact impact patient service utilization, which adds to the argument that more coordination may lead to less emergency services and hospitalizations. However, results in this study indicated that patients at co-located agencies experience more outpatient visits which could be viewed as a preventative service. Further, the results indicated that other patient characteristics can have a significant impact of service utilization. The patients age, number of chronic conditions, and diagnoses of schizophrenia, depression, and bipolar disorder all play a role in outpatient visits, emergency visits, and inpatient hospitalizations.

One limitation of this study is the impact of confounding variables (Shadish et al., 2002). Although some important confounding variables were included, it is naïve to think there are not more. Specifically, race could have an impact on service utilization, but unfortunately it was not available in this data set. Other variables such as whether the patient is new to coordinated care or have been receiving this type of care prior to the time period being examined could also impact the findings. For example, if an individual has been receiving regular primary care and coordinated services for multiple years their outcomes might look much different from someone for whom this is their first year receiving regular primary care or coordinated services. Threats to external validity exist in that results may not be generalizable outside of rural areas in a southwest state.

One of the strengths of this study is the use of claims data. A benefit of using secondary data is the quantity of information, and, of course, it is already collected, which saves time (McCall & Appelbaum, 1991). The Johns Hopkins ACG System in

particular provides access to thousands of patients' physical and behavioral health data which would otherwise be extremely difficult to acquire. The system has been used in many studies around the world to predict service utilization and other outcomes for patients with varying conditions (Antoniou, Ng, Glazier, Kopp, and Austin, 2014; Austin, Van Walraven, Wodchis, Newman, and Anderson, 2011; Brilleman, Gravelle, Hollinghurst, Purdy, Salisbury, and Windmeijer, 2014; Carlsson, Strender, Fridh, and Nilsson, 2004). Not only that, but it provides data for the entirety of a 12-month period of claims data for patients with SMI at the selected agencies and only includes patients who have been in services for a full 12 months (which eliminates the need to sort through the data and remove people in services less than the full year).

More research should be done to examine patient outcomes for different models of coordinated care to determine if findings in this study are supported in other locations and with additional populations. It would also be important to include additional variables that may influence results, such as patient race. Despite some limitations to this study, it does provide evidence that the type of coordinated care used by a particular agency can impact patient service use. Given the findings, it may be beneficial for agencies to consider implementing fully integrated models if they have the resources to do so. Fully integrated models may lead to fewer high cost services.

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CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

Three studies were conducted to better understand the process and outcomes of implementing an innovative approach to health care delivery for persons with significant behavioral health issues. These studies were unique in the focus on rural and frontier-based behavioral health providers who were at varying stages of implementing one of two primary models of health care coordination. These studies provide some of the first evidence of the implementation issues associated with behavioral-physical health care coordination and some of the first evidence of differential patient outcomes associated with these models. However, it is also important to see that other factors play a role such as whether an agency was an early or late adopter, the professional role of staff, and the characteristics of patients.

The literature highlights many areas that are in need of further study; one commonly mentioned area is the need to conduct studies that focus on outcomes for individuals with serious mental illnesses because many studies examine outcomes of coordinated care only for less severe behavioral health conditions (Butler et al., 2008; Gerrity et al., 2014). Additionally, much of the literature has focused on outcomes in a primary care setting which is problematic because individuals with SMI are more likely to seek care in a behavioral health setting rather than primary care (Butler et al., 2008; Croft & Parish, 2013). The three studies in this paper contribute to these gaps in research because of the focus on outcomes for individuals with serious mental illness in behavioral health settings. These findings extend the knowledge base by indicating that coordinated care can be effective for individuals with complex behavioral health conditions and that

the model of coordination does impact outcomes. While the patient level findings are important, the first two studies add to the limited literature on implementation and agency capacity in healthcare. Few studies have been conducted on implementation challenges and agency capacity issues for behavioral health agencies bringing primary care into their setting (Butler et al., 2008; Croghan & Brown, 2010; Druss et al., 2001; Druss et al., 2010; Manderscheid et al., 2008). The findings from the first two studies inform practices concerning challenges to anticipate or staff and organizational needs to address when implementing coordinated care. At the policy level, these findings provide evidence of the importance of appropriate funding mechanisms that support the level of care being provided and possibly a need for technical assistance to agencies undergoing such significant changes.

Organizational Considerations

The first study identified challenges agencies face in implementing integrated care regardless of the model of coordination. The findings supported and added to the existing knowledge in this area. Past studies identified some of the key barriers that agencies face including: staff understanding of practices, proper training (Gerolamo et al., 2014; Robson and Gray, 2007); collaborative relationships (Corrigan et al., 2014); development of protocols (Gerolamo et al., 2014); and, proper billing and funding infrastructure (Gerolamo et al., 2014; Mechanic, 2014). Findings from the first and second study supported these findings and also indicated that some challenges or capacity areas may be specific to the model of coordinated care in place. The first study found that co-located agencies reported more challenges in the area of role clarification, which was supported by findings in the second study indicating that co-located agencies were

less likely to show high capacity in the dimension of interdisciplinary role clarity. This has an important impact on agencies' ability to provide effective coordinated care, but can be addressed by agencies providing co-located care through development of protocols and guidelines. Protocols, agreements, and memorandums of understanding were universally absent from the agencies that were studied which likely inhibited their ability to coordinate care of patients. The importance of agreements and protocols cannot be understated especially given these findings. Development of standard documentation is a necessity in order for staff to understand their roles and roles of others. For co-located models in particular, establishing protocols is critical due to the fact that multiple agencies are attempting to coordinate care rather than working within a single agency.

The second area that impacted co-located agencies more than fully integrated agencies was information sharing. This was demonstrated by findings in the first study and supported by findings in the second study which indicated that staff at co-located agencies were less likely to demonstrate high capacity in the dimensions of inter-agency network participation, inter-agency coordination of care protocols, and interdisciplinary team cohesion. Each of these dimensions captured an element of being involved in a continuum of care, communicating with other providers, and establishing protocols for patient care coordination. Co-located agencies had more difficulty with sharing of information and communication which is an essential element to providing effective coordinated care.

Provider Considerations

Staff training on coordinated care was the third area in which co-located agencies demonstrated a need, but fully integrated did not in the first study. This finding was also

supported by results in the second paper. Although the second paper did not find significant differences in staff proficiencies by model of care coordination, there was evidence of differences between behavioral health and medical professionals. Behavioral health staff were more likely to demonstrate higher capacity in the dimensions of early intervention proficiency and treatment planning proficiency compared to medical staff. Alternatively, medical staff were more likely to demonstrate higher capacity in the dimensions of pharmacotherapy knowledge and chronic health screening proficiency compared to behavioral health staff. These findings support previous studies suggesting the importance of providing comprehensive training to all staff and professions involved in providing coordinated care (Gerolamo et al., 2014; Mechanic, 2014). Effective care cannot be provided if behavioral health and medical providers are not proficient in both physical health and behavioral health care. This is an important finding for providers because it emphasizes the need for staff to gain understanding of working with patients in ways that focus on physical and mental health concomitantly. Behavioral health providers need to develop enough understanding of physical health to communicate effectively with medical providers and determine when there is a need for medical intervention. They will need to learn more about medical management and conditions, and how to integrate physical health strategies into their treatment planning. Likewise, medical providers need to do the same in their understanding of behavioral health issues.

Findings from the first study also found a training need unique to medical providers: addressing stigmatizing attitudes held about individuals with mental health issues. This challenge came up for both co-located and fully integrated agencies. Perhaps additional training for medical providers to understand behavioral health

conditions will alleviate this problem, but it certainly must be recognized so medical providers have more willingness to work with patient who have mental health conditions. Coordinated care cannot work without the full support and buy-in from behavioral health and medical professionals.

Operational Considerations

The first two studies demonstrated that there are operational challenges and needs that limit agencies ability to provide coordinated care. Financial difficulties were expressed by most agencies regardless of the model of care they implemented which aligns with findings from previous studies of coordinated care (Butler et al., 2008; Gerolamo et al., 2014; Mechanic, 2014). Some agencies reported being unable to bill for services related to coordinated care activities, particularly for the work that goes on behind the scenes such as paperwork and provider communication. Some indicated they had lost revenue as a result of providing coordinated care. Others expressed concern that payment models did not fit the type of care being provided. For example, the inability to bill for same day services made it difficult to support coordinated care. The 15-minute model of care created another challenge which limited the quality of care needed for patients with complex mental health issues who typically require more time from providers.

Difficulties with EHR systems posed additional operation challenges for many agencies. Agencies utilizing multiple EHR systems faced barriers to information sharing between behavioral health and primary care providers and unnecessary complexity from trying to navigate multiple technological platforms. The findings from these studies indicate that currently available EHR systems do not meet the needs of behavioral health

providers attempting to offer coordinated care. These electronic systems should serve the purpose of enabling coordinated care with ease, but instead the inadequacies of these systems limited providers ability to share information and created the need for staff to develop makeshift solutions to get around inadequate technology.

These operational issues illustrate the need for policy and technology to catch up with the day to day needs of providers. Agencies will continue to provide coordinated care, but until billing and funding mechanisms, and effective technology become available to address current system limitations, the provision of coordinated care will be satisfactory at best. Future studies on coordinated care are needed that focus on variations in funding and EHR technology to gain a better understanding of the role these two areas play in implementation outcomes and, ultimately, patient outcomes.

Outcome Considerations

In terms of differences between models of coordinated care, the first two studies indicated that fewer challenges and capacity issues affect fully integrated agencies as opposed to co-located. The third paper demonstrated that patients receiving services at co-located agencies were more likely to experience increases in inpatient hospitalizations, emergency visits, and outpatient visits when controlling for patient age, sex, chronic condition count, and diagnosis (depression, bipolar, and schizophrenia). This seems to be consistent with the literature suggesting that models of care that are more coordinated are likely to see better patient outcomes and reduce the frequency of high cost services (Butler et al., 2008; Druss & Mauer, 2010; Gerrity et al., 2014; Gilbody et al., 2006; Pirraglia et al., 2012). However, it is important to recognize that chronic condition count,

and psychiatric diagnosis (depression, bipolar disorder, and schizophrenia) were also significant predictors of service utilization when controlling for all other variables.

Studies examining the impact of coordinated care on service utilization for individuals with serious behavioral health conditions are extremely limited in the literature (Butler et al., 2008; Gilbody et al., 2006; Mauer & Druss, 2010). The third study in the paper provides empirical evidence that the level of coordination does impact outcomes for individuals with complex behavioral health conditions. In the future, it will be important to study these outcomes over a longer period to see if the findings are sustained over time. Other variables should be considered in future studies that examine the impact of service utilization on health outcomes, along with treatment adherence or recovery and maintenance of various conditions. Additionally, more studies should be done to understand the factors that contribute to differences in outcomes at the different models of coordinated care. Understanding why these differences occur, could lead to refining models of care to better meet the needs of specific populations.

Future Directions

The findings from these studies add empirical support to the literature that suggests coordinated care can be effective in reducing high cost service use and provides insight into implementation issues that should be addressed for agencies planning to or currently providing coordinated care. The findings demonstrate a significant need in healthcare to provide additional training for practitioners, possible technical assistance to agencies implementing integrated care, and need for policy level changes to minimize challenges agencies experience and to create a sustainable business environment for agencies to flourish and provide quality care.

The second study in this paper involved the development of an instrument that was pilot tested to identify challenges and needs of agencies and staff in providing coordinated care. This tool was developed due the lack of existing measures to capture capacity for coordinated care. Given the findings across all three studies, it seems one of the next steps would be to validate this tool and encourage adoption of the tool to assess more agencies to study and facilitate implementation of coordinated care models.

Although the findings seem to point to fully integrated models of care coordination as having fewer challenges and better outcomes, co-located models still have potential to work if the primary challenges are remedied. More research is still needed to gain a better understanding of the impact of coordinated care. Specifically, studying the benefits and sustainability of various models of coordination and the outcomes for patients. Studies focusing on not only patient outcomes in terms of service utilization, but also on how that translates into cost savings, which is a significant concern for many organizations. The true cost savings that result from coordinated care will only become known when agencies have had more time to adapt to changes in practice and patients have been engaged in services longer. Longitudinal studies will be necessary to examine the effectiveness of coordinated care and cost benefits.

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APPENDIX A
CO-AUTHOR PERMISSIONS

Both co-authors listed in two of the three studies included in this dissertation, Elsa Vazquez Arreola and Michael Shafer, granted their permission to include the work as part of the dissertation.

APPENDIX B
NEEDS ASSESSMENT SITE VISIT PROTOCOL

Purpose of the Site Visit

1. **Relationship Building:** Meeting the CEO, CMO, COO, clinical director, or other senior level administrator manager of the agency.
2. **Project Introduction:** To brief members of the senior leadership team on the overall purpose, timeline, and products to be produced by the project. (See project fact sheet).
3. **Initiate data collection for BSOC:** To distribute, review, and obtain all of the information elements contained on the BSOC. Attempt to leave with as much information completed on the BSOC. Do not leave without a firm timeline commitment for completion of the BSOC and specific individuals with contact information responsible for compiling information for the BSOC. (see BSOC questionnaire)
4. **Issues identification:** To obtain a general, high level overview of the issues, concerns, and impediments that senior level managers identify regarding their participation in the needs assessment activities and/or the inter-organizational process improvement activities.
5. **Facilities Tour/Overview:** To conduct a physical tour of the clinic or facility in which the agency provides direct care to their clients. If the agency operates multiple clinics within or across diverse communities, to tour one such clinic and obtain physical location information for all other facilities. If possible, obtain sample photos of both the exterior and the interior of the facility.

Issues identification

Using a conversational interviewing style, we want to try and begin a process of elucidating the general framework that each agency is using as they approach issues of health care integration and doing business with the new RBHA. We also want to gauge the level of cooperation we can anticipate we will receive from the agency in getting our staff surveys and BSOC completed, along with a sense of their receptivity, sense of need and sense of urgency in receiving training and technical assistance from us when we move into that phase of the project.

Introductory Script: (suggested wording, should follow the general script, but not expected to be read verbatim.)

Thank you for agreeing to participate in our first round of site visits for the HCIC Needs Assessment. I am (introduce self) and this is (introduce others). Our goal today is to introduce you to the project (provide copies of fact sheet), begin the first set of our survey data collection, identify issues or concerns related to participating in the needs assessment activities, and conduct a tour of your facility. In order to ensure that we capture all that is said today, we would like to audiotape today's meeting.

This taping will be saved to our computer server and will only be used for background information and will not be publicly released or reported verbatim without your approval. Do we have your permission to audiotape today's meeting?

To start, we would like to provide you with a little more of our background and hear a little about each of your roles in this agency.

[Each ASU person briefly describes their background and some relevant projects they have worked on, then have each agency person give their name and describe their role]

Now we would like to give you a brief overview of our plans for this project over the next few months [refer to Fact Sheet; ask if anyone has questions at the end].

Data Collection:

As described in the Fact Sheet, we plan on distributing the staff survey beginning in September. So it is important that we have a contact person for future data collection from your agency. Who will be the best point of contact for getting those distributed to the correct people?

During our visit today we would like to collect additional information on the organizational level. Before we leave today we would like to have as much of that information as possible. If we cannot, we will communicate with the contact person to gather whatever we do not get today.

Name of Contact Person: _____

Title of Contact person: _____

Telephone # of Contact person: _____

Email of Contact Person: _____

Agency Overview

To help us become well informed about your agency and the services that you provide, can you provide us a general history and background of your organization?

- How old/when funded
- Primary services provided
- Mission statement
- # of employees
- # of locations
- Organizational chart/organizational structure, reporting hierarchies
- Tenure of respondents with agency and their role

Relationship with Northern Arizona Regional Behavioral Health Authority

- How long
- Contractual? Collaborative?
- Does agency receive funding from NARBHA?
- Quality of relationship with NARBHA?
- As it relates to the provision of integrated health and behavioral healthcare to persons with serious mental illness, general mental health, and substance use disorders, what would you consider to be the greatest obstacles or challenges your agency faces relative to your agency’s relationships with NARBHA?

Relationship with Health Choice

- How long
- Contractual? Collaborative?
- Does agency receive funding from Health Choice?
- Quality of relationship with Health Choice?
- As it relates to the provision of integrated health and behavioral healthcare to persons with serious mental illness, general mental health, and substance use disorders, what would you consider to be the greatest obstacles or challenges your agency faces relative to your agency’s relationship with Health Choice?

Relationship with Other Community Health Providers

In terms of serving people with general mental health issues, addiction and substance abuse disorders, or serious mental illness, please identify other agencies/organizations in your community, in the region, and in the state with which you collaborate in the provision of services.

Agency 1 _____

What services does this agency provide: _____

Relationship status: ___ Informal referral sharing ___ Formal (MOU) referral sharing
___ Collaboration/Partnership

Quality of Relationship: ___ Nonexistant ___ Poor ___ Fair ___ Good

Agency 2 _____

What services does this agency provide: _____

Relationship status: ___ Informal referral sharing ___ Formal (MOU) referral sharing
___ Collaboration/Partnership

Quality of Relationship: ___ Nonexistant ___ Poor ___ Fair ___ Good

Agency 3 _____

What services does this agency provide: _____

Relationship status: ___ Informal referral sharing ___ Formal (MOU) referral sharing
___ Collaboration/Partnership

Quality of Relationship: ___ Nonexistant ___ Poor ___ Fair ___ Good

Agency 4 _____

What services does this agency provide: _____
Relationship status: ___ Informal referral sharing ___ Formal (MOU) referral sharing
___ Collaboration/Partnership
Quality of Relationship: ___ Nonexistant ___ Poor ___ Fair ___ Good

Agency 5 _____

What services does this agency provide: _____
Relationship status: ___ Informal referral sharing ___ Formal (MOU) referral sharing
___ Collaboration/Partnership
Quality of Relationship: ___ Nonexistant ___ Poor ___ Fair ___ Good

As it relates to the provision of integrated health and behavioral healthcare to persons with serious mental illness, general mental health, and substance use disorders, what would you consider to be the greatest obstacles or challenges your agency faces relative to your agency’s relationships with other community providers?

Information Technology & EMR

- Does your agency operate with an Electronic Medical Record (EMR) system?
Name of system: _____
Year Implemented: _____
Assessment of Degree of Implementation (what stage of meaningful use are you at):
 - Not started
 - Early Stage Exploration
 - Model selection
 - Implementation
 - Sustained
- Does your agency participate in Health Information Exchange (HIE) (e.g., HINAZ)
- Does your agency have electronic prescribing capabilities?
Assessment of Degree of Implementation:
 - Not started
 - Early Stage Exploration
 - Model selection
 - Implementation
 - Sustained
- Does your agency have information sharing agreements with any of the local, regional, or state agencies previously identified?
- Do any of these agreements involve sharing of electronic information or shared EMR (with which agencies)?
- Does your agency submit encounter claims electronically?
○ To which funding agencies?
- As it relates to the provision of integrated health and behavioral healthcare to persons with serious mental illness, general mental health, and substance use disorders, what would you consider to be the greatest obstacles or challenges your agency faces relative to information technology and EMR?

Integration Status and Approach

- Where is your agency on the pathway to healthcare integration:
- Which Model of Integration describes the current status of integration for people with serious mental illness served by your agency?
 - Coordinated Care – minimal collaboration
 - Patients are referred to a provider at another practice site, and providers have minimal communication
 - Coordinated care – basic collaboration
 - Providers at separate sites periodically communicate about shared patients
 - Collocated care – Basic collaboration

- Providers share the same facility, but maintain separate cultures and develop separate treatment plans for patients.
 - Collocated care – Close collaboration
 - Providers share records and some system integration.
 - Integrated Care – Case collaboration approaching an integrated practice
 - Providers develop and implement collaborative treatment planning for shared patients, but not for other patients.
 - Integrated Care – Full collaboration in a merged integrated practice for all patients
 - Providers develop and implement collaborative treatment planning for all patients.
- Which Model of Integration Describes the desired or selected model of integration for people with serious mental illness that your agency or community has chosen?
 - We haven't chosen a model yet.
 - Coordinated Care – minimal collaboration
 - Coordinated care – basic collaboration
 - Collocated care – Basic collaboration
 - Collocated care – Close collaboration
 - Integrated Care – Case collaboration approaching an integrated practice
 - Integrated Care – Full collaboration in a merged integrated practice for all patients
- What is your Primary Care Medical Home Status?
- Are you affiliated or participating in an ACO (Accountable Care Organization)?

Workforce Skills, Competencies, and Capacity

- What is the total number of FTEs employed by your agency?
 - Administrative/Managerial _____
 - Support/Non-Direct Service _____
 - Clinical/Direct Service _____
- What is the total number of sites that your agency operates
 - What is the relative size of these locations relative to FTEs and/or patients served
 - What is the oversight/management structure over locations
- Turnover
 - Characterize: Low - Medium High
 - Problem Low Medium High
 - Are there specific positions that your agency experience greater difficulty in recruiting and/or retaining than others?
- Staff knowledge and competencies in providing integrated health care
 - My staff have a good working knowledge of models and approaches in providing integrated health care to persons with general mental health and substance use disorders
 - My staff have a good working knowledge of models and approaches in providing integrated health care to persons with serious mental illness
 - Staff in this agency are engaged in changing the ways we do business to provide more integrated health care to persons with behavioral health issues
 - This agency has staff that are competent in providing integrated health care to persons with general mental health and substance use disorders
 - This agency has staff that are competent in providing integrated health care to persons with serious mental illness
 - This agency has a sufficient pool of potential employees to draw upon to provide integrated health care
 - This agency has difficulty recruiting and retaining skilled employees that are competent in providing integrated health care
- As it relates to the provision of integrated health and behavioral healthcare to persons with serious mental illness, general mental health, and substance use disorders, what would you consider to be the greatest obstacles or challenges your agency faces relative to your agency's workforce?

Regulatory Environment & Licensing

- What services is your agency licensed by the state of Arizona to provide?
- What services and programs is your agency currently credentialed to provide by external accrediting bodies (e.g., CARF, JCAHO, NQA, NCQA etc.)?
- As it relates to the provision of integrated health and behavioral healthcare to persons with serious mental illness, general mental health, and substance use disorders, what would you consider to be the greatest obstacles or challenges your agency faces relative to your agency’s regulatory environment and licensing?

Financials, Reimbursement, Compensation

- What are the sources of service revenue generated by your agency?
 - NARBHA
 - Health Choice
 - i.Other AHCCCS health plans
 - Health Resource Services Administration (HRSA)
 - Private insurance plans
 - Other local/county/regional funding sources (specify)
 - Other state funding sources (specify)
 - Other Federal funding sources (specify)
- For each of the revenue sources identified above, please describe the nature of your reimbursement relationships:
 - Risk
 - i.No risk
 - ii.Full risk
 - iii.Shared risk
 - Fee for Service
 - Capitated (e.g., PMPM)
 - Values-based or Pay for Performance
- As it relates to the provision of integrated health and behavioral healthcare to persons with serious mental illness, general mental health, and substance use disorders, what would you consider to be the greatest obstacles or challenges your agency faces relative to your agency’s reimbursement and compensation?

Technical Assistance Needs

What would you consider to be the three biggest obstacles or challenges your agency is facing today in providing integrated health care to people with **serious mental illness**?

#1 _____

#2 _____

#3 _____

What would you consider to be the three biggest obstacles or challenges your agency is facing today in providing integrated health care to people with **general mental health & substance use disorders**?

#1 _____

#2 _____

#3 _____

In terms of program consultation, technical assistance, or staff training, what would you consider to be your agency's greatest needs over the next 12 – 36 months?

#1 _____

#2 _____

#3 _____

#4 _____

#5 _____

APPENDIX C

HEALTH CARE INTEGRATION NEEDS ASSESSMENT SURVEY

SECTION 1: About you and your work

1. Please identify that agency for which you work:

- Community Bridges
- Community Counseling Centers, Inc.
- Encompass Health Care
- Little Colorado Behavioral Health Center
- Mohave Mental Health Clinic
- Southwest Behavioral Health Services
- The Guidance Center
- Spectrum Healthcare
- Southeastern Arizona Behavioral Health Services, Inc.
- West Yavapai Guidance Center
- North County Healthcare
- NACA Family Health Center
- Canyonlands
- Mountain Health & Wellness
- Community Health Center of Yavapai
- Other (please specify) _____

2. Please identify the primary location at which you work (check only one):

- St. Johns
- Eagar
- Springerville
- Flagstaff
- Fredonia
- Page
- Williams
- Globe
- Payson
- Lake Havasu
- Kingman
- Bullhead City
- Show Low
- Pinetop Lakeside
- Snowflake
- Holbrook
- Winslow
- Prescott
- Prescott Valley
- Cottonwood
- Sedona
- Camp Verde
- Other (please specify): _____

3. Which of the following best describes your role at your place of employment? (check only one)

- Psychiatry
- Pharmacy
- Care Coordination/Management
- Case Management (non-clinical)
- Counselors/Therapists (clinical)
- Behavioral Health Worker
- Peer Support/Peer Recovery Specialist
- General Medical Practitioner (drop down: Family Medicine Physician, Internal Medicine Physician, Physician Assistant, Family Nurse Practitioner, Registered Nurse)
- Specialty Physician (drop down: OB/GYN, Pediatrics, Dentist, Optometrist, etc.)
- Allied Health Professional (drop down: Medical Assistant, Medical Technician, Lab technician, Medical Coder, etc.)
- Administrative or Support Services
- Other (please specify): _____

4. Gender: _____ Female _____ Male _____ Transgender

5. Are you Hispanic or Latino? _____ Yes _____ No

6. Race: *(Please check all that apply)*

- _____ American Indian/ Alaska Native
- _____ Asian
- _____ Native Hawaiian/Other Pacific Islander
- _____ Black or African American
- _____ White

7. Highest degree status: *(Please check only one)*

- _____ No high school diploma or equivalent
- _____ High school diploma or equivalent
- _____ Some college, but no degree
- _____ Associate's degree
- _____ Bachelor's degree
- _____ Master's degree
- _____ Doctoral degree or equivalent
- _____ Doctor of medicine
- _____ Other *(Please specify)* _____

8. Years of experience: *(If less than one year, please record as one)* Number of years:

8 a.) In the health care/behavioral health field? _____

8 b.) At your current employer/agency? _____

8 c.) In your current position? _____

9. What is your official job title? _____

SECTION 2: About your knowledge, practice, and perceptions about integrated healthcare delivery.

For all of the items in Section 2, the response set will be a 5 point Likert Scale, anchored at 1 = Strongly Disagree and 6 = Strongly Agree

Screening & Assessment

1. Screening for behavioral health conditions (mental illness/substance abuse) is a routine part of my job duties.
2. I am proficient in screening for behavioral health conditions.
3. Assessing for behavioral health conditions is a routine part of my job duties.
4. I am proficient in assessing for behavioral health conditions.
5. Screening for chronic health conditions (diabetes, obesity, high blood pressure) is a routine part of my job duties.
6. I am proficient in screening for chronic health conditions.
7. Assessing chronic health conditions is a routine part of my job duties.
8. I am proficient in assessing chronic health conditions.
9. I have a need for additional training on screening and assessment of behavioral health conditions.
10. I have a need for additional training on screening and assessing chronic health conditions.
11. My agency could benefit from technical assistance to enhance their screening and assessment of chronic health conditions and/or behavioral health conditions.

Client Engagement & Early Intervention

12. I am proficient in engaging clients in conversation about their physical health.
13. I am proficient in engaging clients in conversation about their behavioral health.
14. I am proficient in the use of motivational interviewing when interacting with my clients.
15. Overall, I think my agency does a good job in intervening early with patients who are at risk of chronic health conditions.
16. Overall, I think my agency does a good job intervening early with patients who are at risk of behavioral health conditions.

17. Patients at my agency are routinely exposed to health promotional and informational material.
18. My agency makes effective use of community health workers, peer recovery specialists, or other lay workers to engaged and intervene early with patients.
19. I have a need for additional training in client engagement strategies.
20. I have a need for additional training in Motivational Interviewing.

Integrated Health Information/Technology

21. My agency's Electronic Medical Record/Electronic Health Record (EMR/EHR) is useful in providing integrated care to my patients.
22. I am proficient in using my agency's EMR/EHR to provide integrated care to my patients.
23. My agency's EMR/EHR integrates primary health and behavioral health information in a manner that is easy for me to use.
24. My agency's EMR/EHR is useful to me in managing my caseload.
25. My agency's EMR/EHR is useful to me in seeing what medications my patients are on.
26. My agency's EMR/EHR is useful to me in treatment planning with my patients.
27. My agency's EMR/EHR is useful to me in documenting my patients' progress.
28. My agency's EMR/EHR is useful to me in billing my encounters with my patients.
29. Our agency could benefit from technical assistance or consultation to enhance its EMR/EHR.
30. I have a need for additional training in how to use my agency's EMR/EHR.

Interdisciplinary Service Delivery

31. My agency has an established policy that embraces interdisciplinary service delivery as a central element of how we provide services.
32. I am knowledgeable about my role and responsibilities as part of an interdisciplinary team.
33. My coworkers are knowledgeable about their roles and responsibilities as part of an interdisciplinary team.
34. My interdisciplinary team includes both primary care and behavioral health care professionals.
35. I respect the professional skills and abilities of my coworkers who are part of the interdisciplinary team with whom I work.

36. As members of an interdisciplinary team, my coworkers and I communicate effectively about issues of patient care.
37. There is a high level of trust among the members of our interdisciplinary team.
38. Our agency could benefit from technical assistance to make our interdisciplinary team process work more effectively.
39. I have a need for additional training to enhance my effectiveness as an interdisciplinary team member.
40. Our agency's EMR/EHR facilitates interdisciplinary team communication.
41. My agency has written policies and procedures that promote appropriate and routine sharing of necessary information between providers with shared patients.

Treatment and Care Planning

42. Treatment or care plans developed at this agency identifies both behavioral health and other primary care health conditions.
43. Treatment or care plans developed at this agency describes the impact of health conditions on multiple life domains (e.g. self-care, family/peer, work, access to resources).
44. Treatment or care plans developed at this agency identifies factors that will contribute to a patient's recovery and wellness such as patient strengths and support network.
45. Treatment or care plans developed at this agency identifies perceived barriers to recovery for all health conditions (e.g. inadequate housing, lack of social support, lack of financial resources, access and communication barriers).
46. Treatment or care plans developed at this agency addresses patient readiness for health behavior change.
47. Developing treatment or care plans is a routine part of my job duties at this agency.
48. I am proficient in developing treatment or care plans.
49. I am proficient in managing and following up on treatment or care plans.
50. I am in need of additional training in the development and/or management of integrated treatment or care plans.
51. My agency could benefit from technical assistance in developing or managing integrated treatment or care plans.

Care Managers

52. In my agency, we have staff with the designated responsibility of care/case management.
53. Care/case management is a central function of my job.

54. Overall, my agency is effective in ensuring that we follow-up on information we send to other providers outside of our agency.
55. Overall, I am effective in ensuring that I follow-up on information I send to other providers outside of my agency.
56. My agency could benefit from technical assistance or training to improve our care coordination/case management functions.

Care Coordination

57. My agency has effective procedures for notifying attending primary care physicians or other primary care providers about screening results that require follow up.
58. My agency has effective procedures for notifying attending psychiatrists or other behavioral health providers about screening results that require follow up.
59. I am effective in referring a patient to a behavioral health specialist.
60. I am effective in referring a patient to a primary care provider.
61. Our agency has an effective reminder system for appointments, lab tests, and follow-up assessments.
62. Overall, our agency does a good job in coordinating the care of our patients.
63. Our agency could benefit from technical assistance to improve our care coordination functions.
64. I have a need for training to improve my effectiveness in coordinating the care of patients with whom I interact.

Patient Access to Care

65. Patients at this agency can access care quickly, generally in one day or less.
66. My agency has a well-functioning triage process for identifying and prioritizing patient needs.
67. Patients can routinely access their provider by telephone at my agency.
68. My agency effectively uses telemedicine other video interactive technology to communicate with patients.
69. My agency has an effective scheduling and appointment reminder system to minimize patient no shows.
70. My agency's location is convenient to my patients.
71. My agency could benefit from technical assistance to improve our patient's access to care.
72. I have a need for training to enhance my ability to improve patient's access to care.

Pharmacological Approaches/Medication Management

73. Prescribers are part of our interdisciplinary team at this agency.
74. My agency's EMR/EHR allows me to access real time information about my patient's current prescriptions.
75. My agency's EMR/EHR allows prescribers to access real time information about my patient's clinical status.
76. I am knowledgeable about the common drugs, dosing patterns, and side effects used treatment chronic health conditions (e.g., diabetes, obesity, high blood pressure).
77. I am knowledgeable about the common drugs, dosing patterns, and side effects used treatment mental illnesses (e.g., depression, anxiety, bi-polar, schizophrenia).
78. I am knowledgeable about the common drugs, dosing patterns, and side effects used treatment substance abuse & addictive disorders (e.g., alcoholism, opiate abuse, etc.).
79. I have a need for additional training on pharmacology and medication management.
80. My agency could benefit from technical assistance to enhance our medication management effectiveness.

Continuity of Care

81. Our agency has established protocols with other health and social service agencies from which we receive patient referrals.
82. Our agency has established protocols with other health and social service agencies to which we refer our patients.
83. Our agency has established procedures for generating and communicating patient discharges from our services to other providers.
84. Our agency is part of a network of other agencies that provide a comprehensive continuum of care for our patients.
85. Our agency is part of a network of other agencies that provide a timely continuum of care for our patients.
86. Our agency could benefit from technical assistance to enhance our effectiveness in providing a continuum of care for our patients.
87. I have a need for training to enhance my effectiveness in providing a continuum of care to my patients.

Agency Culture

88. I have a clear understanding of where my agency is headed in providing integrated health care.
89. My agency's executive leadership has provided a clear description of the model of integrated healthcare that our agency will provide.
90. Our agency is embracing healthcare reform.
91. My agency has provided me with training and information
92. My agency's Executive Leadership communicates how the Integrated Health Care Model supports the mission of the agency to all agency staff.
93. My agency's Executive Leadership articulates clear goals for services for implementing an Integrated Health Care Model to all agency staff.
94. My agency is capable of being an integrated health care provider.
95. I have the knowledge and skills to become capable of providing integrated health care to my patients.
96. I am willing to make changes to my work habits to accommodate offering integrated services.
97. I understand how integration will affect my job.
98. I am comfortable working with patients who have chronic health conditions (diabetes, obesity, high blood pressure).
99. I am comfortable working with patients who have behavioral health conditions (mental illness/substance abuse).
100. In the last 12 months, I have attended training on working with patients who have behavioral health conditions (mental illness/substance abuse).
101. In the last 12 months, I have attended training on working with patients who have chronic health conditions (diabetes, obesity, high blood pressure).
102. In the last 12 months, my agency has provided training for staff to address the interactions among behavioral health and chronic health conditions.