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**Behavioral Care for Children in Urban and Rural Integrated Primary Care**

by

**David I. Taylor**

A DISSERTATION

Presented to the Faculty of  
the University of Nebraska Graduate College  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy

Health Promotion & Disease Prevention Research  
Graduate Program

Under the Supervision of Professors Shinobu Watanabe-Galloway and Ghada Soliman

University of Nebraska Medical Center  
Omaha, Nebraska

August, 2016

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Melissa Tibbits, PhD

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**BEHAVIORAL CARE FOR CHILDREN IN  
URBAN AND RURAL INTEGRATED PRIMARY CARE**

David I. Taylor, Ph.D.

University of Nebraska, 2016

Supervisors: Shinobu Watanabe-Galloway, Ph.D. and Ghada Soliman, Ph.D.

Mental, emotional, and behavioral issues in children are a significant concern for the children, their families, and society. Despite the existence of evidence-based treatments, the success of behavioral healthcare to meet the needs of these families will require high quality communication and relationships across a wide range of stakeholders. Integration of care represents a patient-centered strategy to unify these stakeholders into a single cohesive care team. The purpose of this dissertation is to define the behavioral healthcare team in integrated primary care for children in terms of the functional roles involved and to evaluate the quality of relationships and communications between them. Using a pragmatic mixed method approach involving interviews (n=16) and a survey (n=154) of primary care and behavioral health providers at 48 co-located clinics across the state of Nebraska supplemented by a pilot test survey of (n=16) parents, this project found that there were 8 key roles involved including: families, primary care providers, behavioral health specialists, care coordinators, psychiatric providers, primary care nurses, school personnel, and government agencies. Further, it was found that although co-location did not always equate to full integration, it was associated with significantly better relationships and communication between providers which were in turn positively correlated with their perceived ability to meet the needs of their patients with behavioral health concerns. These findings provide additional justification for the co-location of behavioral health providers into primary care clinics and offer a number of actionable suggestions to overcome interpersonal and system barriers to teamwork within co-located clinics.

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**LIST OF ABBREVIATIONS:**

- ADHD** – Attention-Deficit / Hyperactivity Disorder
- AHRQ** – Agency for Healthcare Research and Quality
- APRN** – Advanced Practice Registered Nurse
- BHCT** – Behavioral Health Care Team
- BHP** – Behavioral Health Provider
- CD** – Conduct Disorder
- CPS** – Child Protective Services
- DALY** – Disability Adjusted Life Year
- DO** – Doctor of Osteopathic Medicine
- DSM** – Diagnostic and Statistical Manual of Mental Disorders
- EMR** – Electronic Medical Record
- GJS** – Global Job Satisfaction
- HIPAA** – Health Insurance Portability and Accountability Act
- IEP** – Individualized Education Plan
- IPC** – Integrated Primary Care
- LIMHP** – Licensed Independent Mental Health Practitioner
- LMHP** – Licensed Mental Health Practitioners
- MCPAP** – Massachusetts Child Psychiatry Access Program
- MD** – Doctor of Medicine
- MFT** – Marriage and Family Therapist
- NP** – Nurse Practitioner
- NSDUH** – National Survey on Drug Use and Health
- ODD** – Oppositional Defiant Disorder
- PA** – Physician Assistant
- PCC** – Patient Care Coordinator
- PCP** – Primary Care Provider
- PI** – Principle Investigator

**PWS** – Provider Work Survey

**RC** – Relational Coordination

**RCS** – Relational Coordination Survey

**SAMHSA** – Substance Abuse and Mental Health Services Administration

**SUD** – Substance Use Disorder

**SW** – Social Worker

**WHO** – World Health Organization

**CHAPTER 1: INTRODUCTION**

## **1.1 Child and Adolescent Behavioral Health:**

### 1.1.1 Definitions of Behavioral Health:

It has long been known that health means more than an absence of physical ailment. This is reflected in the definition of health established World Health Organization (WHO) in the preamble to the organization's constitution which was adopted at the International Health Conference in 1946 which states, "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." The WHO defines mental health as being "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (2004). For children, definitions of mental health also include their ability to meet developmental and emotional milestones (Perou et al., 2013). While these definitions describe mental health from a positive perspective with a focus on well-being, mental health is often viewed in reference to mental disorders and mental illness.

The 1999 Surgeon General's report on mental health describes mental disorders as conditions when processes such as thinking, mood, and/or behavior cause distress or impair functioning and defines mental illness as the collective term for all diagnosable mental disorders (US Surgeon General, 1999). Some have expanded the term to mental, emotional, and behavioral disorders when referring to these disorders and have suggested that these are distinct from mental, emotional, and behavioral problems, in which the symptoms do not meet the diagnostic criteria for a disorder (O'Connell, Boat, & Warner, 2009). Additional terms for these disorders, such as psychological or psychiatric conditions, also exist in the literature and are derived from the names of the disciplines that have developed to study them (Costello, Egger, & Angold, 2005). Generally, all of these terms tend to refer to the same underlying concept.

There is some debate over whether or not substance use disorders (SUDs) should be included in the definition of mental disorders (Hasin et al., 2013). SUDs are a closely related set of conditions in which the use of psychoactive substances cause similar distress or impairment to daily functioning. These substances can include legal drugs such as alcohol, caffeine, or nicotine as well as illicit or prescription drugs. Recently, SUDs were combined into a single class where they had previously been divided between two categories in order of severity: abuse, where problematic use of the substance was hazardous to physical health or lead to averse social or legal consequences, and dependence, in which there were signs of physiological addiction and increasing tolerance (Hasin et al., 2013). Whether or not one defines SUD as mental illness, there is considerable evidence from meta-analysis that there is significant co-morbidity between SUD and other mental disorders with estimates of 50% of those with lifetime drug dependence having some comorbid mental health disorder (Lai, Cleary, Sitharthan, & Hunt, 2015).

Although it is difficult to find a clear distinction between mental and behavioral health in the academic literature, behavioral health is generally viewed as being the more comprehensive term encompassing mental health as well as other aspects such as substance use and behavioral aspects of physical health. The inclusion of alcohol misuse and illicit drug use in 2012 was identified by the Substance Abuse and Mental Health Services Administration (SAMHSA) as the reason why they switched the title of their biannual statistics report from *Mental Health, United States* to *Behavioral Health, United States* (SAMHSA, 2013). This view of the difference between mental and behavioral health can also be seen in the differences in definition between mental and behavioral *healthcare*. Whereas the Agency for Healthcare Research and Quality (AHRQ), in their Lexicon for Behavioral Health and Primary Care Integration, defines mental healthcare as being “care to help people with mental illnesses (or at risk) – to suffer less emotional pain and disability- and live healthier, longer, more productive lives,” behavioral health care, on the other

hand, is defined as “an umbrella term for care that addresses any behavioral problems bearing on health, including mental health and substance abuse conditions, stress-linked physical symptoms, patient activation and health behaviors” (Peek, 2013).

It is important to note that there is little evidence in the existing literature as to whether or not this lexical shift towards behavioral health is reflected in the experiences and perceptions of the practitioners on the ground. However, in the spirit of inclusivity, this document will use the term behavioral health preferentially to broadly refer to the concepts of psychosocial, emotional, and behavioral wellbeing encapsulated in the above definitions.

#### 1.1.2 Types of Mental Disorders and Substance Use Disorders Affecting Children and Adolescents:

First published in 1952, the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) represents an attempt to categorize mental, emotional, and behavioral health symptoms into distinct disorders (American Psychiatric Association, 1952). In the 6 decades since, the DSM has been revised multiple times to incorporate scientific progress in the field with the most recent fifth edition, DSM-5, published in 2013 (2013). As explained in its preface, the DSM-5 recognizes that the underlying pathological processes for many mental disorders are not well understood, so instead the disorders are classified based on specific diagnostic criteria for how each disorder is often expressed. The DSM-5 is widely used as a guide for clinicians in diagnosis and management. As such, it will be used as the basis for classification of disorders in this document. Additionally, for the purposes of this document, children will be defined from birth to age 12 and adolescents will be defined as ages 12 – 17.

Due to the recent development of the DSM-5, many of the existing estimates of prevalence for mental disorders come from national studies conducted using the DSM-IV definitions. Nationally representative studies (the National Comorbidity Survey Replication and



the National Health and Nutrition Examination Survey) using validated diagnostic interviews estimated that 13.1% of children 8 to 15 years of age met the diagnostic criteria for at least one mental disorder defined in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) and that approximately one in every four to five youth in the United States meets the criteria for a mental disorder with severe impairment across their lifetime (Merikangas et al., 2010a; Merikangas et al., 2010b). The most common mental disorders in childhood based on 12-month prevalence were found to be Attention Deficit/Hyperactivity Disorder (ADHD) (8.6%), mood disorders (3.7%), conduct disorder (2.1%), and anxiety disorders (0.7%) (Merikangas et al., 2010b). In terms of lifetime prevalence, nearly a third (31.9%) of adolescents will meet criteria for an anxiety disorder, 19.6% for a behavior disorder, and 14.3% for a mood disorder (Merikangas et al., 2010a).

The DSM-5 defines Attention-Deficit / Hyperactivity Disorder (ADHD) by a persistent pattern of inattention and/or hyperactivity that began prior to the age of 12. In addition to these core domains, children with ADHD also exhibit significant deficits in social function (Staikova, Gomes, Tartter, McCabe, & Halperin, 2013). Estimates for the prevalence of ADHD among children and adolescents from the National Survey of Children's Health that around 1.1% of children 3-5 years old had a current diagnosis of ADHD which grew to 7.5% of children 6-11 and 8.8% of adolescents 12-17 (Perou et al., 2013).

The majority of mood disorders fall into what the DSM-5 defines as depressive disorders, which is a class of disorders characterized by persistent feelings of sadness, emptiness, or irritability along with associated cognitive and physical symptoms (2013). Major depressive disorder, commonly known as depression, is one of the more severe of the depressive disorders. The National Survey of Children's Health found that the 12-month prevalence of depression among children and adolescents increased with age from 0.6% of children 3-5 years old ever

receiving a diagnosis to 2.3% of children 6 to 11 years of age all the way up to 7.1% of adolescents 12-17 year olds (Perou et al., 2013). Disruptive mood dysregulation disorder is a new depressive disorder introduced in the DSM-5 that is characterized by a prevailing negative mood punctuated by severe temper outbursts and is specific to children. Estimates of 3-month prevalence for this disorder ranged from 0.8 – 3.3% (Copeland, Angold, Costello, & Egger, 2013).

Disruptive, impulse-control, and conduct disorders include two mental disorders commonly experienced in childhood: oppositional defiant disorder (ODD) and conduct disorder (CD). According to the DSM-5, ODD refers to a child who is frequently angry or irritable, is argumentative or defiant towards authority figures, and/or acts in a spiteful or vindictive manner. CD refers to a persistent and repetitive violation of social norms and the basic rights of others including aggression to people and animals, destruction of property, deceitfulness or theft, and serious violations of rules. Both disorders can onset either during childhood or adolescence (Moffitt & Caspi, 2001; Nock, Kazdin, Hiripi, & Kessler, 2007). A meta-analysis of prevalence rates found an average prevalence for CD among children of 3.2% and 3.3% for ODD (Canino, Polanczyk, Bauermeister, Rohde, & Frick, 2010). The National Comorbidity Survey Replication found that 10.2% of people would be diagnosed with ODD at some point in their lifetime (Nock et al., 2007).

It is easy to see how both of these conditions can cause significant problems for both the children themselves as well as their parents and teachers. Childhood ODD symptoms predicted difficulties with peers, parents, and romantic relationships at age 24, while CD symptoms predicted problems in the work place, lower academic attainment, and violent injuries (Burke, Rowe, & Boylan, 2014).

Anxiety disorders are a class of disorders characterized by fear and/or anxiety that exists out of proportion to their real world causes. Anxiety disorders described in the DSM-5 that are

frequently seen in children and adolescents include separation anxiety disorder, where symptoms are prompted by separation from a parent or other individual, specific phobia, characterized by intense fear of a specific object or situation, and social anxiety disorder, in which symptoms surround social situations or interactions involving possible judgement by others (American Psychiatric Association, 2013). Estimates for the prevalence of anxiety disorders in children vary widely and are not regularly collected by existing surveillance systems, although they are believed to be one of the most common classes among children and adolescents (Cartwright-Hatton, McNicol, & Doubleday, 2006; Perou et al., 2013). Separation anxiety disorder in particular was found to be the most common anxiety disorder in pre-adolescent children (Cartwright-Hatton et al., 2006). Prevalence rates of anxiety disorders increase with age reaching a lifetime prevalence of 31.9% in adolescence (Merikangas et al., 2010a).

Elimination disorders such as enuresis, a repeated pattern of urinating inappropriately in clothing or bed, and encopresis, a similar problem with appropriate defecation, are also very common among children. A nationally representative study of children 8 to 11 years old in the United States estimated the 12-month prevalence of enuresis to be 4.45% with a higher rate among boys (6.21%) than among girls (2.51%) (Shreeram, He, Kalaydjian, Brothers, & Merikangas, 2009). A study from Germany found that the prevalence was even higher (9.1%) among preschool aged children (Niemczyk, Equit, Braun-Bither, Klein, & von Gontard, 2015).

Substance use and substance use disorders are more common in adolescence than in childhood. Recent data from the 2014 National Survey on Drug Use and Health (NSDUH) found that 5.0% of adolescents reported a substance use disorder involving either alcohol or illicit drugs, of which 3.5% of adolescents reported a substance use disorder involving illicit drugs and 2.7% involving alcohol (SAMHSA, 2014). The most common illicit drug in adolescent substance use disorders was marijuana (2.7% of adolescents) with nonmedical use of prescription pain relievers

(0.7%) being the second most common (SAMHSA, 2014). Although it is difficult to find accurate estimates of substance use disorders among preadolescent children, there is evidence to suggest that some adolescents begin using substances before the age of 12 and that earlier age of onset is associated with a greater probability of developing a disorder later in life (Mason, 2004; Sung, Erkanli, Angold, & Costello, 2004).

This list is by no means a comprehensive inventory of the wide variety of mental and substance use disorders experienced by children and adolescents. It is also important to note that even though these disorders are viewed as separate classes, there is significant comorbidity between them with 40% of those diagnoses with one class of disorders also meeting the diagnostic criteria for another (Merikangas et al., 2010a). Additionally, even when mental, emotional, and behavioral problems fail to meet diagnostic thresholds for specific disorders, they can still be associated with considerable impairment (Roberts, Fisher, Turner, & Tang, 2015).

### 1.1.3 The Significance of Behavioral Health in Children and Adolescents:

In addition to being highly prevalent, mental illness in childhood and adolescence is associated with significant morbidity and mortality. Suicide, or death by intentional self-harm, is probably the most visible consequence of mental illness and is itself identified as a target for Healthy People 2020. In 2013, 41,149 Americans took their own lives making it the tenth leading cause of death overall (Heron, 2016). The incidence of suicide is even higher among older children and adolescents as it was the cause of 13.3% of all deaths for Americans aged 10-14 and 18.4% for those 15-19 making it the 3<sup>rd</sup> and 2<sup>nd</sup> most common cause for those age groups (Heron, 2016). This is not a new phenomenon. Suicide has consistently been one of the three leading causes of death among people aged 10 - 24 in the United States since 1999 (CDC, 2013).

Suicide has a long and complex risk profile, however, an international study found that, excluding China, India, and Taiwan, 84.5% of global suicide cases were attributable to mental health or substance use disorders (Ferrari et al., 2014). In the United States, the overwhelming majority of adolescents who reported experiencing suicide ideation and attempts during their lifetime met the criteria for at least 1 diagnosable mental illness (Nock et al., 2013). There is also evidence to suggest that substance use disorders play a role in suicide behavior among adolescents. Findings from the Youth Risk Behavior Survey found that high-school aged substance users had a significantly greater risk of suicidal ideation, plan, attempt, and attempt severity (Wong, Zhou, Goebert, & Hishinuma, 2013).

Suicide, as a cause of death for children younger than 12 years old, is approximately 50 times less common than among older children and adolescents, and less than 1% of adolescents reported the onset of suicidal ideation, planning, or attempts before that age (Bridge et al., 2015; Nock et al., 2013). Despite this, many of the disorders that are most closely associated with suicidal behavior often present during childhood (Nock et al., 2013; Wyman, 2014). Furthermore, a systematic review of the literature found that a previous suicide attempt was the greatest single predictor of a repeat attempt and one of the strongest predictors for suicide completion (Beghi, Rosenbaum, Cerri, & Cornaggia, 2013). Research suggests that exposure to an attempted or completed suicide by a family member or peer is in itself a significant predictor of suicide, so there may be an indirect population level benefit of individual level suicide prevention strategies (Nanayakkara, Misch, Chang, & Henry, 2013). For these and other reasons, intervention during childhood years, prior to the onset of suicide attempts for most, has been identified as a crucial target for suicide prevention (Wyman, 2014).

Though rightfully alarming, the suicide rates alone do not reflect the full burden of suffering and disability that can result from living with mental illness. When measured in

disability-adjusted life years (DALYs), a unit which describes both years lost to death and the lost value of the years lived with disability, psychiatric conditions are responsible for 50% of all DALYs in the developed world and make up 9 of the 10 leading specific causes of DALYs (Costello, Egger, & Angold, 2005). A more recent study found that children and adolescents with symptoms of depression and anxiety also reported significantly lower quality of life (Stevanovic, 2013). Although they may seem less severe by comparison, elimination disorders can be extremely stigmatizing for children, have been associated with decreased self-esteem, and can interfere with social functions such as camps and sleep-overs (Caldwell, Deshpande, & Von Gontard, 2013). Even when mental illness fails to meet diagnostic criteria in childhood or adolescence, many forms of adult mental illness will begin to develop and show symptoms during youth or childhood (Kessler et al., 2005).

One of the primary developmental tasks of childhood and adolescence is acquiring the social skills and formal education necessary for a successful adult life. A systematic review found that for many children and adolescents, mental illness has a strong negative effect on school performance and success, including increased rates of truancy and drop-out (DeSocio & Hootman, 2004). This can lead to significant long term consequences as high school dropouts are more likely than their peers to experience unemployment, poverty, participation in crime and other negative outcomes than their peers (De Witte, Cabus, Thyssen, Groot, & van den Brink, 2013). It is not surprising then that childhood mental illness can have significant negative outcomes on adult mental health, quality of life, employment status, and income (Beecham, 2014). One study estimated that the long-term economic damages of mental disorders in children lead to an average reduction in adult income of \$10,400, which they calculated to compound over the course of a lifetime to around \$300,000 (Smith & Smith, 2010).

Behavioral health issues in children and adolescents not only have a detrimental effect on the individual, but also have profound impacts for their families and society as a whole. Parents of children with mental illness were found to have significant out of pocket financial costs, were more likely to cut hours from employment, spend more time arranging care for their children (Busch & Barry, 2007). Caregivers of children with mental illness also experience considerable emotional distress of their own (Richardson, Cobham, McDermott, & Murray, 2013).

When outpatient services are insufficient, especially for those with particularly severe or acute conditions, more intensive residential or inpatient hospital care is necessary (Lamb, 2009). Mental health conditions was primary reason for hospitalizations of children and adolescents 10 years and older and these hospitalizations had a direct cost of \$11.6 billion dollars between 2006 and 2011, half of which was paid from public funds through Medicaid (Friedman et al., 2011; Torio, Encinosa, Berdahl, McCormick, & Simpson, 2015). In the United States, childhood ADHD alone is estimated to cost between \$71 billion and \$115 billion a year (Doshi et al., 2012). Altogether, the yearly national cost of childhood mental health conditions is around \$247 billion (Perou et al., 2013).

Unfortunately, for many individuals treatment does not lead to complete remission and, even with treatment, mental and substance use disorders can have a significant impact on their and their families' lives. Despite this, there is evidence to suggest that early behavioral health services for children leads to a significant reduction in problem behavior later in life (Thompson, 2009). A systematic review has found that treatment for ADHD improved long-term outcomes significantly over non-treated peers, however, this improvement was not sufficient to normalize them to the levels of non-ADHD controls (Shaw et al., 2012). Similarly, follow-ups of three studies of cognitive behavior therapy, medical, and/or combination treatment for childhood anxiety 6 to 19 years after the initial treatment found successful treatment had a protective effect against

suicidality, some, but not all, anxiety disorders, SUDs in young adulthood (Benjamin, Harrison, Settapani, Brodman, & Kendall, 2013; Ginsburg et al., 2014; Puleo, Conner, Benjamin, & Kendall, 2011; Wolk, Kendall, & Beidas, 2015). Additionally, meta-analysis has found that a wide range of treatments for adolescent substance use disorders are effective in reducing problematic use (Tanner-Smith, Wilson, & Lipsey, 2013).

Donald Berwick of the Institute for Healthcare Improvement identified three separate but interdependent aims for the U.S. health care system: improving the health of the population, reducing the per capita cost of care, and improving the experience of care for patients and their families (Berwick, Nolan, & Whittington, 2008). It is abundantly clear that mental and substance use disorders among children and adolescents not only impose a significant burden upon the population's health, but also come at a large economic cost to the system. What's more, there is also evidence that the care many children and adolescents receive, or lack thereof, is insufficient to meet their behavioral health needs.

## **1.2 Behavioral Health Care:**

### **1.2.1 Behavioral Health Care Use and Access:**

There is significant evidence to suggest that many children and adolescents with mental health or behavioral concerns are not receiving the care they need, an issue also known as access to care. Some estimates of the proportion of children and adolescents who are not receiving recommended mental health services are as high as 80% (Anderson & Gittler, 2005; Ngui & Flores, 2007). A recent study found that 46.6% of school aged children with emotional or behavioral difficulties were not receiving any medication or psychosocial services at all (Simon, Pastor, Reuben, Huang, & Goldstrom, 2015). Another study found that only 26% of children who were diagnosed with ADHD by a PCP ended up seeing a behavioral health provider within 6 months of



diagnosis (Gardner, Kelleher, Pajer, & Campo, 2004). The unmet need is also observed by primary care providers, two thirds of whom reported that they were unable to access outpatient mental health services for their patients (Cunningham, 2009). Substance use treatment utilization was also low with data from the National Survey on Drug Use and Health showing that only 1.4% of adolescent substance users and 11.4% of adolescents with a SUD reporting receiving treatment (Haughwout, Harford, Castle, & Grant, 2016).

There are also significant disparities in access to behavioral health care. Nationally, the rates of behavioral health service use are not uniform across gender and race. In 2010-2012, almost twice the proportion (16.1% vs 9.8%) of white children and adolescents used outpatient mental health services as that of their nonwhite peers (Olfson et al., 2015). Similarly, males were considerably more likely to use these services (16.1% vs 10.4%) than were females (Olfson et al., 2015). Unmet need has also been found to be elevated among racial and ethnic minorities (Kataoka, Zhang, & Wells, 2002). Disparities in mental health care and access have also been documented in females, families of low socioeconomic status, the uninsured, individuals in foster care or the judicial system, and lesbian, gay, bisexual, and/or transgender individuals (Bringewatt & Gershoff, 2010; Bussing, Zima, Perwien, Belin, & Widawski, 1998; Costello et al., 2005; Kataoka et al., 2002; Marshal et al., 2011; Reiss, 2013). Racial, ethnic, and gender disparities were also found in substance use treatment for adolescents (Haughwout et al., 2016). Much of the unmet need can be explained by a large number of barriers that stand in the way of care.

### 1.2.2 Barriers to Behavioral Health Care Services:

One significant contributor to the problem of unmet need for behavioral health services is a lack of providers (Bringewatt & Gershoff, 2010; Browne, Cashin, Graham, & Shaw, 2013; Caccavale, Reeves, & Wiggins, 2012; Goldman, 2014; Krisberg, 2015; C. R. Thomas & Holzer, 2006).

One study found a severe shortage of behavioral health providers in 77% of U.S. counties (Thomas, Ellis, Konrad, Holzer, & Morrissey, 2009). This workforce shortage is especially true in Nebraska where 79 of Nebraska's 93 counties were designated as shortage areas including the majority of rural counties, all of the state's frontier counties (counties with fewer than 7 persons/square mile), and 73 counties with unusually high need for mental health services (Watanabe-Galloway, Trout, Deras, Naveed, & Chen, 2015). Some authors have suggested that other problems in mental health delivery may play as large a role as the workforce shortage (Madge, Foreman, & Baksh, 2008; Staller, 2008). A study using qualitative interviews found that even when providers are available, parents expressed difficulty accessing services and experienced problems negotiating with multiple providers (Cohen, Calderon, Salinas, SenGupta, & Reiter, 2012).

Existing studies have identified barriers to behavioral health services for children and adolescents at multiple levels. Micro-level barriers to access include factors such as concerns about confidentiality, perceptions of stigma (both towards the child and parent), desire for self-reliance, perceived unacceptability or irrelevance of treatment, fear of judgement, lack of knowledge regarding treatment, and comorbidity with multiple disorders (Becker, Swenson, Esposito-Smythers, Cataldo, & Spirito, 2014; Bringewatt & Gershoff, 2010; Corkum, Bessey, McGonnell, & Dorbeck, 2015; Dempster, Davis, Jones, Keating, & Wildman, 2015; Fikretoglu & Liu, 2015; Mojtabai et al., 2011; Stevens, Kelleher, Ward-Estes, & Hayes, 2006; Williams & Chapman, 2011). Other micro-level barriers involve inadequate time and effort, difficulties with logistics (including transportation), as well as issues with insurance coverage or other financial barriers (Becker et al., 2014; Bringewatt & Gershoff, 2010; Gulliver, Griffiths, & Christensen, 2010).

At the interpersonal meso-level, barriers include lack of family support, poor quality relationships with providers, lack of interdisciplinary connection, and a lack of communication

between parents, children, and providers (Baker-Ericzén, Jenkins, & Haine-Schlagel, 2013; Bringewatt & Gershoff, 2010; Forness, 2003; Gulliver et al., 2010; Stevens et al., 2006). Macro-level organizational factors include lack of collaboration between the government agencies and the healthcare systems as well as a lack of systematic support for behavioral health (Friedman, Reifel, Reed, & Cloud, 2014; Gulliver et al., 2010). While few studies looked at facilitators rather than barriers, those they did were primarily positive versions of previously identified barriers and included positive past experience, social support, confidentiality and trust, and positive relationships with staff (Gulliver et al., 2010).

There is some evidence to suggest that these barriers may be experienced differently by disparate populations. Fear of judgement and a perceived lack of confidentiality were especially large barriers for sexual minority youth (Williams & Chapman, 2011). Latinos perceive greater stigma related to mental illness and seeking behavioral health services (Interian et al., 2010). See Table 1 for a summary of barriers.

Table 1: Barriers to behavioral health care for children and implementation of integrated primary care models.

	Barriers to Behavioral Health Care	Barriers to IPC Implementation
<b>Macro-Level:</b>		
<b>Public Policy</b>	<ul style="list-style-type: none"> <li>• Inadequate insurance coverage</li> </ul>	<ul style="list-style-type: none"> <li>• Coverage for behavioral health</li> </ul>
<b>Environmental factors</b>	<ul style="list-style-type: none"> <li>• Logistical difficulties:               <ul style="list-style-type: none"> <li>○ Distance from care</li> <li>○ Transportation</li> </ul> </li> </ul>	
<b>Organizational factors</b>	<ul style="list-style-type: none"> <li>• Lack of coordination between agencies*</li> <li>• Lack of systematic support</li> </ul>	<ul style="list-style-type: none"> <li>• Separate billing and compensation systems</li> </ul>
<b>Meso-Level:</b>		
<b>Interpersonal relationships among families and providers</b>	<ul style="list-style-type: none"> <li>• Poor quality relationships with providers*</li> <li>• Lack of interdisciplinary connection*</li> <li>• Poor quality communication between:*</li> <li style="padding-left: 20px;">○ Parents</li> <li style="padding-left: 20px;">○ Providers</li> <li style="padding-left: 20px;">○ Children</li> <li>• Lack of family support</li> <li>• Lack of trust*</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived loss of control*</li> <li>• Fragmentation of care*</li> <li>• Lack of understanding and respect between providers*</li> <li>• Role confusion*</li> </ul>
<b>Micro-Level:</b>		
<b>Individual / family characteristics</b>	<ul style="list-style-type: none"> <li>• Concerns about confidentiality</li> <li>• Fear of stigma</li> <li>• Inadequate insurance coverage</li> <li>• Lack of knowledge</li> <li>• Comorbidity</li> <li>• Problem severity</li> <li>• Desire for self-reliance</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient provider education:               <ul style="list-style-type: none"> <li>○ Inter-professionalism</li> <li>○ Integration specific training</li> </ul> </li> </ul>

\* These items are directly related to aspects of relational coordination.

### 1.2.3 Differences in Behavioral Health Services in Urban and Rural Communities:

Despite a global trend of migration towards the metropolitan areas, a significant minority of Americans live in rural areas. According to the US Census Department, 19.3% of the US population and 26.9% of Nebraskans lived in rural areas (U.S. Census Bureau, 2013). Descriptions of the life in rural settings are made more difficult by their heterogeneity and the wide variety of different definitions and measurements of rurality (Coburn et al., 2007). Despite these differences in definitions, a systematic review of the literature found that there are significant

barriers to health care in rural communities due to cultural perceptions, difficulties with distance and transportation, scarcity of appropriate services, heightened financial burden, and poverty (Douthit, Kiv, Dwolatzky, & Biswas, 2015).

Evidence suggests that children and adolescents in the rural United States have a similar prevalence of behavioral health issues as those in urban settings and thereby an equal need for mental health services (Breslau, Marshall, Pincus, & Brown, 2014; Howell & McFeeters, 2008; Polaha, Dalton, & Allen, 2011). However, the number of available providers in rural areas are often insufficient to meet this need (Anderson & Gittler, 2005; Thomas, 2012). This is complicated by cultural factors specific to rural communities. A systematic review found that rural populations were more likely to privilege self-sufficiency and less likely to consider behavioral domains of health (Gessert et al., 2015). This is also true for adults. A study of mental health in adults found that rural adults were less likely to receive office based mental health services and yet more likely to be on psychoactive medications (Ziller, Anderson, & Coburn, 2010). A study from rural Australia found that the lack of services was especially true for patients with less severe mental health problems (Lockhart, 2006). Rural PCPs are also in short supply. One study found as many as 85% of U.S. rural counties had shortages of primary care providers (Doescher, Fordyce, Skillman, Jackson, & Rosenblatt, 2009).

### **1.3 The Behavioral Healthcare Team:**

Evidence-based treatment for childhood mental illnesses involves multiple strategies and many stakeholders. Treatment for common childhood disorders include pharmacological, psychosocial, or combined interventions (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001). There is significant evidence to suggest that combinations of pharmacological and psychosocial therapies are superior to monotherapy in treating, anxiety disorders, social phobias,

treatment resistant enuresis, and depression, as well as in improving functional domains of ADHD other than, but not including, the core symptoms which respond equally to pharmacological treatment alone (Caldwell et al., 2013; Jensen et al., 2001; Walkup et al., 2008; Zuckerbrot, Cheung, Jensen, Stein, & Laraque, 2007). Therefore, the behavioral healthcare team must include those with the capacity to diagnose and assess, prescribe medication, and provide therapy. However, these capacities can be met by a wide range of different providers and disciplines. The optimal identification and management of children's behavioral health will require cooperation across an interdisciplinary, multidisciplinary, and/or transdisciplinary team of providers. All of these providers, and other stakeholders, together make up what we will call the behavioral healthcare team (BHCT).

A report from the Congressional Research Service suggests that while the mental health workforce is often discussed in the literature, there is no unified consensus for which providers should be included as mental health providers (Heisler & Bagalman, 2015). However, for older adults the Institute of Medicine broadly defines the mental health and substance use work force as "including primary care physicians, nurses, physician assistants, peer support specialists, and family caregivers" (Eden, Maslow, Le, Blazer, 2012). Another perspective breaks the collaborative behavioral health care team into three core categories: primary care providers, behavioral health providers, and psychiatric consultants (Raney, 2015). These categorizations share the importance of a multidisciplinary team involving primary care, behavioral health, and specialized psychiatric care. However, other individuals such as schools and parents are also involved.

#### 1.3.1 Specialized Behavioral Health Providers:

The Substance Abuse and Mental Health Services Administration includes psychiatrists, psychologists, clinical social workers, psychiatric nurses, substance abuse counselors, counselors,

and marriage and family therapists in their definition of behavioral health providers (Substance Abuse and Mental Health Services Administration, 2013). The Nebraska Behavioral Health Workforce Report (where the present study is situated) includes the following providers as BHPs: psychiatrists, psychologists, advanced practice registered nurses (APRNs), physician assistants (PAs), licensed independent mental health practitioners (LIMHPs), licensed mental health practitioners (LMHPs), and addiction counselors (Watanabe-Galloway et al., 2015). The five different types of mental health providers (psychiatrists, clinical social workers, clinical psychologists, marriage and family therapists, and APRNs) all involve the diagnosis of mental disorders and the provision of psychosocial treatment (Heisler & Bagalman, 2015).

Psychiatry is a branch of medicine that focuses on mental and behavioral issues. Psychiatrists are physicians who receive specific residency training in mental health after receiving either a doctorate of medicine (MD), from an allopathic medical school, or a doctorate of osteopathic medicine (DO) from an osteopathic medical school (Ramos, Cuoco, Guercio, & Levitan, 2016). However there is significant overlap in scope of practice between psychiatrists and other mental health or primary care providers (McCall, 2015). Additionally, non-physician providers such as advanced practice psychiatric nurse practitioners may fill this role as well (Bjorklund, 2003). There is evidence that physician assistants and nurse practitioners are practicing psychiatric care in Nebraska (Nguyen et al., 2016). Psychiatrists, psychiatric PAs, and psychiatric NPs are the only members of the 5 mental health providers that can typically prescribe medication (Heisler & Bagalman, 2015). Although psychiatrists are rarely directly involved in formal consultation or joint care appointments, they play an important role in collaborative care models by supporting PCPs and other BHPs for patients that do not respond to standard care (Raney, 2015). Psychiatrists are also well suited to fill an educational or leadership role in collaborative care among other providers (Raney, 2015). Although some psychiatrists may be

uncomfortable in providing indirect support and may be concerned about potential liability in the care of patients whom they have not personally interviewed, they are an important part of an integrated behavioral health care team for many patients (Raney, 2015).

Psychology derives from an academic scientific tradition and involves many different specialties, only some of which involve clinical patient care (Duffy et al., 2002). Psychologists are educated at the doctoral level and receive either a PhD, which tends to involve a greater focus on research and is more likely to involve a cognitive-behavioral theoretical orientation, or a PsyD, involving a more specific focus on clinical practice and often draws more from the psychodynamic tradition, although there is a large degree of heterogeneity across programs within both degrees in terms of training and philosophy (Norcross, Castle, Sayette, & Mayne, 2004; Sayette, Norcross, & Dimoff, 2011). The role of the clinical psychologist generally includes both administering and interpreting psychological tests as well as counseling (Amend & Peters, 2015; Heisler & Bagalman, 2015). Licensure in clinical psychology requires a substantial amount of supervised clinical practice although the exact training requirements and scope of practice are specific to each state and researchers have identified many difficulties in attempting to summarize these differences (Herman, 2013). Some states have begun to allow psychologists the ability to prescribe medications; however, this is still under considerable debate (Johnson, 2009).

Marriage and Family Therapists (MFTs) include providers at both the masters and doctoral level and often requires 2 years of post-degree clinical training (Heisler & Bagalman, 2015). Marriage and family therapy is theoretically based on understanding the interactions between family members and changing these interactions to improve health (Sexton & Datchi, 2014). While marriage and family therapy originally arose from a need to address marital conflict in the 1930s, it currently is applied to a wide spectrum of issues (Duffy et al., 2002).



Social work as a profession arose in the late 19<sup>th</sup> century in order to help people meet their needs and achieve well-being with a particular focus on understanding an individual's well-being in the context of the larger society (Duffy et al., 2002). While social workers are able to provide therapy and counseling, they also are involved in other roles such as case management, patient advocacy, and connecting people to resources (Duffy et al., 2002). Social work is also defined by a focus on social justice as a central organizing principle (Marsh, 2005). Clinical social workers generally require a master level degree as well two years of supervised post-degree clinical experience (Heisler & Bagalman, 2015).

Counseling includes a wide range of different disciplines and professions all defined by “a professional relationship that empowers diverse individuals, families, and groups to accomplish mental health, wellness, education, and career goals” (Kaplan, Tarvydas, & Gladding, 2014). Counselors are generally educated at the master level although some counselors may have doctorates (Duffy et al., 2002). Although all of the above described behavioral health specialists practice some kind of counseling, a lack of a clearly unified counselor identity has been identified (Reiner, Dobmeier, & Hernández, 2013). The definitions of a licensed mental health practitioner (LMHP) and licensed independent mental health practitioner (LIMHP) are defined by the Nebraska Department of Health and Human Services Regulation and Licensure with the primary difference being that an LMHP requires supervision of a physician or licensed psychologist whereas an LIMHP does not (172 NAC 94) . LMHP and LIMHPs can come from any of the disciplines discussed above.

It is important to note that these definitions and distinctions come from professional organizational positions and legal regulations. This does not necessarily reflect the way that they are categorized and perceived by the providers themselves, those they work with, or the patients and families that they care for. Further, a large degree of behavioral health services are provided within primary care.

### 1.3.2 Primary Care Providers:

The Institute of Medicine defines primary care as “the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community” (Vanselow, Donaldson, & Yordy, 1995). Previous research has defined primary care providers as physicians who are engaged in direct patient care with a specialty of family medicine, general practice, general internal medicine, general pediatrics, or geriatrics (Petterson et al., 2012). Primary care for children and adolescents are likely to include specialties of general pediatrics and family medicine which specifically cater to either young people or providing care across the entire lifespan. Additionally, there is evidence to suggest that primary care for many Americans is provided by physician assistants and nurse practitioners (Morgan, Strand, Østbye, & Albanese, 2007).

Primary Care Providers (PCPs) are often involved at the front line in the provision of mental health services and serve as gatekeepers to specialized care. More than 80% of pediatricians feel that they should be responsible for identification of mental health problems and roughly the same feel responsible for providing referrals (Stein et al., 2008). The majority (63.5%) of family practice physicians felt that they had a significant role in the management of psychosocial issues in children (Miller, Johnston, Klassen, Fine, & Papsdorf, 2005). While parents vary in their expectations of PCPs to pay attention to behavioral health, they generally responded positively to it (Larson et al., 2015). Pediatricians may be providing psychosocial therapy without being aware of it (J. Larson, Mitchell, & Lynch, 2013). PCPs have also been identified as particularly important in the delivery mental health access for Hispanic children (Brown, Wissow, Zachary, & Cook, 2007).

### 1.3.3 Patients and Families:

Patient and family centeredness is widely recognized as an important part of health care in general and significant evidence supports the inclusion of patients and families as empowered members of the care team (Committee on Hospital Care and Institute for Patient- and Family-Centered Care, 2012; Kuo et al., 2012). There is also evidence to support the inclusion of parents and families in the behavioral health team for children. Involving parents and families in care has been shown to be directly associated to the effectiveness of the treatment of disruptive behavior, body dysmorphia and eating disorders, problematic social behaviors, and PTSD in addition to indirectly improving children's adherence to pharmacological interventions (Abrahamse, Junger, Wouwe, Boer, & Lindauer, 2015; Cobham et al., 2012; Dean, Wragg, Draper, & McDermott, 2011; Hart, Cornell, Damiano, & Paxton, 2015; Robl, Jewell, & Kanotra, 2012). Parents are also important gatekeepers for children, and parental perceptions of disease severity and their attitudes and opinions towards behavioral health are strong determinants of access to care (Corkum et al., 2015). Parental perceptions of intangible barriers such as understanding treatment were directly associated with attendance at behavioral health appointments (Larson, Stewart, Kushner, Frosch, & Solomon, 2013).

### 1.3.4 School Personnel:

Schools and their personnel also play an important role in the behavioral health of children (Hoagwood et al., 2001). A study of the National Survey on Drug Use and Health found that adolescents were more likely to have received school-based mental health services in the last year than they were at outpatient mental health clinics or inpatient hospitals (Ringeisen et al., 2016). However, the rate of school-based services fell to the level of outpatient clinics by the age of 17 and this study did not include primary care settings in comparison. Another study found

that although the services available differ greatly between schools, schools are particularly important in access to care for adolescents with less severe mental or behavioral concerns (Green et al., 2013). Mental health service based in schools have been shown to be effective (Albright et al., 2013). In addition to PCPs or BHPs located in a school setting, teachers may be an important part of the Behavioral Health Team as a systematic review found that teachers are an important component in more than half of all school based mental health interventions (Franklin, Kim, Ryan, Kelly, & Montgomery, 2012).

While all of these roles have been identified in the literature as potential components of the behavioral health workforce, it is yet unknown the extent to which they are incorporated into practicing behavioral health care teams. Further, there is little evidence as to whether these definitions of the roles are reflected in the experiences of providers in day-to-day practice. Further, as every individual, family, and community are unique, the makeup of individual Behavioral Health Care Team for any specific child will likely vary as well. Understanding how these various roles work together, or not, will play an important part in improving care.

#### **1.4 Integration of Behavioral Health into Primary Care:**

##### **1.4.1 The Primary Care Provider in Behavioral Health:**

Due to the large degree of unmet need in many areas and a multiplicity of complex barriers, often the bulk of responsibility to provide for the behavioral health of children falls on primary care. However, the role of PCPs in providing mental health services can be problematic because evidence suggests that many PCPs both nationally and within Nebraska do not feel able to meet the mental health needs of their patients or that they have sufficient training in mental health issues (Heneghan et al., 2008; Nasir, Watanabe-Galloway, & DiRenzo-Coffey, 2014). This lack of self-efficacy and training is reflected in the decreased sensitivity of PCPs in recognizing

childhood emotional and behavioral problems when compared to trained psychologists (Lavigne et al., 1993). The overwhelming majority of pediatric PCPs report providing nonmedical interventions for their patients with behavioral health concerns, but many did not feel that this was their responsibility, and their comfort in diagnosis and treatment varied significantly based on the specific disorder (Stein et al., 2008; J. Williams, Klinepeter, Palmes, Pulley, & Foy, 2004).

Mental, emotional and behavioral complaints can also be especially financially costly for PCPs. One study found that visits for behavioral complaints took pediatricians almost 20 minutes to complete, more than twice the 8 minutes required for visits for solely medical complaints (Meadows, Valleley, Haack, Thorson, & Evans, 2011). This same study found that despite the increased demand on their time, PCPs were able to bill fewer codes for behavioral health concerns and therefore received less reimbursement (Meadows et al., 2011). The integration of behavioral health services into a primary care setting has been proposed as one strategy to deal with these difficulties.

#### 1.4.2 Defining Integration:

There have been many calls for the collaboration and integration of behavioral health services into a primary care setting, a system known as Integrated Primary Care (IPC), in order to improve the quality of and access to behavioral health care (Blount & Miller, 2009; Pruitt, 1998; Thielke, Vannoy, & Unützer, 2007). However, while there are many existing theoretical frameworks for such coordination, collaboration, and integration, there is really no unified definition (Blount, 2003). The difficulty in defining integrated care is not only limited to providers, but is also true among patients. One study found that although patients are often confused by the specific term, they tend to describe the process itself similarly to the existing frameworks described above including coordination within and across teams, familiarity with the patient over

time, patient centered care, and shared responsibility between providers and patients (Walker et al., 2013). Butler et al. (2008) suggests that despite the large number of definitions, they all seem to refer to the requirement of communication or coordination between different disciplines and providers to meet the needs of their patients.

One of the first conceptual models to attempt to define distinct levels of collaboration and integration between mental health services and primary care was proposed by Doherty, McDaniel, and Baird (1996). This model suggested 5 different levels:

- 1) Minimal collaboration – BHPs and PCPs operate in separate facilities, using separate systems, and rarely communicate.
- 2) Basic collaboration at a distance – Providers still have separate facilities, separate systems, and operate in their own worlds, but there is periodic communication about shared patients for specific issues. There is only minimal sharing of power or responsibility.
- 3) Basic collaboration on-site – Providers share a facility but still use separate systems. There is regular communication about shared patients, occasionally face to face. Physicians still have considerably more power in decision making.
- 4) Close collaboration in a partly integrated system – Providers use the same facilities and use some systems in common for purposes such as scheduling and charting. There is regular face to face interactions about patients, mutual consultation, and coordinated treatment plans. There is still some level of inequality of power.
- 5) Close collaboration in a fully integrated system – Providers share a site, systems, and vision. There are regular collaborative team meetings to discuss both patient issues and team collaboration. Providers make a conscious effort to balance power and influence.

A recent systematic review by Martin, White, Hodgson, Lamson & Irons (2014) on IPC programs review described the collaboration practices, program models and settings, types of behavioral interventions, training, and providers. Of the 76 eligible studies less than half, 30 (39.5%), were based upon a theoretical model or established treatment guideline. Among these 30 studies, a total of 16 different models or guidelines were reported. Another interesting finding was that only 36 studies (47.3%) described any communication between the providers, 12 (15.7%) reported a shared decision making process, 9 (11.8%) reported verbal communication, and very few (4 and 3 studies respectively) reported warm handoffs or joint sessions involving patients, BHP, and PCPs together. The most commonly reported behavioral health interventions were psychotherapy (60.5%), care management (60.5%), psychoeducation (56.5%), and psychotropic medication (56.5%). However, the review did not describe the proportion of studies reporting combinations of these interventions. The majority of studies (60%) reported behavioral health training or supervision, 34% reported training for BHPs and 25% for PCPs. There was also a wide range of different types of BHPs reported including nurses, psychiatrists, psychologists, social workers, master's level counselors, and psychotherapists (32.8%, 32.8%, 27.6%, 15.7%, 5.26%, and 5.26% respectively.) Although this review provides excellent data on the state of IPC implementation in general, it does not specifically address a pediatric population and only 8% of the studies included reported settings in rural communities.

Identifying the need for standard language to describe the wide range of processes described, the Substance Abuse and Mental Health Service Administration (SAMHSA) has adopted a standard framework for integrated healthcare (Heath, Wise Romero, & Reynolds, 2013). A summary of this framework is presented in Table 2.

Table 2: Summary of SAMHSA Standardized Framework for Levels of Integrated Healthcare

	Coordinated Care		Collaborative Care		Integrated Care	
	Level 1: Minimal Collaboration	Level 2: Basic Collaboration at a Distance	Level 3: Basic Collaboration Onsite	Level 4: Close Collaboration Onsite with Some System Integration	Level 5: Close Collaboration Approaching an Integrated Practice	Level 6: Full Collaboration in a Transformed / Merged Integrated Practice
<b>Co-Location</b>	Separate facilities	Separate facilities	Same facility, not necessarily same offices	Same space within same facility	Some shared space within the same facility	Completely shared space
<b>Integrated Systems</b>	Separate systems	Separate systems	Separate systems	Some shared systems	Mostly shared systems and seek system solutions together	Complete system integration
<b>Communication and Collaboration</b>	Rarely communicate except when necessary	Communicate periodically about shared patients	Regular phone or e-mail communication collaborate to improve referrals	Communicate in person coordinate and consult for difficult patients	Collaborate to be part of a care team	Collaborate with a shared concept of team care
<b>Team Meetings</b>	May never meet in person	May meet as part of larger community	Meet occasionally to discuss cases	Regular face-to-face interactions about some shared patients	Regular team meetings	Formal and informal meetings
<b>Roles</b>	Limited Understanding of Each Other's Roles	Value each other as resources	Feel vaguely part of a team	Basic understanding of roles and culture	Deeper understanding	Roles and cultures blur or bend

Adapted and summarized from a larger table appearing in (Heath, Wise Romero, & Reynolds, 2013b).



### 1.4.3 Benefits of Integration:

Despite the considerable differences in definitions, theoretical models, and implementations, there is compelling evidence to suggest that IPC can improve outcomes for patients. A systematic meta-analysis found that integrated medical-behavioral care for children and adolescents are associated with improved outcomes across the board when compared to standard primary care, with a randomly selected patient in integrated care having 66% probability of having a better outcome than a peer in standard care (Asarnow, Rozenman, Wiblin, & Zeltzer, 2015). Of all integrated care interventions for pediatric behavioral health, those based on collaborative care were found to have the strongest effect size (Kolko, 2015). Much of the evidence supporting the benefits of collaborative models of care come from the study of specific disorders. Collaborative care has also been found to be effective in adolescents with depression (Asarnow et al., 2009; L. P. Richardson et al., 2014). Primary care based psychosocial interventions have been found to be effective in treating childhood anxiety (Creswell et al., 2010). Patients receiving behavioral health care in a primary care setting were found to have a stronger therapeutic alliance than those in community outpatient psychotherapy (Corso et al., 2012). Previous studies have highlighted the benefits of integrated care in the treatment of adults with substance abuse or depressive disorders (Samet, Friedmann, & Saitz, 2001; Thota et al., 2012). Providers also generally are satisfied with integrated models of care (Farrar, Kates, Crustolo, & Nikolaou, 2001).

IPC has also been found to have benefits in other areas. There is some evidence to suggest that collaborative care can be cost-effective and have some degree of cost offset in the treatment of patients with panic disorder (Katon, Roy-Byrne, Russo, & Cowley, 2002). Integrated care has been shown to help to reduce racial disparities in mental health access among the elderly (Ayalon, Arean, Linkins, Lynch, & Estes, 2007). Some preliminary findings have found that

integrated behavioral health also reduces mental health disparities among Latinos of all ages (Bridges et al., 2014). The benefits of integration are not limited to mental illness, as a study of adults found that a brief psychosocial service in primary care lead to a decrease in medically unexplained physical symptoms (Escobar et al., 2007).

#### 1.4.4 Barriers to Integration:

Despite the benefits of IPC for the behavioral health of children, there remain many difficulties in implementation. A number of authors have highlighted the need to directly address inter-professional and integrated care in provider education and some of them have suggested specific models to improve education in that regard (F. A. Blount & Miller, 2009; Bluestein & Cubic, 2009; Madge et al., 2008; McDaniel, Belar, Schroeder, Hargrove, & Freeman, 2002). Many other barriers have been identified to collaboration between mental health specialists and PCPs including issues with billing and compensation, perceived loss of control and fragmentation of care, insufficient structured time for interprofessional practice, and a lack of respect and understanding between professions (Gask, 2005; Kathol, Butler, McAlpine, & Kane, 2010; Lawn, Lloyd, King, Sweet, & Gum, 2014; Thielke et al., 2007). A qualitative study of providers in co-located pediatric primary care settings found that even when structural policies towards integration are in place, such as a unified protocol to use validated screening instruments, differences in provider understanding and communication can interfere with their ability to use these tools effectively (Hacker et al., 2013). These barriers to integration are presented alongside the barriers to behavioral health care services in general in Table 1.

#### 1.4.5 Differences in Integration between Rural and Urban Settings:

The implementation of co-located BHPs into rural and frontier primary care settings has lagged behind that of urban providers with 22.8% of PCPs in isolated rural settings and 26.5% in

frontier settings being co-located with BHPs compared to 40.2% of PCPs in urban areas (Miller et al., 2014). However, this same study found that when they controlled for the size of clinics, frontier areas had greater odds of co-location than urban areas (Miller et al., 2014). Another finding of the Miller article was that licensed psychologists made up a greater proportion of co-located BHPs in urban co-located clinics than those in rural settings which tended to rely more on masters level BHPs.

Differences between rural and urban communities creates unique challenges for integration. A survey of care coordinators found that while a majority of BHPs in rural or frontier clinics reported integration to be advantageous in meeting the needs of their patients, they reported fewer advantages than their urban peers and felt that their rural setting required significant modification to established integration models and that distance was a particular difficulty in the provision of care (Williams, Eckstrom, Avery, & Unützer, 2015). The same study also found that rural behavioral health clinicians were more likely to report scarcity of community resources, role confusion, and difficulty balancing care coordination with other clinical responsibilities (Williams et al., 2015). Another study found that while the role flexibility and high workload burden typical to rural PCPs made IPC a promising strategy for rural settings, the same factors made it more difficult to implement and sustain (McNeil, Mitchell, & Parker, 2015).

Despite these challenges, there is evidence to support the benefits of IPC for rural populations. Collaborative care in pediatric primary care have been shown to improve attendance in rural communities (Valleley et al., 2007). Previous studies have shown that rural pediatricians were more likely to coordinate care for their patients with mental health illnesses than their suburban or urban counterparts (Pfefferle, Gittel, Hodgkin, & Ritter, 2006). Specific training and support was found to significantly improve rural PCPs ability to implement national treatment guidelines for ADHD (Polaha, Cooper, Meadows, & Kratochvil, 2005). Qualitative research has

suggested that IPC may help to improve job satisfaction among rural PCPs (Austin, 2012). While rural IPC was found to increase the number of behavioral concerns addressed in well patient visits, it was not associated with care-giver ratings of helpfulness or satisfaction (Burt, Garbacz, Kupzyk, Frerichs, & Gathje, 2014). School based mental health programs may be another important tool in rural communities (Albright et al., 2013).

Although the literature on differences in integration between urban and rural communities is rapidly expanding, there remain a number of important gaps to be addressed. The Miller article provided an excellent estimate of the progress of integration, however, it was limited by relying solely on geographic data. Further research is necessary to determine whether or not these geographic findings are reflected in whom providers actually recognize as being part of their team.

#### 1.4.6 Co-Location and Integration:

There is some debate about the relationship between co-location and integration. Many of the frameworks discussed above have argued that co-location is an essential part of integrated care (Craven & Bland, 2006; Doherty, McDaniel, & Baird, 1996; Heath et al., 2013). Butler et al. (2008) even considers co-location, alongside how much of the decision making power is shared between providers, to be one of the two elements on which integration is operationalized. However, another model conceptualizes coordination, co-location, and integration as three independent concepts (Blount, 2003). Blount (2003) describes coordination as referring to the regular exchange of information between providers, co-location merely referring to the shared geographic location, while integration refers to the inclusion of both physical and mental health components within a single treatment plan.

This distinction is supported by research. A qualitative study of IPC providers found that there were three distinct processes of teamwork between the professionals: consulting, coordinating, and collaborating (Cohen et al., 2015). Consultation was when one clinician would seek advice regarding a specific patient, their needs, or their care, coordination was when two or more professionals would provide care to a single patient independently to achieve a common goal, and collaboration involved two or more professionals interacting together with a patient to develop a unified care plan and was most common in patients with novel or complex cases (Cohen et al., 2015). Another study from Australia found that even among co-located providers there remained significant barriers to collaboration (Lawn et al., 2014). Although qualitative studies have identified these barriers, the actual difference in the relationships and communication between co-located providers and off-site providers has not been well quantified.

### **1.5 Relational Coordination:**

As discussed earlier in section 1.4.2, the wide range of definitions for integrated care all refer to the necessity of collaboration and coordination between different disciplines in order to meet the needs of patients and their families (Butler et al., 2008). Based on a study of the factors associated with on-time airline departures, another task requiring considerable coordination and interdependency between a range of different stakeholders, Gittell (2006) found that effective coordination was defined by high-quality communication (that which is frequent, timely, accurate, and focused on problem-solving rather than assigning blame.) While previous organizational theorists have recognized the importance of communication in team processes, Gittell (2006) found that this communication was interdependent on the quality of the relationships between the team members. Gittell (2006) operationalizes these relationships to be based on shared goals, shared knowledge, and mutual respect. This same pattern of interdependent communication and relationships, which was named relational coordination, was

found to be occurring in a study of healthcare teams in hospitals (Gittell et al., 2000). A diagram of relational coordination is shown below in Figure 1.

Figure 1: High and Low Quality Relational Coordination

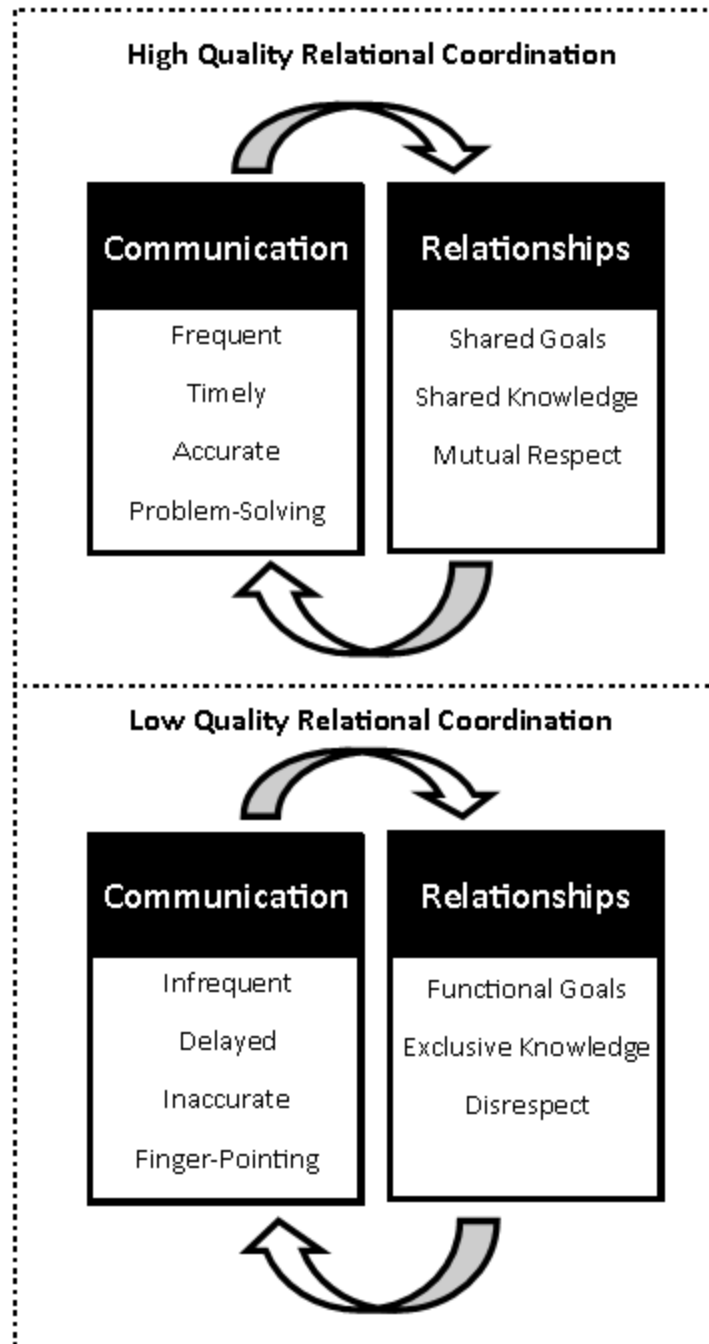


Figure adapted from (Gittell, 2006).

### 1.5.1 Significance of Relational Coordination in Healthcare Teams:

Healthcare teams require significant coordination between members in order to optimally meet the needs of their patients. It is not surprising then that relational coordination between providers has been found to be associated with significant improvements in outcomes in a wide variety of settings. In the initial study of surgical patients, higher levels of relational coordination between providers was found to be associated with improved quality of care, decreased hospital length of stay, and post-operative freedom from pain (Gittell et al., 2000). This finding was replicated in a later study that found increased levels of relational coordination between physicians and nurses was associated with an increased perception of quality inpatient care (Havens, Vasey, Gittell, & Lin, 2010). Similarly, relational coordination was found to improve quality outcomes among nursing home staff (Gittell, Weinberg, Pfefferle, & Bishop, 2008a). Relational coordination among staff at primary care practices was found to be associated with lower rates of foot amputation (Wrobel et al., 2003). Higher levels of relational coordination among providers at integrated maternity and child health clinics in Finland were found to be associated with increased parent satisfaction with provided services (Tuominen, Kaljonen, Ahonen, & Rautava, 2014). Further, a meta-analysis has found that high quality communication between primary care physicians and specialist physicians, including psychiatrists, consistently improved patient outcomes in collaborative care models and suggested that interventions to improve communication between providers are likely worthwhile (Foy et al., 2010).

In addition to patient outcomes, there is evidence to suggest that relational coordination also improves the experience of providers. Relational coordination was found to be associated with social capital among physicians and nurses at outpatient clinics (Lee, 2013). This may be particularly relevant to the integration of behavioral health into primary care as it involves close collaboration and shared decision making power among professions with historically varying

levels of social capital and power. Relational coordination was also found to be associated with employee satisfaction in nursing home staff (Gittell, Weinberg, Pfefferle, & Bishop, 2008). Improving the provider experience can have real implications for clinics and for the healthcare system as a whole. While estimates of the true rate vary, nurse turnover is a real problem with considerable economic costs (Li & Jones, 2013). Provider burn out has been identified as a significant issue for physicians and behavioral health care workers and is contributing to the shortage of an adequate work force (Dewa, Loong, Bonato, Thanh, & Jacobs, 2014; Morse, Salyers, Rollins, Monroe-DeVita, & Pfahler, 2012; Starmer, Frintner, & Freed, 2016). If healthcare integration can improve relational coordination among providers which will in turn improve job satisfaction, then it will be essential to mitigate the workforce shortage.

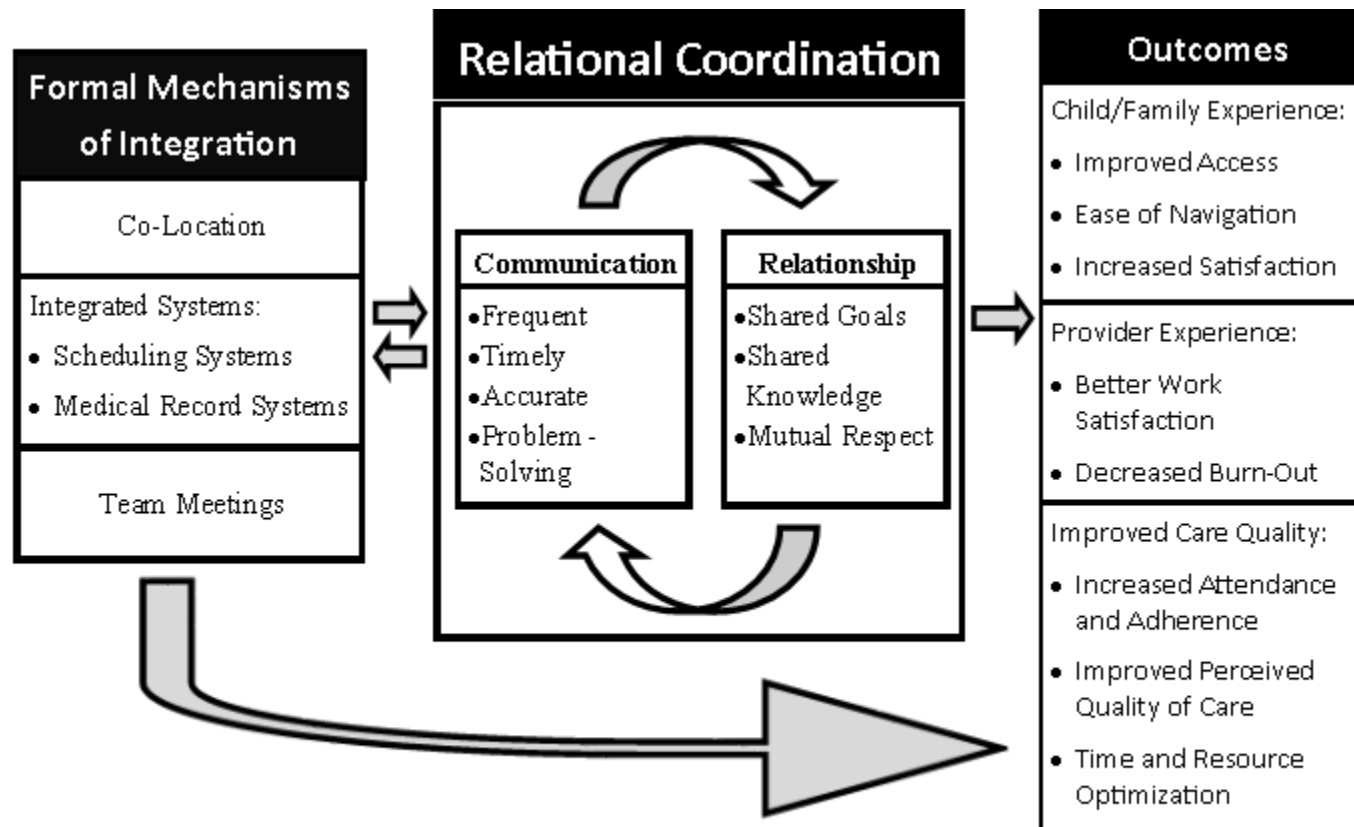
#### 1.5.2 Relational Coordination and Integrated Primary Care:

Many of the barriers to behavioral health access and to the implementation of integrated models of care (shown in Table 1) involve problems in communication and relationships. Further, qualitative analyses found that poor quality communication and relationships between primary care and mental health clinicians were a significant problem in integrating care for veterans with comorbid physical and mental illness and that high quality interpersonal communication can be effective in reducing the barriers to implementation of more standardized coordination mechanisms (Benzer et al., 2015; Chang et al., 2014). This suggests that relational coordination may be an especially valuable concept in the setting of IPC as improvements in communications and relationships may not only play a role in mediating the beneficial effects of integration, but may also act bi-directionally to reinforce the implementation of integration. This is supported by evidence from other integration efforts involving diabetes which found that relational coordination among providers eased implementation (Noel, Lanham, Palmer, Leykum, & Parchman, 2013).



Relational coordination fits very well into the established models of behavioral health integration, coordination, and collaboration, all of which describe the central role of relationships and communication between providers. In the standardized framework for integration summarized in Table 2, there are five key hallmarks of integrated care: co-location, integrated systems, communication and collaboration, team meetings, and an increased understanding and respect for one another's roles. Two of these, communication and collaboration as well as understanding and respect for different roles, directly correspond to the components of relational coordination. Additionally, Gittel (2015) suggests that flexible job boundaries, shared systems and protocols, and team meetings can directly increase relational coordination within teams and thereby outcomes. These are closely similar to the remaining items from the standardized framework (Heath et al., 2013). For these reasons, we propose that relational coordination is an excellent theoretical model by which to evaluate the success of integrated primary care and to determine the extent to which co-location of behavioral health providers, with or without the other formalized mechanisms of integration, is acting to improve inter-professional collaboration within integrated primary care. This proposed relationship is demonstrated in Figure 2.

Figure 2: The proposed bi-directional effects of integration and relational coordination.



Formal mechanisms model adapted from (Heath, Wise, Romero, & Reynolds, 2013). Model of Relational Coordination taken from (Gittell, Weinberg, Pfefferle, & Bishop, 2008).

### **1.6 Research Plan:**

The overarching research question to be answered is “How do the different professionals work together to provide behavioral health services for children in integrated primary care?” This overall question will be broken into three specific aims, each of which will be addressed in a chapter of the dissertation.

Mental, emotional, and behavioral issues in children are a significant concern for the children, their families, and society. Evidence-based treatments exist but access to them is often limited by barriers at the individual, interpersonal, community, and societal levels. Integration attempts reduce these barriers and optimize care by combining the large number of different stakeholders involved into a unified team. However, there is no real unified definition of just who providers in that unified team work with.

While many previous studies have documented the benefits of integrating physical and behavioral health care, studies involving integration in outpatient primary care pediatric settings are relatively rare. Of those, very few have used mixed methods, looked at the specific patterns of communication and relationships between providers, or collected data from multiple sources including both medical providers and behavioral health providers.

Finally, the parents and families of children with behavioral health problems often experience considerable financial costs and emotional distress. Further, their participation in care has been found to both improve the outcomes for their children. Although the purpose of integrating care systems is to integrate patient care, this is not always the outcome (Singer et al., 2011).

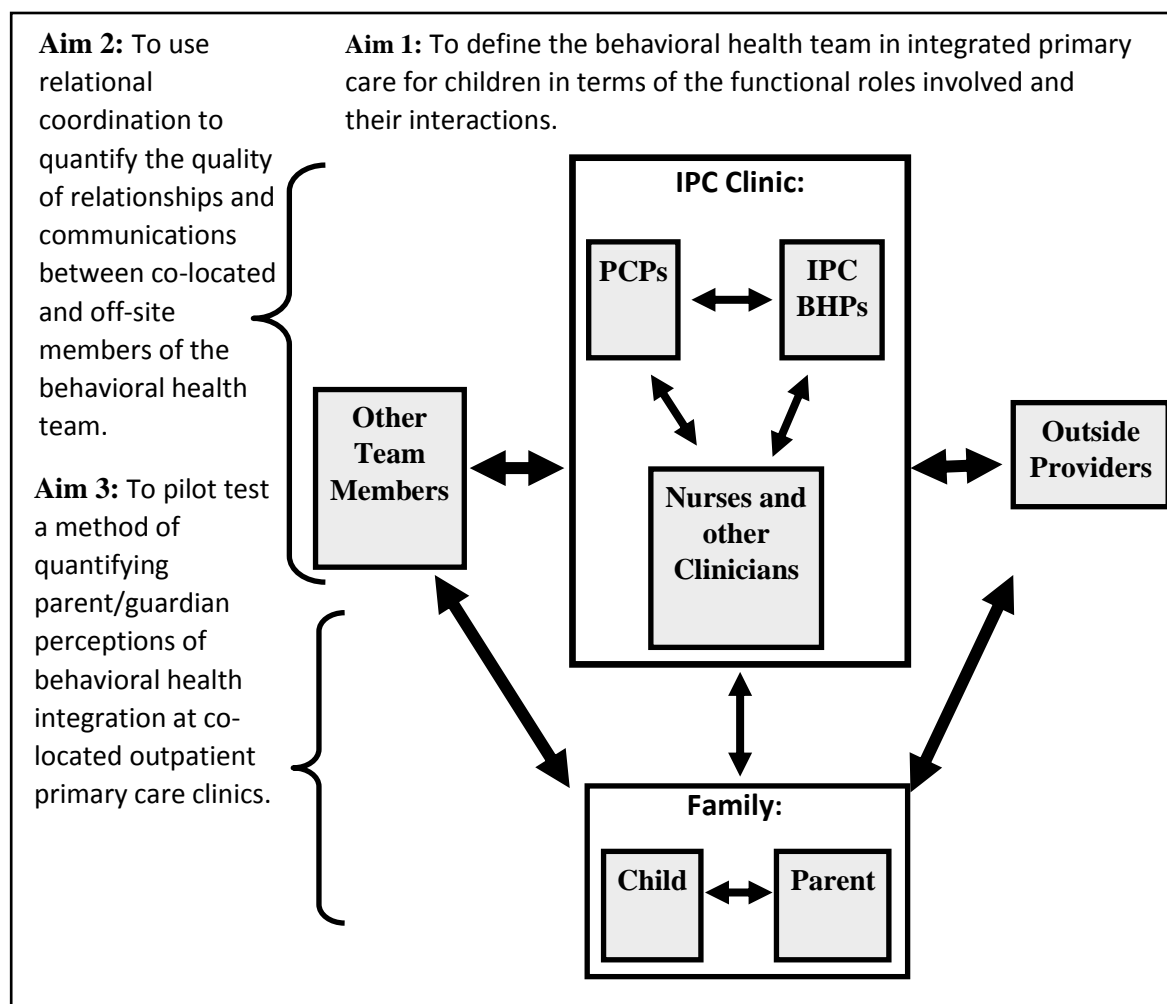
**Aim 1:** To define the behavioral health team in integrated primary care for children in terms of the functional roles involved and their interactions.

**Aim 2:** To use relational coordination to quantify the quality of relationships and communications between co-located and off-site members of the behavioral health team.

**Aim 3:** To pilot test a method of quantifying parent/guardian perceptions of behavioral health integration at co-located outpatient primary care clinics.

A visual representation of the dissertation aims on a diagram of a prototypical behavioral health care team is provided in Figure 2.

Figure 3: Dissertation aims on a diagram of a prototypical behavioral health care team.



**CHAPTER 2: DEFINING THE BEHAVIORAL HEALTH CARE TEAM IN INTEGRATED  
PRIMARY CARE FOR CHILDREN**

## **2.1 Introduction:**

### 2.1.1 Behavioral Health in Children:

Social, emotional, and behavioral health problems are highly prevalent in children and adolescents in the United States (Perou et al., 2013). A nationally representative study, the National Comorbidity Survey Replication – Adolescent Supplement, found that nearly half of all adolescents will meet the criteria for a mental disorder at some point in their life, and that one in five will suffer severe impairment as a result (Merikangas et al., 2010a). Additionally, even when mental, emotional, and behavioral problems fail to meet diagnostic thresholds for specific disorders, they can still be associated with considerable impairment (Roberts et al., 2015). Suicide, the most visible result of mental illness is the 3<sup>rd</sup> leading cause of Americans between the ages of 10 and 14 and the second leading cause for those 15-19 (Heron, 2016). For these and other reasons, improving the mental health of young people in general and reducing the rate of youth suicide in specific have been identified as national public health goals as part of Healthy People 2020 (2010).

Treatment for childhood mental disorders include pharmacological, psychosocial, or combined interventions (Hoagwood et al., 2001). Although many children with mental disorders may continue to experience symptoms well into adulthood, evidence based treatments can lead to a significant and long lasting improvement in symptoms and can reduction in problem behavior later in life (Benjamin et al., 2013; Shaw et al., 2012; Thompson, 2009). Despite this, 46.6% of school aged children with emotional or behavioral difficulties are not receiving any sort medication or psychosocial treatment at all (Simon et al., 2015).

A major factor behind this level of unmet need is a severe shortage of specialist behavioral health providers, which has been found in 77% of all US counties (Thomas et al., 2009). Even in

areas of mental health workforce shortage, children regularly see their primary care providers (PCPs). However, while the majority of pediatric primary care providers feel that they have a role in the identification and referral of behavioral health conditions, they are often unable to access outpatient mental health services for their patients (Cunningham, 2009; Miller et al., 2005; Stein, 2008). As a result, many PCPs are providing non-medical interventions for their patients, but do not feel that they have sufficient training for this (Heneghan et al., 2008; Nasir et al., 2014). Additionally, PCP treatment of behavioral health complaints are expensive as they require more time but yet are reimbursed less (Meadows et al., 2011).

#### 2.1.2 Integrated Primary Care and the Behavioral Healthcare Team:

Integrated primary care (IPC) represents a strategy to improve the delivery of behavioral health services for children by incorporating behavioral health providers and services into the primary care setting with the end goal of bringing together all of stakeholders involved in a child's health and well-being in order to create a "one stop shop" that can meet all of a family's health care needs in a single location (Heath et al., 2013). There is evidence to suggest that these collaborative models are associated with improved outcomes over standard treatment and that a large number of practices across the country are beginning to co-locate (Asarnow et al., 2015; Miller, Petterson, Burke, Phillips, & Green, 2014).

However, while the behavioral health workforce is often discussed, there is really no unified definition of just who should be included (Heisler & Bagalman, 2015). A previous systematic review of the literature found that published integrated primary care models used a wide range of different theoretical models and professions including psychiatrists, nurses, psychologists, social workers, master's level counselors, psychotherapists and other non-descript behavioral health providers (Martin, White, Hodgson, Lamson, & Irons, 2014). In addition to team

members within the integrated clinic, there is evidence to suggest that other parties such as schools (Ringeisen et al., 2016). Some studies examined collaboration of mental health providers with schools or government agencies like child protective services, but these did not include physicians (Darlington, Feeney, & Rixon, 2005; Mellin & Weist, 2011). Little is known about how multidisciplinary teams of providers in integrated primary care clinics for children view the roles of these groups.

### 2.1.3 Knowledge Gap and Study Aims:

Although previous studies, like Miller et al (2014), have identified healthcare integration based solely on geographic location, little is known about who providers at these co-located clinics are actually interacting with. Further, previous research from Australia has indicated that co-location may not necessarily indicate actual teamwork (Lawn et al., 2014). Previous qualitative studies of provider perspectives of integrated care have been performed (Beehler & Wray, 2012; Bitar, Springer, Gee, Graff, & Schydlower, 2009; Lynch, 2014; Todahl, Linville, Smith, Barnes, & Miller, 2006; Wener & Woodgate, 2016; Westheimer, Steinley-Bumgarner, & Brownson, 2008). Of these, only one was specific to children or adolescents (Bitar et al., 2009). Similarly, while existing studies have documented barriers to integrating behavioral health, these too are not specific to children (Gask, 2005; Kathol et al., 2010).

The SAMHSA standardized framework suggests that boundaries between the roles will begin to blur as collaboration advances (Heath et al., 2013). However, detailed descriptions of what these roles are difficult to find in the literature (Duffy et al., 2002). Only one study was found to specifically focus on provider perspectives of these roles within a co-located setting, yet specifically excluded physicians (Mitchell, 2009).



The purpose of this study is to identify the stakeholders involved in providing behavioral health care for children and to describe how their roles are viewed by the providers at integrated clinics. Specifically, to define the behavioral health care team (BHCT) in IPC clinics for children in terms of the functional roles involved and their interactions. This will be divided into a series of sub-aims:

**Sub-Aim 1.1:** To elicit the possible team members involved in the BHCT and describe provider perspectives of their roles.

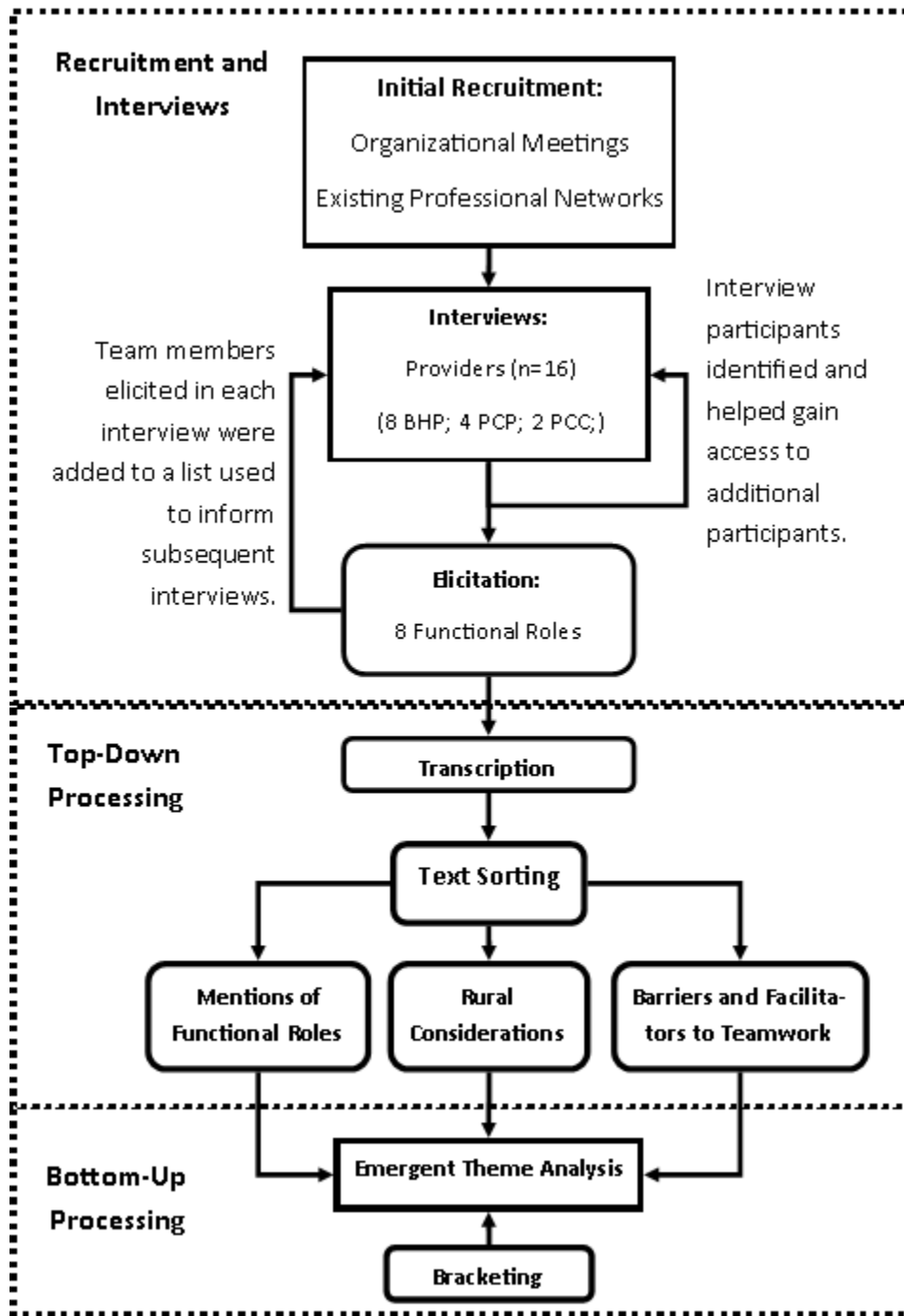
**Sub-Aim 1.2:** To identify specific behaviors and strategies that facilitate or hinder the ability of the team members to work together.

## **2.2 Methods:**

### 2.2.1 Overview:

This study was guided by a pragmatic approach to research drawing from multiple paradigms to best answer the research questions. The best sources of knowledge about the behavioral health care team was expected to be the team members themselves. It is beyond the scope of this project to capture every member of all of the different behavioral health care teams that exist in the state. Instead, it drew from a case study strategy and focused on a smaller subset of providers and from a number of heterogeneous clinics. To maximize the heterogeneity, efforts were made to recruit participants from both urban and rural clinics. See Figure 4 for details. All study protocols and materials were approved by the institutional review board.

Figure 4: Methodological diagram of Chapter 2.



### 2.2.2 Eligibility and Recruitment:

To be eligible for inclusion in the interviews, participants needed to: 1) be either a primary care provider (MD, DO, NP, APRN, or PA) with a specialty in either pediatrics or family practice, or be a behavioral health provider (Psychiatrist, Psychologist, LIMHP, or LMHP); 2) see patients under the age of 12; and 3) see patients at least part time a primary care practice location within the state of Nebraska. Early interviews highlighted the importance of patient care coordinators, so the inclusion criteria was expanded to include them.

BHPs were initially approached for recruitment in person at a regularly scheduled meeting for psychologists involved in co-located clinics affiliated or collaborating with a specific organization. Over the same time, PCPs were approached through existing partnerships, links through mutual colleagues, and connections with the healthcare systems.

These initial contacts were recruited to act as collaborative partners to help identify and gain access to the other providers at their clinics. Additionally, correspondence with these partners and with administrators from other healthcare systems in the state generated a list of other clinics that were believed to be practicing along the continuum of integrated primary care. Clinics at which no existing connections were available were contacted directly to request participation.

### 2.2.3 Interview Format:

The interviews were semi-structured in format in order to ensure that each of the individual sub-aims were adequately addressed but to still allow providers to freely explain their lived experience. Providers were first asked how they defined behavioral health care in order to be sure that everyone was discussing the same concept. Then they were asked to list the people involved in the care of their patients with psychological or behavioral concerns, and to describe

the role each person played. Finally, they were asked about their experiences working together. The interview guide and a mapping of the interview questions to the domains they were intended to address is located in Table 3.

The interviews were audio recorded and field notes were taken to create a list of the functional roles and professions mentioned. A global list of functional roles making up the Behavioral Healthcare Team was generated based on an initial review of the literature and was updated after each interview to include any new mentions in the interviewer notes. The list was used during subsequent interviews to elicit any additional relevant roles and determine if the categories matched the interviewee's experience.

Interviews were conducted in person or over the telephone based on logistics and participant availability and were expected to last between 20 and 25 although a number ended up lasting longer. At 30 minutes, interviewees were informed and their permission was asked to continue in order to minimize the burden of participation. Participants were told that if they chose to mention any specific names or identifiers, that they would be anonymized in the transcripts.

Table 3: Interview guide

<b>Domains</b>	<b>Question:</b>	<b>Probes:</b>
Defining the Phenomenon: (3 minutes)  <b>Sub-Aim 1.1</b>	What is behavioral health care to you?	What is and isn't included?
Team Members: (5 minutes)  <b>Sub-Aims 1.1</b>	When you have a child with psychological or behavioral concerns, who is normally a part of their care?	What role does [given person] play?  If you had a patient with severe emotional behavior concerns who would be involved?  For patients with less severe?  Is there anyone that you think should be part of their care, but for whatever reason isn't?
Elicitation: (3 minutes)  <b>Sub-Aim 1.1</b>	<i>Give existing list.</i>  This is a list of the behavioral health care team members other providers have identified. How does this list reflect your own experience?	Which of these do you regularly interact with?
Relationships: (5 minutes)  <b>Sub-Aim 1.2</b>	In what ways do you feel like you are part of a team?	What makes a team?  What ways don't you feel like a team?
Communication: (5 minutes)  <b>Sub-Aim 1.2</b>	How do you normally communicate with the people involved in the psychological and/or behavioral health of your patients?	How often?  What form?  Are there any difficulties in communication?  What makes them easier?
Rural Identity: (3 minutes)  <b>Sub-Aims 1.3</b>	What do you think makes someone a rural healthcare provider?	Do you think of yourself as a RHP?  Do you have rural patients?  Do you have a rural background?  How does this effect your experience?

#### 2.2.4 Data Analysis:

Once interviews had been completed, qualitative analysis was performed as a multistep process. First, audio recordings of each interview were transcribed by the author into a digital text format. Although transcription is deceptively difficult and time consuming, the careful attention to and often repetitious processing of source material necessary makes the act of transcription itself a valuable analytic technique (Bailey, 2008).

Second, the transcripts were imported for further analysis using QSR NVivo software for top-down processing. Each text file was divided into sections based on the domains described in Table 3 and these individual sections were aggregated. Statements that were relevant to multiple domains were included in each. Individual mentions of specific members of the behavioral healthcare team were then identified and likewise aggregated. This process allowed all of the data to be viewed as subsets by domain, by role, and at the intersections of the two.

Third, these subsets were then read in their entirety several times to allow for a holistic processing of the information contained and a bottom-up identification of emergent themes regarding the roles that were filled by each of the individual team members (detailed in Table 3). The emergent themes were coded within the aggregates. In addition to emergent themes regarding functional roles, facilitators and barriers to teamwork and specific suggestions for other providers engaged in co-located care were identified (detailed in Table 4). Themes regarding specific considerations for rural patients and clinics were identified and coded as well (detailed in Table 5). After this coding, the individual interviews were reviewed a final time to be sure that none of the themes were missed and this verification process was repeated using NVivo's search functions. Specific statements that represented the overall experience or the themes particularly well were identified to be presented as quotes.

Part of the analytic process involved self-reflection of the author's positionality as a medical student and pre-existing thoughts and beliefs on the subject. Conscious effort was made to examine emergent results to be sure that they reflected the experience of the interviewees and not the researcher's own previous experience and education. This process of minimizing subjective observer bias in qualitative research is known as bracketing (Tufford & Newman, 2012).

### **2.3 Results:**

A total of 16 interviews were conducted with behavioral health team members including 4 primary care physicians, 8 behavioral health providers, 2 patient care coordinators, a primary care advance practice nurse practitioner, and a primary care physicians' assistant. Due to the relatively small number of providers interviewed, the well-connected nature of the field, and the use of specific quotes in interview results, detailed demographic distribution of the interview participants were suppressed to protect their anonymity.

#### 2.3.1 Defining Behavioral Health Care:

Participants interviewed had a very broad definition of behavioral health which centers on problematic emotions or behaviors that interfere with a child's or family's ability to deal with life's stressors. Although some providers initially gave specific psychiatric diagnoses when asked about what was included in their definition of behavioral health, they expanded the definition to include broader categories of problem behaviors and psychosocial factors when probed further. Providers had difficulty identifying areas of medicine that did not involve behavioral health, viewing the physical and behavioral as being intimately connected. Examples of included working to increase medication adherence and appointment attendance, improve health behaviors such as exercise and nutrition, and helping children and families to deal with the psychosocial and

emotional manifestations of physical health conditions. One APRN who dealt with a lot of behavioral complaints in her rural health clinic described this well. She said:

*To me behavioral health is the new way we have of describing mental health or psychological services. The reason that we've changed how we refer to that is a greater understanding of how the mental health component, the physical health component, and the behavioral aspects of what people do for themselves all link together.*

#### 2.3.2 Members of the Behavioral Health Care Team (Sub-Aim 1.1):

The interviews elicited 8 distinct functional roles of behavioral health team members, some of which included multiple categories of individuals. While the majority of providers felt that the make-up of the behavioral health team differed based on location and the specific needs of the patient, the interviews elicited 8 distinct functional roles of behavioral health team members. Several of these roles included multiple categories of individuals. These roles, the themes that emerged to describe them, and some exemplar quotes from the interviews are presented in Table 4.



Table 4: Members of the Behavioral Healthcare Team

<b>Functional Role</b> – Constituents and emergent themes.	<b>Exemplar Quote(s):</b>
<p><b>The family</b> – The child, their parents/caregivers, and other family members involved with the child including extended and non-biological relations.</p> <ul style="list-style-type: none"> <li>• Collaborator.</li> <li>• Extension of patient.</li> <li>• Gatekeeper to care.</li> </ul>	<p><i>My preference is always to work really collaboratively with families because I feel, I'm a parent myself, and I'm the expert on my kids. I want to give that acknowledgement to the families we work with as well. They may not always know what to do, but they are the expert on their kids.</i></p> <p style="text-align: center;">- Psychologist</p> <p><i>They were just targeting this kid, 'It's your problem, it's your problem, it's your problem. Here are these meds to solve all your issues,' but it wasn't his problem... It's just so important to treat the whole [family], not just the child.</i></p> <p style="text-align: center;">- Primary Care Physician Assistant</p>
<p><b>Primary care providers</b> – Physicians, physician assistants, and nurse practitioners with pediatric or family practice specialties.</p> <ul style="list-style-type: none"> <li>• Generalist.</li> <li>• Medical management.</li> <li>• Gatekeeper to care.</li> <li>• Central Coordinator.</li> </ul>	<p><i>Sometimes I'm alone managing, so that would be my role, if I can provide the most helpful information on my own then I will do that. If I myself cannot do that, then finding the resources and helping to capture those resources for the family.</i></p> <p style="text-align: center;">- Pediatrician</p> <p><i>The primary care provider is usually the gatekeeper to medical and behavioral health care. They have a system in place where children come for well checks at various intervals... They often are the ones who catch those behavioral health concerns right when they are beginning or before they become too severe.</i></p> <p style="text-align: center;">- Psychologist</p>
<p><b>Behavioral health specialists</b> – Psychologists, counselors, and other therapists.</p> <ul style="list-style-type: none"> <li>• Evaluation, assessment, and testing.</li> <li>• More than mental health.</li> <li>• Time and detail.</li> <li>• Coordination of care.</li> </ul>	<p><i>I think that role includes spending more time. The outcome goals might be a little more difficult to measure, but their role would be diving in a little deeper to see how other aspects of the patient, other than just a medical diagnosis or behavior problem, but what are the contributing factors and helping the psyche of the patient to help manage their surroundings or their given situation.</i></p> <p style="text-align: center;">- Pediatrician</p> <p><i>Some kids won't take their inhalers, some kids don't know how to swallow a pill. We're not prescribing the medication but we're helping them take it and providing the compliance for that and the follow-up for effectiveness for that.</i></p> <p style="text-align: center;">- Psychologist</p>

<p><b>Care Coordinators</b> –Patient care coordinators and social workers.</p> <ul style="list-style-type: none"> <li>• Time and detail.</li> <li>• Central Coordinator.</li> <li>• Face of the clinic.</li> <li>• Advocate for the patient.</li> <li>• Access to outside resources.</li> </ul>	<p><i>Oh god, I love our patient care coordinator. I can tell a family, “This is who you should call, set up this appointment,” but... 80% of the time, if that's all I do that may not go any further... Our patient care coordinators help to make sure that they follow through on those things, and that really benefits everyone.</i></p> <ul style="list-style-type: none"> <li>- Pediatrician</li> </ul> <p><i>I will call on behalf of our pediatrician, and I cannot tell you how much that means that their physician, the doctor, has someone who is calling and following up. This is something that the doctor doesn't have time to do, but someone like me can.</i></p> <ul style="list-style-type: none"> <li>- Patient Care Coordinator</li> </ul> <p><i>We have a kid who is depressed from low socioeconomic status, and we need to get more reinforcing things for him, so she helps us find things like a gym membership or a zoo membership. She helps us find things like that so he can get more active.</i></p> <ul style="list-style-type: none"> <li>- Psychologist</li> </ul>
<p><b>Psychiatric providers</b> –Psychiatrists and psychiatric nurse practitioners.</p> <ul style="list-style-type: none"> <li>• Severity and complexity.</li> <li>• Medication specialists.</li> <li>• Consultant.</li> </ul>	<p><i>There just aren't enough psychiatrists around. For them to be spending time doing the sort of thing we are just doesn't seem like an efficient use. This front line, front door access to behavioral health really shouldn't be psychiatry.</i></p> <ul style="list-style-type: none"> <li>- Psychologist</li> </ul> <p><i>[Psychiatrists are] specialists in multiple medication management for when I feel out of the comfort zone. The typical mainstream primary care provider training doesn't include broader expansive coverage of medications that might be new or changing.</i></p> <ul style="list-style-type: none"> <li>- Pediatrician</li> </ul>
<p><b>Nurses</b> – Primary care nurses and medical assistants.</p> <ul style="list-style-type: none"> <li>• Coordination of care.</li> <li>• Extension of the PCP.</li> <li>• Face of the clinic.</li> <li>• Not full member of team.</li> </ul>	<p><i>We don't make decisions with just the nursing staff and they have to go through the physicians to make any decisions as well. They do not make any decisions on their own.</i></p> <ul style="list-style-type: none"> <li>- Psychologist</li> </ul> <p><i>It depends on the level of nursing also, sometimes people just come in and take a blood pressure for a medical issue. But sometimes they're much more involved</i></p> <ul style="list-style-type: none"> <li>- Pediatrician</li> </ul>

<p><b>Schools</b> – School, daycare, and preschool employees.</p> <ul style="list-style-type: none"> <li>• Referral Source.</li> <li>• Information source.</li> <li>• Where the kids are.</li> </ul>	<p><i>In the schools, if we're doing an evaluation they will complete behavioral rating forms and a written interview and send that back to us. I would say, that's the majority of the extent.</i></p> <ul style="list-style-type: none"> <li>- Psychologist</li> </ul> <p><i>I think there's a lot. There's a lot of responsibility there to help give the child everything educational rights secures, within a setting that is manageable for their mental health.</i></p> <ul style="list-style-type: none"> <li>- Pediatrician</li> </ul>
<p><b>Government Agencies</b> – Child protective services (CPS), health departments, foster care, and the law, justice, and probation systems.</p> <ul style="list-style-type: none"> <li>• Only involved when necessary.</li> <li>• Not full member of team.</li> <li>• Authority for system entrenched youth.</li> <li>• Difficult.</li> </ul>	<p><i>A lot of the kids I see that have behavioral health problems are system entrenched one way or another, and these things can really impact their health as well.</i></p> <ul style="list-style-type: none"> <li>- Pediatrician</li> </ul> <p><i>Communication for state wards is probably one of the most difficult things I do.</i></p> <ul style="list-style-type: none"> <li>- Patient Care Coordinator</li> </ul>

### 2.3.3 Barriers and Facilitators to Teamwork (Sub-Aim 1.2):

One important theme that emerged in the interviews was that there were a number of barriers standing between being co-located and being truly integrated. Providers viewed they work as team in the sense that they were working on different aspects of the same patient's care in order to address the whole person's needs, however, they did not always see it as a truly interactive team. One pediatrician described this well when she said,

*"[I feel like I am part of a team] in the fact that I see myself providing only part of the care and the other part is provided by other people. However, really part of the team meaning that we interact together about the same patient, this doesn't happen. This is I think the lacking part."*

Despite this, providers felt that teamwork was considerably better with co-located team members than with those off-site, although there remained a number of specific characteristics of the clinics and actions of the providers therein which acted as either barriers or facilitators to effective teamwork. These are described below in Table 5.

Table 5: Barriers and facilitators to teamwork

Barrier:	Examples of Problems Described:	Examples of Solutions Given:
Lack of Communication.	Playing “phone tag” between scheduled appointments. BHPs not updating PCPs if they have seen patients. PCPs not consulting BHPs before adding medications.*	Scheduled team meetings. Using nurses or care coordinators to relay messages. Writing detailed notes in medical records. Sharing office space. Standardized update forms.
Separated Systems	Some providers cannot access others notes in the EMR. Different scheduling systems and phone numbers.	Printing off summaries for other providers. Leaving a printed schedule for receptionist. Unifying scheduling systems.
Finance / Reimbursement	Different coverage for behavioral and physical concerns. Insurance pre-approval for behavioral health treatment. Lack of reimbursement for coordination activities.	Healthcare reform.
Patient Privacy	Many different information disclosure waivers. Parents can be reluctant to allow communication. Different opinions of how privacy should be protected.	Standardization of information disclosure waivers. Explaining team care and roles to families early on.
Mutual Respect	Physicians not knowing BHP’s name or title. Referring to physicians but not psychologists as “Doctor.” Using medical jargon not all members understand. Not consulting each other before changing treatment.*	Including BHPs’ names with PCPs’ on clinic door. Including BHPs in clinic social functions. Expressing trust and respect to patients. Informal hallway consultations.

\* Not consulting before making decisions was referenced by providers specifically both in terms of respect and communication.

## **2.4 Discussion:**

This chapter described a detailed look at the perspectives of providers in integrated primary care clinics from the perspectives of three different roles of providers: 1) Primary Care Providers (PCPs), 2) Patient Care Coordinators (PCCs), and 3) Specialized Behavioral Health Providers (BHPs). By talking to the people involved on the ground in this process we were able to identify the individuals involved in the behavioral health care team (BHCT), and explore how these roles are perceived. Next, we described the barriers keeping these roles from working as fully interactive team and identified the specific strategies and solutions that providers have used to overcome them. Finally, we explored the specific considerations taken by providers to accommodate families from rural communities. While by no means comprehensive, the findings of this study will be valuable to researchers studying integration and offer several specific, actionable steps that clinics and providers can implement to improve teamwork between the roles.

### **2.4.1 The Behavioral Health Care Team:**

This study that the BHCT centered on a core triad of the family, the primary care provider, and the specialized behavioral health provider. Many providers interviewed felt that the majority of behavioral health concerns could be adequately addressed within these three groups. Despite this, the study also found that primary care nurses or medical assistants, and patient care coordinators may be an underutilized resource for many teams. Although there was a role for psychiatric providers, this study raised a number of questions about that role. Finally, this study offered some insight into the roles of external groups such as schools and government agencies.

#### *2.4.2.1 The Expanding Roles of Primary Care and Behavioral Health Providers:*

This study found that the boundaries of the roles for PCPs and BHPs in providing behavioral health care are not clearly defined. These findings support existing evidence that the role of the PCP is expanding to include more behavioral health issues and that many PCPs are finding themselves doing psychosocial interventions in their practice (Faghri, Boisvert, & Faghri, 2010; Williams et al., 2004). However, many PCPs also recognized that the BHPs were more suited to the demands of psychosocial therapy. This raises the question for future study of whether co-location within an IPC clinic is leading physicians to provide more or less psychosocial therapy.

The role of the BHP in the integrated clinic was also expanding from its traditional scope to include more assistance in improving health behaviors and adherence to treatment plans regarding conditions that were previously viewed as exclusively physical health concerns. This supports existing literature that describes the role of the BHP in managing unexplained physical symptoms (Escobar et al., 2007). However, this also supports the transdisciplinary nature of healthcare integration where the boundaries between clinical roles become less distinct (Heath et al., 2013). A previous study of BHPs in integrated clinics within the Department of Veterans Affairs found that BHPs were moving towards more of a generalist role as well (Beehler & Wray, 2012).

One interesting finding was that none of these providers identified substance use or substance use disorders as part of their role. Nor did they specifically include it in their definitions of behavioral health in general. In fact, the only time drugs or alcohol came up during the interviews was in reference to the effect of parental drug use on adherence to treatment. This is surprising as substance use disorders are explicitly included in the AHRQ Lexicon for Behavioral Health and Primary Care Integration (Peek, 2013). Further, the American Academy of Pediatrics

has identified the role of pediatricians in the identification and management of substance abuse (Kulig & American Academy of Pediatrics Committee on Substance Abuse, 2005). Due to the relatively small number of interviews and the focus on school aged children, it is possible that none of the participants happened to think of substances and would have included them if asked directly. Further research to determine if this is included in provider perspectives of behavioral health integration.

#### *2.4.2.2 The Importance of Patient, Parents, and Family:*

The role of patient, parents, and family in the BHCT was highlighted by this study's finding of the increasingly patient-centered and, perhaps more importantly, family-centered nature of behavioral health for children. Furthermore, the interviews identified the importance of recognizing that today's families are not limited to the child and their parents but rather include the extended family and in many cases caregivers beyond those defined by biological kinship. Patient-centeredness is a hallmark of the standardized framework for integrated models of care and there is extensive existing literature supporting the important roles of family members in the access to and effectiveness of behavioral health services for children (Abrahamse et al., 2015; Cobham et al., 2012; Corkum et al., 2015; Heath et al., 2013). Despite this, there is evidence to suggest that parents of children with behavioral health conditions are less likely to have shared decision making power than those with purely physical conditions (Butler, Elkins, Kowalkowski, & Raphael, 2015).

The interviews also identified the importance of recognizing that today's families are not limited to the child and their parents but rather include the extended family and in many cases caregivers beyond those defined by biological kinship. This is especially important in light of the evidence that family structure can have a significant effect on a child's physical and mental health



(Bramlett & Blumberg, 2007; Hamilton, 2005; Mitchell, 2007). This study offers further justification to support the idea that if health care integration is truly intended to bring together all of the stakeholders involved in a child's care, it must involve the full range of family members and caregivers who make up that child's social environment.

In addition to their direct role in care, parents and families also have an impact on the ability of providers to work together. The interview findings suggest that failure to gain buy-in from, and communicate the importance of behavioral healthcare integration to, parents can be a significant barrier to effective teamwork. This power derives from the fact that they are often the main decision makers in terms of HIPAA compliant communication between providers. Existing studies show mixed results regarding the satisfaction of parents and families with integrated models of care (Bridges et al., 2014; Burt et al., 2014; Gomez et al., 2014; Knapp, Madden, Sloyer, & Shenkman, 2012; Wood et al., 2009). If integrated care is going to be universally implemented, providers must be able to demonstrate its value to the patients, their parents, and their families.

While HIPAA and patient privacy are important aspects of all medical care, they are particularly problematic when it comes to behavioral health issues. A large part of this problem is likely tied to the distinctions that our society still draws between the mental and physical issues. There is ample evidence in the literature to show that stigma towards mental illness is a considerable barrier to the ability of children to access behavioral health care (Butler, 2014; Dempster et al., 2015; Interian et al., 2010). It is not surprising then that patients and families are hesitant to allow communication about behavioral health issues. While there is an important role for PCPs and BHPs to combat this stigma, it will likely take a cultural shift in the way that we as a society view mental illness before integration can be fully realized.

### *2.4.2.3 Nurses and Patient Care Coordinators as Underutilized Resources:*

The importance of patient care coordinators and other dedicated care coordination personnel in the effective integration of behavioral and physical health was perhaps one of the most important findings of this study. In the interviews, primary care physicians who worked with patient care coordinators appreciated their ability to streamline coordination and those who didn't work with patient care coordinators recognized the absence. This value was not unique to PCPs, as many BHPs also saw the need for such a role and some specifically identified the presence of a care coordinator in the clinic as a facilitator to feeling included as part of a team. This adds to the existing literature which found that having staff specifically assigned to coordinate care lead to increased mental health care coordination (Pfefferle, Gittell, Hodgkin, & Ritter, 2006).

Patient care coordinators also played an important role in maintaining ongoing communication with patients and families. Patient non-adherence with treatment plans, including no-shows at scheduled appointments, is a significant barrier to effective care (Defife, Conklin, Smith, & Poole, 2010; Kathol et al., 2010). Further when providers are holding time to meet with patients who do not show up, it is wasting an already scarce resource that could be allocated elsewhere. Earlier studies have already demonstrated that co-location of BHPs in primary care setting can reduce the rate of no-shows (Pomerantz et al., 2010; Valleley et al., 2008). The use of PCCs was identified in the interviews as a strategy to further reduce these no show rates and studies of such care coordinators have shown similar improvements in other fields of health care (Howitt, 2011; Page et al., 2015; Schmalzried, 2006). Further study is necessary to evaluate the effectiveness of patient care coordinators in reducing non-adherence in IPCs for children.

PCCs were also found to have an important role in accessing outside resources to mitigate the effects of environmental psychosocial stressors within the family. Meta-analysis has found

that psychosocial stressors such as low socioeconomic status and poverty have an enormous effect on mental health outcomes for children and adolescents (Reiss, 2013). Children who are inadequately housed, living in unsafe areas, or are experiencing abuse or neglect are significantly more likely to experience both physical and behavioral health issues (Allen, Balfour, Bell, & Marmot, 2014; Lazenbatt, 2010; Park, Fertig, & Allison, 2011; Park, Metraux, Culhane, & Mandell, 2012). While PCPs and BHPs are doing what they can to try to help parents and families meet these needs, they may not have the time or training to focus on it. Patient care coordinators and medical social workers have the training and mandate to ease the burden on these families. However, under the current reimbursement systems they do not directly contribute to a clinic's revenue stream. Further research is needed to evaluate how to incorporate this vital role in an economically sustainable way.

Nurses were also found to be an under-utilized resource in integrated behavioral health care. While both PCPs and BHPs recognized their value and their presence within the clinic, they were not viewed as full members of the team. Some attributed nurses a role in implementing treatment plans or in supporting coordination in a role similar to that described above for PCCs, however they were not seen as having any real decision making power on the team. This is unfortunate as previous authors have highlighted the importance of nurses in care coordination and have suggested that nurses may be better suited than physicians to leadership in healthcare teams (Camicia et al., 2013; Yang & Meiners, 2014). Furthermore, there is evidence to suggest that incorporating nurses into behavioral health processes can improve access to care and clinical outcomes for behavioral issues in children (Kolko, Campo, Kelleher, & Cheng, 2010). Additionally, there is evidence to suggest that nurses in all specialties are regularly making clinical decisions (Bakalis & Watson, 2005).

The findings of this current study did not incorporate the perspectives of the nurses themselves so we cannot know if the findings from other providers reflect their own perception of their role. Future studies should include nurses in order to more fully explore the potential role of nursing staff in the integrated primary care clinics.

#### *2.4.2.4 Psychiatric Providers:*

The role of psychiatric providers was somewhat mixed in the findings. Many of the interviewees felt that the role of psychiatric providers was limited to the rare complex or severe case and some providers were reluctant to include them in care. One possible explanation for this is that the co-location of BHPs into primary care is expanding the comfort zone of both themselves and the PCPs they work with. That is to say that by working together, these providers are comfortable in handling cases that they would have referred to psychiatry had they been working alone. This explanation is definitely supported in the accounts of some of the providers interviewed. Further, this evolution of care, where the borders between the individual disciplines are breaking down in favor of a transdisciplinary team, is one of the dreams of fully integrated care (Heath et al., 2013).

Another explanation for these findings is that many providers have existed in an environment where they do not have reliable access to psychiatric providers for so long that they have been forced to develop alternative strategies to cope. This would reflect the known shortage of psychiatric providers (Thomas et al., 2009; Watanabe-Galloway et al., 2015). Although the perspectives of psychiatrists themselves were not included in this study, these findings are supported in a column by psychiatrist Lori Raney (2013) which calls for soul-searching on the part of psychiatrists and the American Psychiatric Association as a whole to define how the profession will fit into evolving models of integrated care.

## 2.4.2 Overcoming Barriers to Teamwork:

### *2.4.2.1 Reimbursement and Financial Barriers:*

This study found that providers' own broad philosophical understanding of behavioral health and desire for an interactive team care experience was in profound contradiction with the financial and reimbursement systems under which they practice. One of the psychologists interviewed expressed that despite the blurred boundary of behavioral and physical health in her own mind and she was limited based on what she could bill for, "Quite honestly, it is dictated by insurance a lot, although I can't say I agree with it." Other times team care ideals like same day referrals were made impossible by payer policies like pre-authorization for behavioral health coverage.

This finding adds to previous studies which found that disparate reimbursement for physical and mental health conditions were one the greatest single barriers to the integration of medical and behavioral health care even in highly controlled single payer systems like the Veteran Health Administration (Kathol et al., 2010; Thielke et al., 2007). It is not surprising then that the current study found it was also a significant barrier for general primary care settings which must accommodate a wide range of public and private payers. However, another study based on focus groups of primary care providers regarding behavioral health services for adolescents in primary care identified limited resources as a barrier, they did not find disparate reimbursement systems to be a theme (Bitar et al., 2009). Both this current study and Bitar et al. (2009) were limited to providers within a single state and many of the policies and regulations that govern healthcare reimbursement exist at the state level which may explain the discrepancy (Croft & Parish, 2013). However, since both studies used qualitative methods that did not intend to quantify the barriers, the value of direct comparison is limited.

Regardless, despite many calls for movement away from fee-for-service and towards preventive population based models of healthcare to improve care and reduce cost, fee-for-service remains the most common reimbursement system in the US (Zuvekas & Cohen, 2016). Recent political and legislative changes at the state and national levels, such as the Affordable Care Act, are likely to further benefit this process (Bachrach, Anthony, Detty, Manatt, & Phillips, 2014; Croft & Parish, 2013). However additional research is necessary to evaluate how these policies will affect the actual providers in practice.

#### *2.4.2.2 Respect and Communication:*

This study found that many of the barriers to teamwork with providers both within and outside of the integrated clinic were related to respect and communication. Theories of teamwork have identified an interdependent relationship between respect and communication (Gittel, Seidner, & Wimbush, 2010). This study has identified a number of specific actions that clinics and providers can implement in order to improve the experience of teamwork and respect within co-located clinics.

One of the more salient examples given in the interviews was of when a parent told a behavioral health provider that the referring physician did not know the BHPs name or specialty and that this did not convey a sense of importance to the patient. The importance of knowing one another's name is not new in inter-professional literature (Modic, 2015). Another closely related example was that of using the title of "doctor" solely to refer to physicians and not to psychologists whom have also earned a doctoral degree. While clinics cannot force providers to know each other's name, simple steps like including the names and titles of behavioral health providers alongside primary care providers on the door of the clinic can create a norm of respect.

Doors and names are not the only area in which clinics can demonstrate respect. Other examples mentioned included involving behavioral health providers and other non-medical staff in clinic social functions, lunchrooms, and sharing office space. These things may seem like common sense, but one of the greatest issues identified by family physicians in integration was the recruitment and retention of behavioral health providers (Burfeind, Seymour, Sillau, Zittleman, & Westfall, 2014). If clinics do not take steps to make behavioral health providers feel included and respected, then they are unlikely to fully benefit from co-location.

#### 2.4.3 Limitations and Lessons Learned:

Perhaps the greatest limitation was the representation of perspectives from only a subset of the BHCT. No interviews were conducted with patients and their families. Additionally, the receptionists, medical assistants, and nurses at the clinics were not consulted in this study. Further, the focus on the integrated clinic as the central point of the BHCT also meant that perspectives from behavioral health regional administrations, psychiatric providers, school personnel, and other agencies were not included. While they were beyond the scope of this particular study, further research should incorporate these additional perspectives to build upon the foundation this study provides and to determine how their perspectives support the findings reported here and where they differ.

One of the greatest strengths of this study was in its ability to synthesize the perspectives from three different groups of providers. While these groups often communicate in order to provide care, hopefully the findings of this study will provide them with a starting point to open a dialogue about their relationships, invite meta-communication, and by reflecting on their experiences of the process, more fully realize the promise of healthcare integration. Future study

is also warranted to extend these findings into the realm of IPC for adolescents and adults, as well as into teamwork in other areas of healthcare.



**CHAPTER 3: INTER-PROFESSIONAL COMMUNICATIONS AND RELATIONSHIPS BETWEEN  
CO-LOCATED AND OFF-SITE PROVIDERS AT INTEGRATED PRIMARY CARE CLINICS FOR  
CHILDREN**

### **3.1 Introduction:**

#### 3.1.1 Behavioral Health in Children:

Social, emotional, and behavioral problems, collectively called behavioral health problems, are highly prevalent in children and adolescents in the United States (Perou et al., 2013). A nationally representative study, the National Comorbidity Survey Replication – Adolescent Supplement, found that nearly half of all adolescents will meet the criteria for a mental disorder at some point in their life, and that one in five will suffer severe impairment as a result (Merikangas et al., 2010a). Additionally, even when mental, emotional, and behavioral problems fail to meet diagnostic thresholds for specific disorders, they can still be associated with considerable impairment (Roberts et al., 2015). Suicide, the most visible result of mental illness is the 3<sup>rd</sup> leading cause of Americans between the ages of 10 and 14 and the second leading cause for those 15-19 (Heron, 2016). For these and other reasons, improving the mental health of young people in general and reducing the rate of youth suicide in specific have been identified as national public health goals as part of Healthy People 2020 (2010).

Treatment for childhood mental disorders include pharmacological, psychosocial, or combined interventions (Hoagwood et al., 2001). Although many children with mental disorders may continue to experience symptoms well into adulthood, evidence based treatments can lead to a significant and long lasting improvement in symptoms and can reduction in problem behavior later in life (Benjamin et al., 2013; Shaw et al., 2012; Thompson, 2009). Despite this, 46.6% of school aged children with emotional or behavioral difficulties are not receiving any sort medication or psychosocial treatment at all (Simon et al., 2015). A major factor behind this level of unmet need is a severe shortage of specialist behavioral health providers, which has been found

in 77% of all US counties (Thomas et al., 2009). Even in areas of mental health workforce shortage, children regularly see their primary care providers (PCPs).

### 3.1.2 Behavioral Health in Primary Care:

The majority of PCPs feel that they have a role in the identification and referral of behavioral health conditions but are often unable to access outpatient mental health services for their patients (Cunningham, 2009; Miller et al., 2005; Stein, 2008). As a result, many PCPs are prescribing a larger proportion of psychoactive drugs for children and are providing non-medical interventions for their patients, even though many do not feel that they have sufficient training for this (Anderson, Chen, Perrin, & Van Cleave, 2015; Heneghan et al., 2008; Nasir et al., 2014). Having PCPs treat of behavioral health complaints is also expensive because they require more time but yet are reimbursed less (Meadows et al., 2011).

Even when mental health providers are available, both pediatricians and family practice physicians have reported significant difficulty with the referral process for mental health services and a general lack of feedback from behavioral health providers after the referral (Burfeind et al., 2014; Williams, Palmes, Klinepeter, Pulley, & Foy, 2005). This is problematic because high quality communications and relationships between primary care providers and specialists have been linked to improvements in patient outcomes (Foy et al., 2010). Improving these relationships between providers will be necessary to optimally care for children and adolescents with behavioral health problems.

### 3.1.3 Colocation and Integration:

The collaboration and integration of behavioral health services into a primary care setting, known as integrated primary care (IPC), has been proposed as a strategy to improve the quality and access to care (Blount & Miller, 2009; Thielke et al., 2007). The Substance Abuse and Mental

Health Services Administration (SAMHSA) has developed a standardized framework for this integration which involves a continuum from coordinated to collaborative to integrated care (Heath et al., 2013). There is evidence to suggest that integration can be effective. A systematic meta-analysis found that integrated medical-behavioral care for children and adolescents are associated with improved outcomes across the board when compared to standard primary care, with a randomly selected patient in integrated care having 66% probability of having a better outcome than a peer in standard care (Asarnow et al., 2015). IPC is particularly promising in rural settings, but may require specific modifications to implement (McNeil et al., 2015).

A large component of the integration process is co-location, or the onsite collaboration of primary care and behavioral health providers (Butler et al., 2008; Heath et al., 2013). Co-location has been used as a measurement of integration (Miller et al., 2014). However, research has shown that co-located providers may not be truly integrated (Lawn et al., 2014). Even in co-located pediatric settings with other formalized integration policies differences in provider understanding and communication can interfere with their ability to use these tools effectively (Hacker et al., 2013). Measuring the relationships and communication between providers within these clinics will be a necessary step to evaluating the success of co-location and integration.

#### 3.1.4 Relational Coordination as a Measure of Teamwork:

Relational coordination is a theoretical model of teamwork that is based upon two interdependent components of communication and relationships (Gittell, 2006). This theory states that high quality communication (defined by that which is frequent, timely, accurate, and problem-solving) is bi-directionally supported by underlying relationships (defined by shared goals, shared knowledge, and mutual respect) (Gittell, 2006).

Relational coordination has been applied to many healthcare settings and been associated with increased outcomes in inpatient care, nursing homes, and integrated approaches to treating diabetes (Gittell et al., 2000; Havens et al., 2010; Wrobel et al., 2003). Previous studies have used relational coordination (RC) as theoretical framework to understand the inter-professional interactions between primary care providers (PCPs) and specialized behavioral health providers (BHPs) and have suggested that the relationships and communications described may play a role in the benefits of health care integration (Benzer et al., 2015; Chang et al., 2014).

#### 3.1.5 Knowledge Gap and Aims:

Frequency of communication has been shown to be increased among PCPs with relationships with mental health specialists, however little is known about how co-location affects communications between providers (Pidano, Honigfeld, Bar-Halpern, & Vivian, 2014). Few previous studies have looked directly at communication between primary care and behavioral health providers in the context of co-location (Chang et al., 2014; Cohen et al., 2015; Ede et al., 2015; Guevara, Greenbaum, Shera, Bauer, & Schwarz, 2009; Williams, Shore, & Foy, 2006). Among those even fewer are specific to services for children (Guevara et al., 2009). No studies were found that investigated this difference using relational coordination.

The purpose of this chapter is to use relational coordination to quantify the quality of relationships and communications between co-located and off-site members of the behavioral healthcare team (BHCT). This aim is comprised of a series of sub-aims:

**Sub-Aim 2.1:** To quantify the differences in relationship and communication quality between co-located and off-site BHPs and PCPs.

**Sub-Aim 2.2:** To quantify the differences in reports of relationship and communication quality based on the functional role of the respondent.

**Sub-Aim 2.3:** To determine if individual reports of relational coordination are correlated with provider perceptions of job satisfaction and behavioral health care access and quality.

**Sub-Aim 2.4:** To quantify the differences in reports of relationship and communication quality, perceived access and quality of behavioral care between urban and rural providers.

The primary independent variables were co-location, respondent role (BHP or PCP), and rural setting. The primary dependent variables were reports of relational coordination and provider perceptions of job satisfaction, perceived quality of care, and perceived access to care. Relational coordination also served as an independent variable in relation to secondary dependent variables of job satisfaction, perceived quality of care, and perceived access to care.

Philosophically, the population of interest for this study are all of the different stakeholders who make up the behavioral health care teams for children in the state of Nebraska. However, logistic, ethical, and methodological considerations make a complete census of this entire population unfeasible. Instead this study focused on collecting data from three distinct populations at integrated clinics: 1) the primary care medical providers (PCPs) providing care for children in Nebraska, 2) the specialist behavioral health providers (BHPs) for children in Nebraska, and 3) the patient care coordinators (PCCs) that work with the PCPs and BHPs.

## **3.2 Methods:**

### 3.2.1 Eligibility and Sampling:

Sampling for the survey was at the clinic level with all providers who met the eligibility criteria at each of the identified clinics being invited to participate. To be eligible for inclusion participants needed to: 1) be either a primary care provider (MD, DO, NP, APRN, or PA) with a specialty in either pediatrics or family practice, be a behavioral health provider (Psychiatrist, Psychologist, or LIMHP, LMHP), or be a patient care coordinator; 2) work with patients under the age of 12 (and/or their families); and 3) be located at least part time at a co-located primary care clinic within the state of Nebraska.

For the purposes of this study, integrated clinics were operationally defined as any outpatient primary care clinic (either family medicine or pediatrics) that had a behavioral health provider who sees patients on-site at least part time. There were 38 clinics originally identified as being potentially eligible for this study through organizational meetings and existing professional networks. Correspondence with the administrators of major health care systems in the state identified a further 11 clinics and an additional 9 primary care clinics were found to advertise behavioral health services on their websites for a total of 61 potentially eligible clinics.

Identified clinics were then contacted to verify their eligibility and that of their providers. Of these, 3 were removed because they were not primary care locations, a further 9 were removed because they denied that any behavioral health providers saw children at their location, and one was removed in order to avoid duplicate responses because all of the clinic's providers also saw patients at another clinic included in this study. This process generated a list of eligible clinics and providers that served as the sampling frame for the survey. A total of 371 providers at 48 clinics were invited to participate.

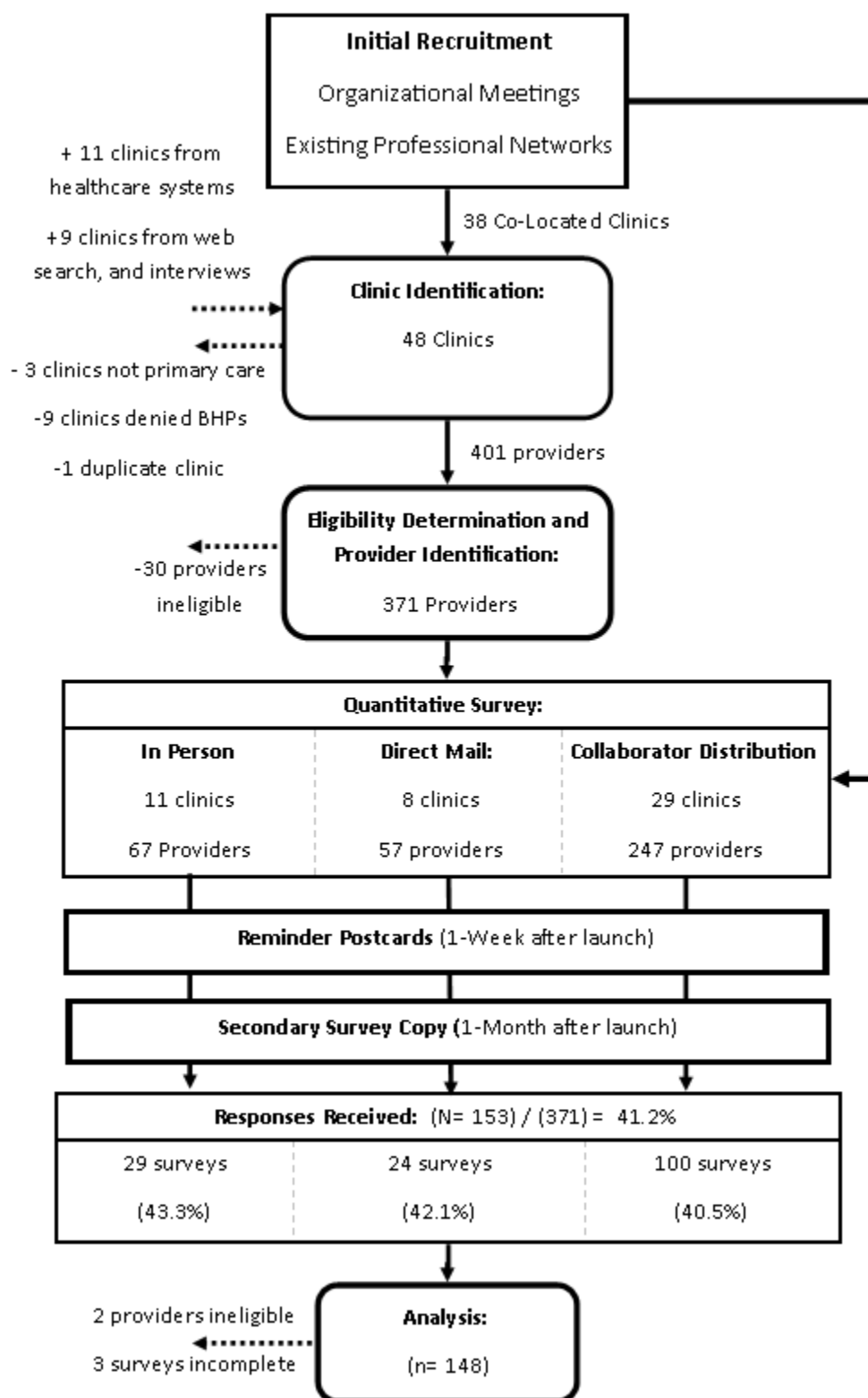
### 3.2.2 Survey Distribution and Follow-Up:

Three distribution strategies were employed. At 29 clinics the surveys were provided as a packet to the collaborative partners who distributed them to other providers. Surveys were dropped off in person at 11 clinics within the two major metropolitan areas at which no collaborative partner could be recruited. Surveys were mailed directly to participants at 9 clinics in more remote areas which could not be easily reached in person (n=9) and at which no collaborative partner could be recruited. Participants directly mailed their responses using self-addressed stamped envelopes provided in order to maximize confidentiality. Return envelopes were labeled with packet numbers to allow linkage to their clinic of origin, but not to the individual provider.

Personalized follow-up postcards were sent to each eligible participant at one week after survey launch to remind participants and to provide the URL to the electronic version. A second reminder survey was sent at one month following the survey launch. This follow-up procedure was inspired by Hoddinott & Bass (1986). The survey was primarily administered on paper, however data management and an alternative electronic version of the survey were provided through the REDCap electronic data capture tools (Harris et al., 2009). A cover page explained the study and informed consent on the first page of the survey. See Figure 5 for details on the overall sampling procedure and response rates for the three distribution methods.



Figure 5: Methodological diagram of Chapter 3.



### 3.2.3 Survey Instrument and Measures:

#### *3.2.2.1 Relational Coordination Survey:*

The quality of communication and relationships between providers was evaluated by use of the Relational Coordination Survey (RCS). The RCS is a 7 element scale asking questions about four domains of communication (frequency, timeliness, accuracy, and problem-solving) and three domains of relationships (shared knowledge, shared goals, mutual respect) on a 5-point Likert-like scale (Gittell, 2002). It has been well established as a valid and reliable scale and extensively used previously in many different health care settings (De Kort, Dessers, & Van Hootehem, 2015; Gilmartin, Pogorzelska-Maziarz, Thompson, & Sousa, 2015; Gittell et al., 2008; Havens et al., 2010; Tuominen et al., 2014). Additionally, a systematic review found that the Relational Coordination Survey is the only reliable and valid instrument tool for measuring teamwork in healthcare among both bounded and unbounded teams (Valentine, Nembhard, & Edmondson, 2015).

Rather than looking at the specific interactions between two individuals, the RCS evaluates relationships between the different functional roles involved in a larger process (Gittell, 2006). In this case, the functional roles are the different members of the behavioral care team and the process is the behavioral health care of their patients. Participants were asked to complete this scale for each of the functional roles as well as other members of their own functional role. The specific items of the RCS were adapted to describe the focal process of behavioral health care delivery. Example items from this specific study include “Do people in these groups communicate with you in a *timely* way about your patients’ behavioral healthcare?” or “How much do people in these groups *know* about the work you do in caring for patients with behavioral healthcare needs?” Due to the proprietary nature of the RCS and the service use agreement governing the license for this study, the full survey instrument used cannot be

included. Each respondent provided a raw value for each of the seven domains (e.g. frequency, shared knowledge, etc.) in relation to each of the functional roles (PCPs, Psychiatric Providers, Nurses, etc.) The functional roles included in this survey were adapted from the list of BHCT members elicited in Chapter 1. Functional roles of behavioral health providers was broken into co-located and off-site groups to allow for direct comparison.

### *3.2.2.2 Provider Satisfaction and Perceptions of Care:*

Provider satisfaction was measured by three 5-point Likert questions asking providers to rate their agreement with the following statements: 1) “I find my work personally rewarding;” 2) “Overall, I am pleased with my work;” and 3) “Overall, I am satisfied with my current practice.” These three questions are part of a larger well validated measure of physician job satisfaction, the Provider Work Survey (PWS), and showed the highest eigenvalues for the Global Job Satisfaction (GJS) subscale in factor analysis (Williams et al., 1999). The PWS has been used to estimate job satisfaction in physician as well as in multidisciplinary teams (Lichtenstein, Alexander, McCarthy, & Wells, 2004; Linzer et al., 2000).

Providers’ perceptions of care quality, access to care, and met needs were measured by 3 face valid questions on a 5-point Likert scale. Providers were asked to rate their level of agreement with the following three statements: “I am able to meet the behavioral health needs of my patients,” “My patients with behavioral health needs are able to access all of the services they require,” and “My patients with behavioral health needs receive high quality care.”

### *3.2.2.3 Demographic Information:*

Demographic information was collected including duration of time in practice, duration of time in clinic, gender, race/ethnicity, and county of residence. Questions on professional background have been used in a previous study to describe behavioral health providers in

integrated primary care (Beehler, Funderburk, Possemato, & Dollar, 2013). In this current study these questions included the primary clinical role, time in current role, provider type, specialty, and degrees/certifications. One question asked whether the provider had received training specific to behavioral health clinic integration and asked them to describe that training. As county definitions of rurality may not adequately account for lived experience, a supplemental question was used to allow providers to self-identify their practice as a rural setting. The survey itself and the online delivery system were pilot tested by a small convenience sample of PCPs and BHPs prior to the launch of the survey.

#### 3.2.4 Sample Size Calculation:

Previous studies have using the RCS in healthcare have found standard deviations of between 0.3 and 0.84 with most being around 0.6 (Coffey, 2015; Gittell et al., 2008b; Havens et al., 2010; Lundstrøm et al., 2014; Noel et al., 2013; Sakai, Naruse, & Nagata, 2015). While no studies were found that specifically compared relational coordination between rural and urban areas or in pediatric outpatient behavioral health clinics, studies of relational coordination of other factors in healthcare teams found mean differences of 0.11 to 2.2 (Coffey, 2015; Havens et al., 2010; Lundstrøm et al., 2014; Noel et al., 2013; Sakai et al., 2015). Based on these data and a nominal power of 0.8, an estimation of necessary sample size was calculated using SAS/STAT 9.4 software (SAS Institute Inc., 2013). The results of this calculation suggest that a sample size of roughly 200 providers should yield sufficient power to detect most expected effect sizes. Meta-analysis of previous studies has documented low response rates as a concern for surveys of health care professionals with an overall average response rate of 53% (Cho, Johnson, & Vangeest, 2013). In order to ensure that there were sufficient responses despite the expected low response rate, all eligible providers were invited to participate. This sampling method also optimizes the use of the RCS as a network analysis tool.

### 3.2.5 Data Analysis:

Analysis and variable computation for the RCS was based on the Guidelines for Theory, Measurement and Analysis published by the Relational Coordination Research Collaborative (Gittel, 2011). Individual-level scores of relational coordination were calculated for each respondent. For  $k$  functional roles,  $7+k$  scores were calculated at the individual level: an average for each domain as the unweighted mean across functional roles and an average for each functional role as the unweighted mean across domains. Additionally, an individual level RC composite scale value was calculated as the average of all 7 domain averages. Exploratory factor analysis was performed to determine if the scale values should be treated as single factors and Chronbach's alpha was calculated to determine the reliability and validity of each scale variable for this sample.

Measures of rurality were computed based on the county of residence and clinic location. For each location rurality was calculated as a dichotomous variable based on the U.S. Office of Management and Budget definition (OSMB). This OSMB definition and is a commonly used county-level measures of rurality in health policy research (Coburn et al., 2007). Any provider who worked in a clinic within a rural county, lived in a rural county, or self-reported a rural setting was classified as rural for analysis.

Descriptive statistics were generated for all variables. Sub-aim 2.1 was addressed by within-subjects comparison of these ratings performed by matched pair t-test. Sub-aim 2.2 was addressed by comparing the means of individual level RC values between functional roles using ANOVA with post-hoc comparisons made by least significant difference test. Sub-aim 2.3 was addressed by regression analysis and construction of Pearson's  $r$  correlation coefficients between RC variables and provider satisfaction, quality of care, and access to care. Specific objective 2.4

was addressed by comparing the means of the individual and scale RC values, provider satisfaction, perception of care quality, and met need by two independent sample t-tests across dichotomous rural / urban locations.

### **3.3 Results:**

#### 3.3.1 Respondent Characteristics:

Responses were received from a total of 145 providers and an additional 2 contacted the investigator to inform him that they did not see children as patients, and so were removed from the list of eligible providers. This left an overall response rate of 39.3%. Of the eligible clinics, 46 (95.8%) of the clinics provided at least 1 survey response. A complete description of survey respondent characteristics can be found in Table 6.

Table 6: Characteristics of survey respondents.

	Urban	Rural	Total	Miss:
<b>Total Respondents (n)</b>	93 (63.3%)	54 (36.7%)	147	1
<b>Gender *</b>				6
Male	33 (35.6%)	13 (21.7%)	46 (32.4%)	
Female	58 (64.4%)	38 (78.3%)	96 (67.6%)	
<b>Race</b>				9
White / Caucasian	87 (95.5%)	49 (96.1%)	133 (95.7%)	
Black / African-American	3 (3.4%)	0 (.0%)	3 (2.2%)	
Asian	1 (1.1%)	2 (3.9%)	3 (2.2%)	
<b>Hispanic Ethnicity</b>	2 (2.3%)	0 (.0%)	2 (1.4%)	8
<b>Time Practicing</b>				6
Less than 1 year	5 (5.5%)	3 (5.9%)	8 (5.6%)	
1 – 5 years	24 (26.4%)	15 (29.4%)	39 (27.5%)	
6 – 10 years	15 (16.5%)	11 (21.6%)	26 (18.3%)	
11 – 20 years	14 (15.4%)	11 (21.6%)	25 (17.6%)	
21 – 30 years	21 (23.1%)	6 (11.8%)	27 (19.0%)	
More than 30 years	12 (13.2%)	5 (9.8%)	17 (12.0%)	
<b>Time in Current Clinic</b>				6
Less than 1 year	13 (14.3%)	8 (15.7%)	21 (14.8%)	
1 – 5 years	39 (42.9%)	19 (37.3%)	58 (40.9%)	
6 – 10 years	14 (15.4%)	7 (13.4%)	21 (14.8%)	
11 – 20 years	13 (14.3%)	7 (13.4%)	20 (14.0%)	
21 – 30 years	10 (11.0%)	7 (13.7%)	17 (12.0%)	
More than 30 years	2 (2.2%)	3 (5.8%)	5 (3.5%)	
<b>Participant Role</b>				2
Primary Care Physician	47 (50.5%)	25 (46.3%)	72 (49.7%)	
Primary Care Mid-Level	6 (6.5%)	14 (25.9%)	20 (13.5%)	
Psychologist	28 (30.1%)	11 (20.4%)	9 (6.1%)	
Counselor or Other BHP	3 (3.2%)	4 (7.4%)	7 (4.7%)	
Care Coordinator / Social Worker	9 (9.7%)	0 (0.0%)	9 (6.0%)	
<b>Received Integration Training:</b>	42 (46.2%)	18 (36.0%)	60 (42.6%)	6
<b>Avg Days/Week with BHP On-Site:</b>	2.7 ± 1.5	2.5 ± 1.8	2.6 ± 1.6	

\* Rural respondents were significantly more likely to be female than were urban respondents.

### 3.3.2 Factor Analysis:

Internal reliability and convergent validity was assessed by constructing a Chronbach alpha for the different dimensions of the relational coordination survey, the three satisfaction items, and the three items regarding perceptions of care quality and access. For this sample the

alphas for relational coordination, satisfaction, and perceptions of care were found to be 0.843, 0.842, and 0.868 respectively. As all of these values were above the threshold of 0.8 it was decided that the use of them as scales was justified.

An exploratory factor analysis for the relational coordination variables was performed. Principal component analysis found that all 7 of the relational coordination components loaded onto a single factor, although after promax rotation a two factor loading on which accurate and problem solving communication as well as shared goals and mutual respect loaded onto one factor, while frequency of communication, timeliness of communication, and shared knowledge loaded onto a second. Despite the two-factor structure suggested by promax rotation, it was decided to use a single relational coordination factor for subsequent analyses due to the strong loadings on principal component analysis, the lack of theoretical support for the two factor structure found, and the consistent use of relational coordination as a single factor in existing research. Detailed results from the factor analysis is provided in Table 7.

Table 7: Factor analysis for relational coordination survey components.

		Principal Component Analysis		Promax Rotation: Standardized Regression Coefficients	
		Factor 1 Loadings:	Factor 2 Loadings:	Factor 1 Loadings:	Factor 2 Loadings:
Communication Domains	Frequent	<b>0.686</b>	-0.58365	-0.13789	<b>0.96611</b>
	Timely	<b>0.77815</b>	-0.27539	0.22622	<b>0.683</b>
	Accurate	<b>0.72294</b>	0.19873	<b>0.66002</b>	0.14913
	Problem-Solving	<b>0.57541</b>	0.24443	<b>0.61068</b>	0.02659
Relationship Domains	Shared Goals	<b>0.77672</b>	0.37563	<b>0.86954</b>	-0.01289
	Shared Knowledge	<b>0.73285</b>	-0.30184	0.17101	<b>0.6886</b>
	Mutual Respect	<b>0.75026</b>	0.34628	<b>0.82354</b>	0.00523
	<b>Eigenvalue</b>	<b>3.6331</b>	<b>0.8678</b>		



### 3.3.3 The Association of Co-location and Relational Coordination:

Scores for individual dimensions as well as a total score were calculated on a scale from 1 to 5 with higher values representing higher quality relationships and communications. Within subject estimates of the total scale and all seven individual dimension reports of relational coordination for both co-located primary care and behavioral health providers were significantly greater than that for off-site providers. Results of these analyses are provided in Table 8.

Table 8: Within-subjects comparison of relational coordination reported by all participants (BHPs, PCPs, and PCCs) who worked with both co-located and off-site providers.

	Primary Care Providers		Behavioral Health Providers	
	Mean Difference	Sig. †	Mean Difference	Sig. †
Number of Reports (N): *	112		124	
Communication:				
Frequent	1.40 ± 1.3	<.0001	1.08 ± 1.4	<.0001
Timely	1.11 ± 1.0	<.0001	0.89 ± 1.0	<.0001
Accurate	0.49 ± 0.8	<.0001	0.56 ± 0.8	<.0001
Problem-Solving	0.18 ± 0.4	0.0030	0.18 ± 0.4	0.0005
Relationships:				
Shared Goals	0.43 ± 0.7	<.0001	0.42 ± 0.7	<.0001
Shared Knowledge	0.90 ± 0.9	<.0001	0.80 ± 0.9	<.0001
Mutual Respect	0.60 ± 0.8	<.0001	0.53 ± 0.7	<.0001
Total Relational Coordination:	0.90 ± 0.8	<.0001	0.72 ± 0.7	<.0001

† Significance values calculated by matched pair t-test comparison of co-located and off-site providers.

\* Not all respondents provided answers for each dimension of relational coordination.

### 3.3.4 Relational Coordination across Respondent Role:

There was no significant difference in total relational coordination reports between primary care, behavioral health, or patient care coordinators. Reports of problem solving communication was the only dimension of relational coordination which show significant

differences. Post-hoc tests found that primary care providers rated communication to be more problem solving ( $4.2 \pm 0.6$ ) than behavioral health providers ( $4.0 \pm 0.6$ ). See Table 9 for details.

Table 9: Reports of relational coordination by respondent role.

	Respondent Role:			
	Primary Care Providers	Behavioral Health Providers	Patient Care Coordinators	All Respondents:
Number of Respondents (N) †	92	47	9	148
Communication				
Frequent	$3.6 \pm 0.8$	$3.8 \pm 0.6$	$3.5 \pm 0.6$	$3.6 \pm 0.8$
Timely	$3.1 \pm 0.7$	$3.2 \pm 0.5$	$3.6 \pm 0.5$	$3.2 \pm 0.6$
Accurate	$3.8 \pm 0.9$	$4.0 \pm 0.6$	$4.0 \pm 0.7$	$3.9 \pm 0.8$
Problem Solving *	$4.2 \pm 0.4$	$4.0 \pm 0.6$	$4.3 \pm 0.6$	$4.2 \pm 0.5$
Relationships				
Shared Goals	$3.9 \pm 0.7$	$3.8 \pm 0.5$	$3.9 \pm 0.7$	$3.9 \pm 0.6$
Shared Knowledge	$3.3 \pm 0.7$	$3.2 \pm 0.6$	$3.4 \pm 0.3$	$3.3 \pm 0.6$
Mutual Respect	$3.8 \pm 0.8$	$3.8 \pm 0.6$	$4.1 \pm 0.8$	$3.8 \pm 0.7$
Total Relational Coordination	$3.6 \pm 0.6$	$3.7 \pm 0.4$	$3.8 \pm 0.3$	$3.7 \pm 0.5$

\* Significant difference between respondent role at the 0.05 alpha level by ANOVA. Post-hoc LSD between primary care and behavioral health providers was also significant.

† Not all respondents provided answers for each dimension of relational coordination.

### 3.3.5 Relational Coordination across the Behavioral Healthcare Team:

Relational coordination values were also calculated for each of the different functional roles of the behavioral health team. Overall, respondents reported the highest level of relational coordination with co-located primary care providers ( $4.3 \pm 0.6$ ) and co-located behavioral health providers ( $4.1 \pm 0.8$ ). The lowest levels of relational coordination were reported with government agencies ( $2.9 \pm 0.8$ ), schools / daycares ( $3.2 \pm 0.8$ ) and psychiatric providers ( $3.3 \pm 0.9$ ).

All three respondent roles rated their relational coordination with others of their own role to be the highest. There was no significant difference in the ratings of relational coordination with primary care physicians between respondent roles, however reports of relational coordination with behavioral health providers (both co-located and off-site) were significantly higher from behavioral health provider respondents than those reported by primary care providers. Patient care coordinators reported significantly higher levels of relational coordination with others in their own functional role than did either primary care providers or behavioral health providers. Relational coordination with nurses was also rated significantly higher by patient care coordinators than by behavioral health providers. Relational coordination with psychiatric providers, schools, or government agencies were did not differ significantly by respondent roles. A matrix of relational coordination reports between functional roles is provided in Table 10.

Table 10: Relational coordination matrix.

	Relational Coordination Reported By:			
	Primary Care Providers	Behavioral Health Providers:	Patient Care Coordinators:	All Respondents:
Number of Respondents (N=)	92	47	9	148
<b>Functional Roles Reported On:</b>				
Primary Care Providers (Co-Located)	<b>4.2 ± 0.6</b>	4.3 ± 0.5	4.3 ± 0.4	4.3 ± 0.6
Primary Care Providers (Off-Site)	<b>3.3 ± 0.9</b>	3.3 ± 0.6	3.6 ± 0.6	3.3 ± 0.8
Behavioral Health Providers (Co-Located) *	4.0 ± 0.9	<b>4.5 ± 0.3</b>	4.2 ± 0.5	4.1 ± 0.8
Behavioral Health Providers (Off-Site) *	3.2 ± 0.8	<b>3.7 ± 0.6</b>	3.2 ± 0.3	3.3 ± 0.8
Patient Care Coordinators / Social Workers *	3.7 ± 1.0	3.6 ± 1.0	<b>4.6 ± 0.3</b>	3.7 ± 1.0
Nurses *	3.9 ± 0.8	3.7 ± 0.8	4.3 ± 0.4	3.9 ± 0.8
Psychiatric Providers	3.3 ± 0.9	3.1 ± 0.9	3.6 ± 0.5	3.3 ± 0.9
School / Daycare Personnel	3.1 ± 0.8	3.4 ± 0.6	3.0 ± 0.9	3.2 ± 0.8
Government Agencies	2.9 ± 0.9	3.1 ± 0.6	3.0 ± 0.9	2.9 ± 0.8
<b>Total Relational Coordination:</b>	<b>3.6 ± 0.6</b>	<b>3.7 ± 0.4</b>	<b>3.8 ± 0.3</b>	<b>3.7 ± 0.5</b>

\* Significant differences between ratings based on respondent role were detected by ANOVA.

Post-Hoc comparisons were by least significant difference tests.

### 3.3.6 Differences in Relational Coordination between Urban and Rural Clinics:

Urban respondents reported significantly higher levels of overall relational coordination ( $3.8 \pm 0.4$ ) than their rural peers ( $3.5 \pm 0.6$ ;  $p=0.0028$ ). When broken into individual components of relational coordination, urban respondents tended to report more timely ( $p=0.016$ ), accurate ( $p=0.012$ ), and problem solving communication ( $p=0.029$ ) as well as reported being more likely to share goals ( $p=0.030$ ) and higher levels of mutual respect ( $p=0.005$ ) than did rural respondents. There were no significant differences in reports of shared knowledge or frequency of communication. When broken down by individual functional roles, urban respondents reported significantly higher quality communication and relationships with co-located primary care providers ( $p=0.015$ ), co-located behavioral health providers ( $p=0.002$ ), and patient care coordinators / social workers ( $p < 0.0001$ ). Urban providers appeared to have greater relational coordination with primary care nurses ( $p=0.047$ ), and psychiatric providers ( $p=0.026$ ). Rural providers appeared to have stronger relational coordination with schools, however this did not meet the 0.05 alpha level ( $p=0.0832$ ). Urban and rural comparisons of relational coordination are shown in Table 11.

### 3.3.7 Satisfaction and Perceptions of Care:

Behavioral health providers reported higher levels of satisfaction and perceived access than primary care providers. They found their work statistically significantly more personally rewarding ( $p=0.046$ ) and reported higher overall levels of workplace satisfaction ( $p=0.05$ ) than primary care providers. They also appeared to have higher ratings on the other two measures of work place satisfaction, but these did not meet statistical significance at the 0.05 alpha level. Behavioral health providers also perceived their patients to have higher access to behavioral health services ( $p=0.001$ ), higher met need ( $p < 0.0001$ ), and to receive higher quality behavioral

health care ( $p < 0.0001$ ) than primary care providers. Comparisons of satisfaction and perceived access, met need, and quality of care by respondent role is provided in Table 12. Satisfaction ( $r = 0.22$ ;  $p = 0.0091$ ) and perceived access scales ( $r = 0.49$ ;  $p < 0.001$ ) were found to be weakly but statistically significantly positively correlated with overall relational coordination.

Table 11: Urban and rural differences in reports of relational coordination.

	Urban	Rural	Total †	Sig.*
<b>Number of Respondents (N=)</b>	93	54	148	
<b>Communication:</b>				
Frequent	3.7 ± 0.7	3.5 ± 0.9	3.6 ± 0.8	0.2330
Timely	3.3 ± 0.6	3.0 ± 0.7	3.2 ± 0.6	<b>0.0162</b>
Accurate	4.0 ± 0.7	3.6 ± 0.9	3.8 ± 0.8	<b>0.0120</b>
Problem-Solving	4.2 ± 0.6	4.0 ± 0.4	4.2 ± 0.5	<b>0.0294</b>
<b>Relationships:</b>				
Shared Goals	4.0 ± 0.5	3.7 ± 0.8	3.9 ± 0.7	<b>0.0296</b>
Shared Knowledge	3.3 ± 0.6	3.2 ± 0.7	3.3 ± 0.6	0.0977
Mutual Respect	4.0 ± 0.7	3.6 ± 0.8	3.8 ± 0.8	0.0052
<b>Functional Roles Reported On:</b>				
Primary Care Providers (Co-Located)	4.3 ± 0.5	4.1 ± 0.6	4.3 ± 0.6	<b>0.0148</b>
Primary Care Providers (Off-Site)	3.4 ± 0.8	3.3 ± 0.8	3.3 ± 0.8	0.4817
Behavioral Health Providers (Co-Located)	4.3 ± 0.6	3.8 ± 1.0	4.1 ± 0.8	<b>0.0021</b>
Behavioral Health Providers (Off-Site)	3.5 ± 0.6	3.2 ± 0.9	3.3 ± 0.8	0.0698
Patient Care Coordinators / Social Workers	4.0 ± 0.9	3.3 ± 1.0	3.7 ± 1.0	<b>&lt;.0001</b>
Nurses	4.0 ± 0.7	3.7 ± 0.8	3.9 ± 0.8	<b>0.0466</b>
Psychiatric Providers	3.4 ± 0.9	3.1 ± 0.9	3.3 ± 0.9	<b>0.0255</b>
School / Daycare Personnel	3.1 ± 0.7	3.4 ± 0.8	3.2 ± 0.8	0.0832
Government Agencies	2.9 ± 0.8	3.0 ± 0.9	2.9 ± 0.8	0.3871
<b>Total Relational Coordination:</b>	3.8 ± 0.4	3.5 ± 0.6	3.7 ± 0.5	<b>0.0028</b>

\* Significance of difference between urban and rural providers as measured by independent sample t-test.

† One provider did not report on rurality.

Table 12: Reports of satisfaction and access to behavioral health care by provider role.

	Primary Care Providers	Behavioral Health Providers	Patient Care Coordinators / Social Workers	Total:	Sig.*
<b>Number of Respondents (N=)</b>	91	46	9	146	
I find my work personally rewarding.	4.3 ± 0.7	4.5 ± 0.5	4.3 ± 0.5	4.4 ± 0.6	<b>0.0450</b>
Overall, I am pleased with my work.	4.3 ± 0.6	4.5 ± 0.5	4.3 ± 0.5	4.3 ± 0.6	0.0603
Overall, I am satisfied with my current practice.	4.2 ± 0.7	4.3 ± 0.6	4.0 ± 0.5	4.2 ± 0.7	0.1929
<b>Satisfaction Total:</b>	4.3 ± 0.6	4.4 ± 0.5	4.2 ± 0.4	4.3 ± 0.6	0.0583
My patients have adequate access to behavioral health services.	2.6 ± 1.3	3.4 ± 1.1	2.8 ± 0.8	2.9 ± 1.3	<b>0.0003</b>
I am able to meet my patients behavioral health needs.	2.9 ± 1.0	4.0 ± 0.7	3.7 ± 0.5	3.3 ± 1.0	<b>&lt;0.0001</b>
My patients receive high quality behavioral health care.	3.3 ± 1.1	4.4 ± 0.7	3.9 ± 0.8	3.7 ± 1.1	<b>&lt;0.0001</b>
<b>Access Total:</b>	2.9 ± 1.0	3.9 ± 0.7	3.4 ± 0.5	3.3 ± 1.0	<b>&lt;0.0001</b>

\* Significant differences between primary care and behavioral health providers were calculated by independent sample t-test.

### **3.4 Discussion:**

This study used the relational coordination survey, an established and validated instrument to quantifiably measure the relationships and communications between the various members of the behavioral health care team identified in Chapter 1 at co-located clinics across the state of Nebraska. This study empirically demonstrated the differences in relationships and communications between co-located and off-site providers, examined the relative strengths of the ties between different functional roles, and detected significant correlations between relational coordination and provider perspectives of behavioral health care quality and workplace satisfaction. Additionally, this study described how these associations differed between rural and urban settings. By doing these things, this study provides proof of concept that relational coordination as a theoretical model, and the relational coordination survey as a specific tool, can be useful in evaluating future interventions to integrate care. Further it serves as model of how such a technique can be used to evaluate the process of integration on a state-wide level and provides lessons on how future such studies can be improved.

#### 3.4.1 Co-Located and Off-Site Providers:

The most important finding of this study is that communication and relationships between co-located providers is significantly higher quality than that between off-site providers across all seven dimensions of relational coordination. While a previous study has shown that co-location was associated with an increased amount of coordination, this is the first to our knowledge that demonstrated that the quality of the communication and relationships within that coordination was likewise improved (Pfefferle et al., 2006; Guevara et al., 2009).

This finding has significant implications for primary care clinics. A recent study found that the strategy most commonly identified by PCPs to improve behavioral health services for their

patients was to improve the referral process, many of whom viewed poor communication between providers as the primary complaint (Burfeind et al., 2014). However, in the same study, far fewer PCPs (only 17%) endorsed co-location (Burfeind et al., 2014). Yet this current study found that co-location itself was associated with improvements in communication between providers.

Although the cross sectional nature of this study cannot show that the improvement in relationships is directly caused by the process of co-location, it seems unlikely that co-location is not at least partially responsible for the effect. As the process of integration continues, it is important that prospective evaluation is done to determine which of the strategies utilized are effective. When combined, these two findings strongly suggest that improvements in the relationships and communication between providers is a likely mediating factor in the previously observed association between integrated care and improved patient outcomes (Asarnow et al., 2015).

#### 3.4.2 Relational Coordination between Functional Roles:

When viewing the relational coordination matrix, it is an interesting finding that each of functional role tended to report the highest level of communications and relationships with other members of their own role. This is a pattern that has been established in previous studies of relational coordination (Gittell, 2006). This finding makes sense in light of previous studies which found that the philosophical differences between disciplines was a barrier to integrated care (Kathol et al., 2010; Williams, Eckstrom, Avery, & Unützer, 2015). However, if looking at the reports of co-located providers, this difference in reported relational coordination between within and across functional rolls appears to decrease significantly. The dissolution of boundaries between the individual disciplines is one of the goals of fully integrated care, so this finding



suggests that the integration of care is at least to some part successful. We should expect to see further reductions in this pattern as integration continues to progress along the continuum.

The reports of relational coordination with patient care coordinators was mixed. Whereas providers who worked with PCCs on staff had very high reports for the role of PCCs and social workers, those who did not had much lower reported relational coordination. One explanation of this is that there is a similar effect of co-location occurring with PCCs that was found in regards to PCPs and BHPs. Another possible explanation is that patient care coordinators are a relatively new development in primary care. Providers who have not had an opportunity to work with them closely may have only had interactions with social workers involved in different organizations for different purposes and may not have the same perception of their functional role.

Meta-analysis has shown that effective communication between primary care physicians and psychiatrists is associated with improved patient outcomes (Foy et al., 2010). However, relational coordination with psychiatric providers was one of the lowest levels reported by both primary care providers and behavioral health specialists. Co-location of psychiatric providers into primary care would likely be associated with the same improvement in relational coordination this study found with co-located primary care and behavioral health providers. While some of the clinics participating in this study are piloting co-located psychiatrists, further research is needed to see how this will influence relational coordination.

#### 3.4.3 Satisfaction and Perceptions of Care:

Another important finding was that overall levels of relational coordination were significantly correlated with providers' perceptions of the access to and quality of behavioral health care available to their patients. This adds to the body of research supporting the

importance of relational coordination in patient outcomes found in other healthcare settings (De Kort et al., 2015; Gittel et al., 2008; Noel et al., 2013; Romero, Señarís, Heredero, & Nuijten, 2014; Sakai et al., 2015). This was also true, though less strongly so for providers' perceptions of workplace satisfaction. While not shown directly in the results, the correlation of relational coordination on perceptions of access to and quality of care was stronger for primary care providers than it was for behavioral health providers. This is in line with another study that found that improving the referral process, including communication, was the strategy most frequently identified by PCPs to improve access to behavioral health services but less strongly endorsed by BHPs (Burfeind et al., 2014).

One explanation of why the correlation was so much stronger with access to care than it was with satisfaction is the choice of behavioral health care as the focal process. Whereas the relational coordination in this focal process is directly related to the quality and access to behavioral health care for their patients, communications regarding behavioral health concerns only make up a fraction of all the different interactions that exist in a primary care clinic. However, the fact that behavioral health specific relational coordination still had a significant correlation with overall workplace satisfaction shows just how large a role these concerns play in a primary care providers' everyday life.

Additionally, it is interesting to note that BHPs' ratings of quality of care were significantly higher than those reported by PCPs. This difference could be a result of the greater knowledge that BHPs have in both what sort of behavioral health services the patients are receiving as well how these services compare to current best practices. Another possible explanation could be that there is a greater response bias amongst behavioral health providers to report higher quality of care as they may feel a greater responsibility and ownership of this care than the PCPs do. For whatever reason, this finding underlines the importance of including multiple perspectives in

measures of perceived care, and suggest caution in direct comparisons between studies of different provider roles.

Finally, despite the improved relationships and communication associated with co-location, many providers still did not feel that they were able to access sufficient behavioral health care for their patients. One possible explanation for this is the lack of reliable access to psychiatric consultation, which was both suggested by the low relational coordination with psychiatric providers as well as explicitly mentioned as an open response comment. Additional research is necessary to determine what further steps are necessary.

#### 3.4.4 Differences in Relational Coordination between Rural and Urban Clinics:

This study adds to the existing literature that suggests that rural communities have worse access to behavioral health services than their urban peers (Douthit et al., 2015; Gamm, Stone, & Pittman, 2010). Rural clinics reported improved relational coordination with co-located providers when compared to off-site providers and relational coordination was correlated with an increased ability to meet the behavioral health needs of their patients. This suggests that co-location of behavioral health providers into primary care is improving the ability of rural providers to meet the needs of their patients with behavioral health concerns. However, despite this improvement, rural clinics still had overall lower relational coordination between providers than urban clinics. In light of this finding it can be suggested that co-location alone is insufficient to completely make up for the discrepancy in access in these communities. This supports existing qualitative research which found that clinics in rural settings had greater difficulty implementing IPC models (McNeil et al., 2015; Williams et al., 2015). Clearly, more work is necessary in order to reduce disparities in access to behavioral health services among the rural communities. A follow-up study should

be considered to directly compare behavioral health care access between rural clinics with co-located BHPs and those without.

Though it did not quite reach the level of statistical significance with the current sample, the finding that providers in rural clinics had greater relational coordination with schools than that reported by providers in urban clinics is of interest. There are a number of possible explanations for this finding. Firstly, the schools may be filling a larger role in the BHCT to make up for the overall lack of specialized resources in rural areas. This finding is also interesting in light of existing studies that suggest that there are higher levels of stigma towards behavioral health in rural areas than one experiences in urban areas (Gamm et al., 2010). Another explanation could be in terms of transportation. It has been documented in existing literature that transportation is a greater barrier in rural communities (Syed, Gerber, & Sharp, 2013). Further, the use of school based health centers has often been proposed as a strategy to overcome transportation and other access barriers by meeting children where they are (Keeton, Soleimanpour, & Brindis, 2012). It is entirely possible that this increased relationship with the schools in rural communities is a reflection of the need to overcome transportation barriers.

#### 3.4.5 Limitations and Lessons Learned:

The greatest limitation of this study is the limited response rate of only 41.2% to the survey. Such a limitation is hardly unique, as healthcare providers are a notoriously difficult population to access for survey research and response rates to such surveys have been falling steadily over the past half-century (Cho et al., 2013). While there is evidence to suggest that strategies such as monetary incentives, repeated personalized follow-ups, buy-in from leadership, and direct telephone calls from fellow physicians can increase response rates, these can be prohibitively expensive or otherwise unobtainable to studies without considerable support (Cho

et al., 2013). Although the use of collaborative partners to distribute surveys was intended to improve response rates, ultimately they were not remarkably different from the other two methods of distribution.

While lower than ideal, the response rate is actually on par with other studies of relational coordination among health care providers (Coffey, 2015; Hartgerink et al., 2014). Additionally, many of the barriers encountered by the investigator in conducting this study were reflective of the same barriers to communication and accessibility faced by providers and patients: difficulty obtaining contact information for providers, timing communication within busy schedules, and finding time for tasks that are not directly reimbursed. This is likely complicated by the increasing number of competing surveys directed to healthcare providers (Klabunde, Willis, & Casalino, 2013). Finding an appropriate balance between recognizing the importance of research in evidence based practice and reducing the burden of that research on an already overworked population of healthcare providers will be an important task for medical science. Both empirical studies of methodologies as well as intense philosophical reflection upon these issues within professional organizations is necessary.

Another limitation of this study was the use of a cross-sectional comparison of relational coordination between co-located and off-site providers. This precludes the ability to draw a causal connection between co-location and relational coordination. Additionally, by depending on self-comparison between off-site and co-located clinics there is the potential that providers may be biased towards reports that paint their work in a positive light. The effect of biases intrinsic to self-report are mitigated by having different professionals rate each other, rather than having anyone rate themselves, however they still need to be considered. This can be directly addressed by comparing relational coordination with behavioral health providers as a whole

either longitudinally, before and after the implementation of co-location, or between co-located and non-co-located clinics.

Additional bias may have been introduced by the use of an initial sampling frame provided by a single organization. This may have led to some overrepresentation of the model of IPC practiced by that organization, however, this bias was minimal due to relatively comprehensive nature of the list and steps to identify and verify additional eligible clinics. Additionally, the reliance on existing networks to increase participation may lead to overrepresentation of some clinics where stronger relationships with the investigator existed. However, this and similar organizations are a significant force behind the move to integrate medical and behavioral health within the state. The overrepresentation of their model and philosophy may not be an artifact of the research, but actually represent the impact they are having on the state.

One lesson learned from this study was the detrimental effect of survey length on the response rate and quality. This appeared as a comment in a number of surveys that respondents found it to be too long. A few others did not complete the entire survey. The relational coordination survey also exists in a shorter form designed to be more accessible to a wider range of literacy levels (Gittell et al., 2008b). It might be beneficial to use this form in future studies.

One minor, though important, lesson learned for future surveys regards the striking similarity to the casual reader between the word “county” and the word “country,” as evident by the large number of participants who reported living in “USA” county. One strategy to prevent this problem in future studies would be to specify “within Nebraska” and offer an option for “I do not live in Nebraska.” Another alternative would be to give an example “(for example Douglas County).”

#### 3.4.6 Conclusions:

This study has conclusively shown that both primary care and behavioral health providers report significantly higher quality relationships and communication with co-located providers than they do with off-site providers across a wide range of different clinics. One of the greatest complaints of providers in traditional care is difficulties with the referral process and that meaningful feedback is not occurring. This issue can be directly addressed by co-location. However, co-location alone is not sufficient for true integration and some providers in co-located clinics still do not feel able to access high quality behavioral health care for their patients. Despite this, the value of co-location itself cannot be ignored. Further research should focus on how to cost-effectively and sustainably implement co-location and to identify what additional steps can be taken to improve relational coordination within integrated primary care clinics.

**CHAPTER 4: PARENT PERCEPTIONS OF BEHAVIORAL HEALTH CARE INTEGRATION**



## **4.1 Introduction:**

### 4.1.1 Behavioral Health for Children:

Social, emotional, and behavioral health problems are highly prevalent in children and adolescents in the United States (Perou et al., 2013). A nationally representative study, the National Comorbidity Survey Replication – Adolescent Supplement, found that nearly half of all adolescents will meet the criteria for a mental disorder at some point in their life, and that one in five will suffer severe impairment as a result (Merikangas et al., 2010a). Additionally, even when mental, emotional, and behavioral problems fail to meet diagnostic thresholds for specific disorders, they can still be associated with considerable impairment (Roberts et al., 2015). Suicide, the most visible result of mental illness is the 3<sup>rd</sup> leading cause of Americans between the ages of 10 and 14 and the second leading cause for those 15-19 (Heron, 2016). For these and other reasons, improving the mental health of young people in general and reducing the rate of youth suicide in specific have been identified as national public health goals as part of Healthy People 2020 (2010).

Treatment for childhood mental disorders include pharmacological, psychosocial, or combined interventions (Hoagwood et al., 2001). Although many children with mental disorders may continue to experience symptoms well into adulthood, evidence based treatments can lead to a significant and long lasting improvement in symptoms and can reduction in problem behavior later in life (Benjamin et al., 2013; Shaw et al., 2012; Thompson, 2009). Despite this, 46.6% of school aged children with emotional or behavioral difficulties are not receiving any sort medication or psychosocial treatment at all (Simon et al., 2015).

#### 4.1.2 The Role of Parents in Behavioral Health:

Parent perceptions play an important role in the behavioral health care of children. For example, parental perceptions of disease severity behavioral health is a strong determinants of whether or not a child will be able to access care (Corkum et al., 2015). This stands to reason because the parents of these children have significant financial, time, and emotional burdens of their own (Busch & Barry, 2007; Richardson et al., 2013). Parental perceptions of intangible barriers such as understanding treatment were directly associated with attendance at behavioral health appointments (Larson et al., 2013). In addition to access, involving parents and families in care itself has also been shown to be directly associated to the effectiveness in a range of different conditions (Abrahamse et al., 2015; Cobham et al., 2012; Dean et al., 2011; Hart et al., 2015; Robl et al., 2012).

#### 4.1.3 Integrated Primary Care:

Integration of behavioral health care into primary care, known as integrated primary care (IPC) has been identified as an important strategy to improve the quality of and access to behavioral health services (Blount & Miller, 2009; Thielke et al., 2007). One of the ultimate goals of integrated care is to create a patient experience where all health needs are met in a single location (Heath et al., 2013). However, despite the ostensible centrality of the patient experience in theoretical models of integrated care, often times the integration of care delivery *systems* are not resulting in an actual integration of patient care (Singer et al., 2011).

IPC can be a particularly difficult area of healthcare to measure in terms of patient perspectives, because while they generally view the concepts involved favorably, they are somewhat confused by the terms involved (Walker et al., 2013). Despite the difficulties, improving the patient experience is one of the triple aims of reforming the United States

healthcare system (Berwick et al., 2008). Therefore, being able to measure it will be an essential component of evaluating any intervention to improve healthcare.

#### 4.1.4 Knowledge Gap and Aims:

Other scales have been developed to measure patient perceptions of integration among adults or the elderly, but these do not take into account the specific needs of a pediatric population (Singer, Friedberg, Kiang, Dunn, & Kuhn, 2012; Uittenbroek et al., 2015). A recent study looking at how parents perceive communication between pediatricians and mental health providers in traditional off-site care found that parents wanted significant communication between their pediatricians and mental health providers, however that they did not feel that this desire was being met (Greene, Ford, Ward-Zimmerman, & Foster, 2015). Further, these parents felt that often the burden of relaying communication between providers fell to them (Greene et al., 2015). However, no studies were found that evaluated whether this communication was perceived similarly by parents within co-located settings.

The aim of this study is to pilot test a method of quantifying parent/guardian perceptions of behavioral health integration at co-located outpatient primary care clinics. This aim is comprised of three sub-aims:

**Sub-Aim 3.1:** To quantify parent / guardian perception of the BHCT composition.

**Sub-Aim 3.2:** To describe parent and family perceptions of teamwork and behavioral health care quality in IPC clinics for children.

**Sub-Aim 3.3:** To compare parent / guardian comfort with behavioral health services in a primary care setting with those at a behavior health specific clinic.

## **4.2 Methods:**

### 4.2.1 Eligibility and Sampling:

Participants were eligible if they met the following criteria: 1) they were the parent or guardian of a patient between the ages of 0 – 12; 2) they were presenting for an appointment with a behavioral health provider (BHP) at one of the participating IPC clinics; and 3) they were presenting for an appointment within the recruitment window. All eligible individuals seen at the participating clinics during the 1.5 month summer recruitment window were invited to participate.

Surveys were distributed to parents or guardians of patients by licensed psychologists at 4 different groups of integrated primary care clinics within a Midwestern state. In order to reach a heterogeneous sample of participants, these groups included an independent suburban pediatrics clinic, an independent rural pediatrics clinic, an urban pediatrics clinic within a larger healthcare system, and a four-clinic group within a smaller metropolitan area. These providers were recruited to act as collaborative partners during an earlier study of primary care and behavioral health providers at co-located primary care clinics across the state. Surveys were provided to each BHPs based upon their estimation of the number of eligible families they would see during the recruitment window. A total of 225 surveys given to the providers across the seven clinics of which a total of 16 completed surveys were received by the principal investigator and 13 were returned uncompleted for an overall response rate of 7.5%.

The surveys were given to BHP partners in a packet of individually sealed envelopes each containing the survey instrument, a cover letter describing the study and informed consent, and a self-addressed stamped envelope. Packet numbers were written on the return envelope to link surveys to their clinic of origin. BHPs were asked to deliver the survey after families had

completed their behavioral health appointments so that they would have at least one appointment from which to base their perceptions. Participants were asked if they have already participated prior to receipt of the survey in order to prevent duplicate responses. Participants were told that the survey is voluntary and this was also explained on the cover page of the survey. Participants mailed their responses directly to the PI to maximize confidentiality and to allow participants time to complete the surveys on their own time. Recruitment partners were contacted periodically to identify problems with data collection and to ensure it was being conducted according to the established protocol.

#### 4.2.2 Survey Instrument:

The Pediatric Integrated Care Survey (PICS), a recently validated survey intended to measure the parent/guardian perceptions of integrated care for children (Personal correspondence with Hannah Rosenberg, Sara Singer & Richard Antonelli.) This survey contains 3 components: a 21-item scale to measure the overall health and health care use of the patient, the 16-item core scale to measure the perceptions of integrated care, and an 11-item demographic questionnaire.

Items from this survey were adapted for use in a primary care outpatient setting, with patients who may not have multiple chronic conditions, and reduced to a more manageable length in order to reduce the burden on respondents. Ultimately, 8 questions regarding perceptions of integrated care and 8 demographic questions were adapted for use in final parent/guardian survey instrument. In order to minimize the size of the survey, none of the questions regarding health or health care use were included.

A statement describing behavioral health and an instrument regarding the members of the BHCT based on the roles elicited in an earlier qualitative study of providers was added before

integrated care instrument to quantify parent / guardian perceptions of BHCT composition. A supplemental demographic question assessed county of residence. As transportation and distance is a known barrier care to care, an additional question asked parents how far they traveled for their appointment. An additional question regarding parent / guardian comfort in receiving behavioral health care at primary care and specialized behavioral health locations was added to address aim 3.3. This instrument was then pilot tested by a small convenience sample of PCPs and BHPs and edited to make the language more accessible to a wider range of literacy levels. The final version of the parent/guardian survey is included in Appendix B.

#### 4.2.3 Data Analysis:

Descriptive statistics were generated for the BHCT composition item to address aim 3.1. Descriptive statistics were generated for the remaining items to address aim 3.2. Specific aim 3.3 was evaluated by comparing mean comfort level between primary care and specialized behavioral health settings using matched pair t-test. All quantitative analyses were performed using SAS/STAT software (SAS Institute Inc., 2013).

### **4.3 Results:**

#### 4.3.1 Respondent Characteristics:

The overwhelming majority of the respondents for the parent guardian survey identified as white, non-Hispanic, (87.5%). All but one were the biological parent, the other a foster parent of the child in regards to whom they filled out the survey. All but one of the respondents (92.9%) were females. Approximately half (46.7%) of the children reported on were female with an equal number male. One respondent did not report on their child's gender and another filled out the survey about multiple children of different genders. More than half of the respondents (64.3%)

were covered by private insurance. Only one respondent identified themselves as living in a rural setting. Respondent characteristics for the parent / guardian survey are given in table 13.

Table 13: Respondent characteristics of parent / guardian survey.

	Frequency (Percent)
<b>Number of Respondents (n=)</b>	16
<b>Respondent Gender</b> (Female)	15 (93.8%)
<b>Race / Ethnicity</b> (White Non-Hispanic)	14 (87.5%)
<b>Relationship to Child</b> (Biological Parent)	15 (93.8%)
<b>Child's Age *</b>	
Infant (Less than 1 year)	1 (6.7%)
1 to 3 years old	1 (6.7%)
3 to 6 years old	2 (13.3%)
6 to 9 years old	5 (33.3%)
9 to 12 years old	5 (33.3%)
Older than 12 years old	1 (6.7%)
<b>Child Gender *</b>	
Female	7 (46.7%)
Male	7 (46.7%)
<b>Insurance</b>	
Public	4 (25.0%)
Private	11 (68.7%)
Unknown	1 (6.3%)
<b>Identified as Rural</b>	1 (7.1%)
<b>Distance Traveled</b>	
Close enough to walk	1 (6.3%)
Less than 5 miles	6 (37.5%)
5 – 15 miles	7 (43.8%)
15 – 50 miles	1 (6.25%)
50 – 100 miles	1 (6.25%)

\*One respondent did not identify their child's age or gender and another reported on multiple children of different genders.

#### 4.3.2 Behavioral Health Care Team Composition:

On average, respondents endorsed  $3.9 \pm 1.6$  roles as being members of their BHCT. The most commonly endorsed roles were primary care physicians (78.6%) and psychologists (78.6%). Large portions of the participants did not know who psychiatric nurse practitioners (35.7%),

patient care coordinators (42.9%), other counselors or therapists (21.4%), nurses (21.4%), or government agencies (35.7%) were. The overwhelming majority of participants (85.7%) either did not know who government agencies were or did not want them on their behavioral health care team. Behavioral health care team endorsements are provided in Table 14.

Table 14: Behavioral Health Care Team composition on Parent / Guardian Survey.

	<b>Member of Behavioral Health Team</b>	<b>Wanted on Behavioral Health Team</b>	<b>Do Not Know Who These People Are</b>	<b>None of the Above</b>
Primary Care Physicians	13 (81.3%)	1 (6.3%)	0 (0.0%)	2 (12.5%)
Other Primary Care Providers	6 (37.5%)	2 (12.5%)	2 (12.5%)	6 (37.5%)
Psychiatrists	6 (37.5%)	2 (12.5%)	1 (6.3%)	7 (43.8%)
Psychiatric Nurse Practitioners	1 (6.3%)	1 (6.3%)	5 (31.3%)	9 (56.3%)
Patient Care Coordinators *	0 (0.0%)	1 (6.3%)	6 (37.5%)	9 (56.3%)
Psychologists †	12 (75.0%)	1 (6.3%)	0 (0.0%)	3 (18.8%)
Other Counselors or Therapists	7 (43.8%)	2 (12.5%)	3 (18.8%)	4 (25.0%)
Nurses	6 (37.5%)	1 (6.3%)	3 (18.8%)	6 (37.5%)
School Personnel	10 (62.5%)	2 (12.5%)	1 (6.3%)	3 (18.8%)
Government Agencies	1 (6.3%)	1 (6.3%)	5 (31.3%)	9 (56.3%)
<b>Average Number of Groups Endorsed as Member of BHCT: Mean (Std.)</b>				<b>3.9 (1.5)</b>

\* None of the clinics participating in the parent / guardian survey had patient care coordinators on staff.

† All of the collaborating BHPs distributing parent guardian surveys were licensed psychologists.

#### 4.3.3 Parent / Guardian Perceptions of Integration:

Overall, parents gave high rating of patient/family centered care. The majority of respondents strongly agreed or agreed that providers explain things in a way they can understand (93.8%), listen carefully to what they have to say (93.8%), and are comfortable telling providers



about their concerns (87.5%). More than half felt that providers understood how their child's behavior affected their whole family (81.3%) and that providers were willing to communicate with them outside of scheduled office appointments (56.3%).

Measures of teamwork and integration were less strong. Fewer, though still more than half felt that providers knew about the advice they received from other providers (69.2%) and felt that their child's providers worked together as a team (57.1%). Less than half agreed that someone explained to them who was responsible for the different parts of care (43.8%), and only 37.5% reported that their PCP personally introduced them to the BHP. Parents were overall satisfied with the quality of care they received (93.8%) and felt that the behavioral health services helped with the problem that their child came in for (87.5%).

Most parents felt comfortable seeing a BHP in a primary care location (93.8%) as well as at a specialized behavioral health clinic (87.5%). More than half of the parents surveyed felt that it was easy to get a behavioral health appointment (68.8%). Only a quarter (25.0%) of parents said they were able to get an appointment within 2 weeks, but the same number (25.0%) had to wait for longer than a month. The descriptive statistics of parent / guardian perspectives of care quality and integration are provided in Table 15.

Table 15: Descriptive statistics of parent / guardian survey responses. Question items shortened to fit table, see appendix A for full question language.

	Mean (Std.)	Frequency: Yes / Agree or Strongly Agree
<b>Patient / Family Centered Care:</b>		
Providers explain things in a way that I can easily understand.	4.4 (1.0)	15 (93.8%)
Providers listen carefully to what I have to say.	4.3 (1.0)	15 (93.8%)
Providers understand child's behavior affects my whole family.	4.1 (1.2)	13 (81.3%)
Providers are willing to talk in ways besides an office visit.	3.7 (0.7)	9 (56.3%)
Comfortable telling providers about my concerns with care.	4.0 (1.0)	14 (87.5%)
<b>Teamwork and Integration:</b>		
Each provider knows the advice I get from other providers.	3.6 (1.3)	11 (68.8%)
Explained who was responsible for different parts of care.	3.4 (1.0)	7 (43.8%)
My child's providers work together as a team.	3.8 (1.0)	10 (62.5%)
My PCP personally introduced me to the BHP (warm hand-off) *		6 (37.5%)
<b>Satisfaction and Quality:</b>		
Comfortable taking my child to see BHP at a primary care clinic.	4.6 (0.6)	15 (93.8%)
Comfortable taking my child to see BHP at a BH clinic.	4.2 (0.7)	14 (87.5%)
I am satisfied with my child's behavioral health care.	4.5 (0.6)	15 (93.8%)
It was easy to get an appointment to see a BHP.	3.8 (1.0)	11 (68.8%)
Helped with the problem that brought us in. *		14 (87.5%)
<b>Appointment Wait Time:</b>		
Same Day		0 (0.0%)
Less than 1 week		1 (6.3%)
1 -2 weeks		3 (18.8%)
2 weeks – 1 month		8 (50.0%)
More than 1 month		4 (25.0%)

\* Binary, not likert variable.

While parents agreed that they felt comfortable receiving behavioral health services both at primary care and specialized behavioral health locations, they appeared to rate their comfort at primary care settings higher ( $0.38 \pm 0.72$ ). However, when a matched pair t-test was performed to quantify this difference, the finding failed to reach statistical significance at the 0.05 alpha level ( $p=0.054$ ). A few parents specifically mentioned their preference for receiving behavioral health care at the primary care location in free response comments.

#### **4.4 Discussion:**

This chapter discusses parent / guardian perspectives of teamwork, integration, and satisfaction in integrated primary care clinics for children. While the results are limited by a low response rate, there are still some important findings in the data. Additionally, there are a number of important lessons learned to help improve both the instrument itself and the methodology for future studies.

##### 4.4.1 Parent / Guardian Perspectives of the Behavioral Health Care Team:

As expected, both primary care physicians and psychologists were the most frequently endorsed members of the BHCT. This is not-surprising given the fact that all of the survey respondents were at an appointment at a primary care clinic. What is surprising, is that not all respondents reported the psychologist or the PCP being a member of the BHCT despite the fact that all of the collaborative partners distributing surveys were licensed psychologists in primary care clinics. The fact that two respondents did not include the PCP as part of their BHCT and one indicated that they were wanted but missing suggests that these parents did not find care to be completely integrated despite co-location.

While specific results by clinic were not given to protect anonymity in such a small sample, the respondents who did not endorse psychologist membership were not limited to a single clinic. There are two possible reasons for this finding. The first is that for some reason they truly did not consider the psychologist part of the team despite the fact they were at an appointment with them. The second is that they did not know that the person whom they had just seen was a psychologist. Coupled with the substantial minority of patients who did not know who various listed members were, this finding suggests that the classifications of behavioral health care team members generated by the provider survey, does not necessarily match the way that parents and

guardians think of the different roles. Future research should involve focus groups and/or interviews with parents and guardians to explore how they conceptualize the different roles involved and to identify wording that is more accessible to the full range of parents and guardians.

Another interesting finding from the BHCT composition item is the endorsement of the schools and government agencies. Both of these external groups were identified by providers in an earlier study (results not shown) as being members whom parents were reluctant to include, often due to fear. However, in the case of schools, almost 80% of parents thought that the school was a member of the team or wanted the school to be a member of the team. There are a number of studies that have found that school based mental health services are effective and that parents prefer to seek help and behavioral health services from the schools (Angold et al., 2002; Guo, Wade, & Keller, 2008; Murry, Heflinger, Suiter, & Brody, 2011). This is an important area of research to determine how to balance these conflicting desires in order to meet the needs of the most children.

#### 4.4.2 Behavioral Health Services in a Primary Care Setting:

This study also adds to the growing body of literature to suggest that parents are comfortable and satisfied with receiving behavioral health services in a primary care setting (Burt et al., 2014; Gomez et al., 2014; Urion, 2014). This comfort is one of the primary justifications for the co-located model. This current study went further to suggest that parents found this setting preferable to a traditional setting. While it did not reach significance in this particular study, the fact that it came so close despite the extremely limited sample size is telling. Some of the strength of this preference could also have been due to the nature of the sampling. As the parents sampled were all seeing a BHP in a primary care setting, it is entirely likely that it would fail to capture

patients who did not. An alternative strategy would be to sample the parents of patients presenting for PCP visits rather than BHP visits.

#### 4.4.3 Parent / Guardian Perspectives of Integration:

One of the most important findings of this study is that despite the co-location of providers, many of the parents / guardians did not feel that care was truly integrated or that their providers were working together as a team. This supports the existing literature which described co-location as a distinct process from true integration (Blount, 2003). Additional research is needed to determine to what additional interventions beyond co-location can further improve teamwork amongst providers.

#### 4.4.4 Limitations and Lessons Learned:

Clearly, the greatest limitation of this study was the number of parent guardian surveys returned. This severely limits the ability of this study to compare the experience of families at individual clinics as well as to make an overall generalization of the experience of patients at integrated clinics in the state in general. This survey methodology was dependent on the number of parents/guardians that could be recruited for participation and adequate recruitment of parents was likewise dependent upon the active and enthusiastic cooperation of partners within the clinics. The success of this study was severely limited by our capacity to optimize the competing demands of focusing efforts on clinical sites with sufficient social capital and patient size to obtain the required number of participants while at the same time having a sufficiently diverse set of clinics.

There is a possibility that these results are being affected by selection bias, as there is no way to compare the few parents who responded to the apparent many who did not. It is entirely plausible that they may represent the subset parents who were particularly satisfied with the care

they received. Additionally, only one of the BHPs provided a number of surveys remaining after the end of the window so there is no way to tell if the response rate reflects parents willingness to participate in the survey or the degree to which the BHPs implemented the protocol.

There are several lessons to be taken home in regards to distribution and sampling methods of this study. One of the collaborative partners disclosed that she had been waiting for the survey recruitment window to end because her organization had been planning to distribute patient satisfaction surveys of their own and did not want to do two surveys at once. It is possible, that other providers chose not to participate, or terminated their participation early, due to interference from their own satisfaction surveys. An alternative strategy to using a new parent/guardian survey, as attempted in this study, would be to do secondary analysis of existing satisfaction surveys distributed by the providers or to add items of interest to existing satisfaction surveys.

Additionally, other collaborative partners distributing the surveys informed the investigator that timing survey distribution for after the session made it difficult to remember to distribute the survey because it did not flow well with the process of wrapping up the session. Also, the recruitment window occurred over the summer, which was found to be a time when fewer children were seeing behavioral health providers. An alternative strategy to this would be to have the front desk or other staff distribute the survey during check-in and to consider seasonal patterns in planning recruitment. Ultimately, any sampling strategy that requires participation of collaborative partners will be dependent on their buy-in to the project and will be limited by the other demands of their work.

**CHAPTER 5: CONCLUSION**

## 5.1 Discussion:

With all three chapters combined, this dissertation goes a long way towards describing the experience of behavioral health integration into primary care clinics for children. One of the greatest strengths of this project is the use of mixed methods to reach a more holistic understanding of the integration process as it is being implemented across the state of Nebraska. The interviews used a small, heterogeneous group of providers to identify and describe the different functional roles involved in the process of behavioral health service delivery and then the provider survey quantified the representation of these roles and determined if they could be generalized to clinics state wide. The relational coordination survey was able to empirically demonstrate that the relationships and communications between BHPs and PCPs were significantly better when co-located than they were with off-site collaborators, then the interviews were able elucidate why these differences were happening. Finally, the parent and guardian survey provides a model to incorporate parent and family perspectives into the overall gestalt.

### 5.1.1 Relational Coordination in integrated Care:

#### *5.1.1.1 Frequency and Timeliness:*

Frequency and timeliness were both areas in which the relational coordination survey found that communication with co-located providers were superior to that with off-site providers. The qualitative interview data provided many explanations for this phenomenon. One of these is the added ability to engage in face-to-face communication. This is something that routinely came up as a theme in the interviews but also something that was observed first hand while conducting them. Several times interviews were interrupted while another provider knocked on the door to ask a question about a patient.



For off-site providers, there were times identified when this sort of informal communication was still necessary. In these cases they relied on telephone calls, however, this elevates the level of complexity and difficulty to communication. One of these difficulties involves the timing and scheduling of communication. Whereas informal face-to-face communication can occur based on opportunity, telephone communication requires a significantly larger degree of planning. One of the psychologists interviewed explained that she would carry around a list of the bullet points that she wanted to mention to each of the co-located providers so that she would remember to bring it up when she saw them. The opportunity for communication would arise merely as a function of her occupying the same physical space as the physicians.

This sort of approach is not as effective with telephone communication as there are a number of additional steps involved. Although there is the chance that a telephone call will serendipitously be received at a time when the recipient is available, unlike with face-to-face communications it is impossible to know if the party one is calling will be available until after the call is made. What is far more likely is that they will be seeing a patient in which case, rather than resolving the issue behind the telephone call, this first communication will be required solely to plan a time for a second phone call. With each additional step that needs to be negotiated in the process, the probability that meaningful communication will occur decreases.

There is a similar comparison to be made for asynchronous modes of communication such as through the EMR system. In most co-located clinics, the BHPs and PCPs are within a single system and therefore share access to a single EMR platform. In this case, as both providers are actively seeing a patient and therefore have ethical access to the records, they have immediate on demand access to information.

For outside providers, there are mechanisms available to allow the same exchange of information, but again it involves numerous additional steps each of which increases the burden and adds another opportunity for error. In most circumstances this involves the signing of a disclosure of information by the parent and since these forms are not standardized, often a second disclosure will need to be signed at the other end to allow for bidirectional communication. Once signed, the providers now have the permission to share information, but before that can happen the mechanism by which the information is going to be shared needs to be negotiated. Even once a mutually agreeable (and HIPAA compliant) communication mechanism is identified, providers are still obligated to actively choose to send information each time. Their capacity to do so effectively is predicated on their ability to know what information will be desired by the other party. Whereas with a unified EMR system a provider can look up the desired information when needed, a separated system requires a choreographed exchange between multiple parties all of whom have other responsibilities and can forget.

The greatest concern identified by primary care providers with the psychologists and counselors that they referred their patients to was the feeling that once they made the referral they never heard back from them about their progress. The greatest concern identified by the behavioral health providers was when the primary care providers did not consult them and get their feedback prior to making treatment decisions with their shared patients. Both of these issues involve a failure of timely communication and both can be mitigated through the use of informal face-to-face communication and shared electronic charting systems.

#### *5.1.1.2 Accuracy:*

Accuracy in communications was another component of relational coordination that was found to be superior between co-located providers than with off-site providers on the provider

survey. However, there were very few mentions directly of issues with accuracy brought up in the interviews and those that did pertained more to insufficient information being provided rather than actual inaccuracy within the communication. This may be because the probes of the interview guide were less focused on accuracy than they were on timeliness and frequency.

One explanation for this finding could be the role of face-to-face communication with co-located providers. A previous study has described the use of text communications in place of face-to-face verbal conversation in medical teams removing important context elements from the message and increasing the chance of misinterpretation (Wu et al., 2014).

Some providers did mention working with co-located team members to implement standardized screening tools to be used with all of the patients who presented at the clinic. By using a standardized tool, it may also standardize the language used within the clinic and lead to improvements in communication accuracy, however future studies should more closely examine the role of accuracy in communications in co-located models.

#### *5.1.1.3 Problem Solving:*

Problem solving communication was another area of relational coordination that was found to be superior within co-located providers than with off-site providers, but also was not frequently addressed directly in the interviews. There were some participants who took issue with this question, some of whom even wrote in that they did not know what it was getting at. Problem solving communication is broken into a spectrum of assigning blame to problem solving, and as such is different from the other components of the relational coordination survey in that it may be perceived to have more a judgement value. It is possible that this was the least significant of the components because it was most affected by social desirability bias. However, it was still significant and so deserves to be explored.

One explanation for this could be related to the comparison between traditional referral models of care and more integrated forms of team care. A number of participants interviewed felt that there was an expectation that when a patient was referred to another provider that second provider took over responsibility for the specific concern precipitating the referral. That is to say that the second provider was expected to solve the problem and send back the family afterwards. In such a model of care, if there are problems with treatment it may predispose the assumption that there was some blame with the second provider or at least present the implication thereof.

Another explanation for the increased problem solving communication in co-located clinics could also play back into the opportunity for face-to-face communication. There are intrinsic values to face to face communication. A large amount of human communication occurs at the nonverbal and paraverbal levels and it has been shown that these forms of communication in clinical interactions can influence health care outcomes (Henry, Fuhrel-Forbis, Rogers, & Eggly, 2012). Additionally, face-to-face communication was found to be helpful in conflict resolution (Drolet & Morris, 2000). It is entirely possible that these cues allow for the same sort of problem solving communication and conflict resolution to occur within the context of integrated primary care clinics. In some of the more integrated clinics there are opportunities for scheduled team meetings to solve problems together, however where they are absent this sort of informal face-to-face consultation in many ways was able to fill the gaps. The role of informal consultation in overcoming barriers to integration has been documented in the existing literature (Hacker et al., 2013; Williams et al., 2015).

#### *5.1.1.4 Mutual Respect:*

Mutual respect is a relationship component of relational coordination that was frequently discussed in the interviews and also found to be strongly significantly greater among co-located providers. This supports previous findings that mutual respect was necessary for co-located services to work (Kathol et al., 2010). BHPs and PCCs both felt that when PCPs demonstrated their respect for them and they work they did, that it significantly improved their ability to work together as a team. There were a lot of little ways in which they did this including taking the time to know their names and specialties, referring to them with the same respect for their title that they show other physicians, avoiding technical medical jargon that is not easily understood by other professionals, and by including them in the day to day social functions of the clinic. This also emerged in the way that providers speak to their patients. It was frequently identified that when the providers show their respect for the other providers to the patients, those patients were more likely to make and show up for their appointments and to take the treatment plans seriously. Another aspect that contributed to mutual respect was the equitable distribution of resources and consideration of the different professionals in the designing the work processes of the clinic. While these things may seem like common sense, they are important to establishing a culture of mutual respect in an integrated clinic.

#### *5.1.1.5 Shared Knowledge:*

Shared knowledge was another relationship component that was found important to effective teamwork in the integrated primary care clinics. Many of the PCPs in the interviews and on the free response items felt that for off-site providers, they simply did not know what was going on. They didn't know if the patient had been seen, what they were working on, or whether it was helping. BHPs similarly reported that they did not always know when a patient had been

started on medication, even when this was a detriment to the specific therapeutic technique they were employing. This was also something that was observed from the parent / guardian surveys, as few parents felt that the different providers were aware of the advice the others had given them.

This phenomenon is likely something that will benefit from improvements in the use of unified EMR systems and frequent face-to-face communication, however, it is also possible that this is an area where the lack of structured meeting times are coming into play. Although the EMR and face-to-face communications allow for providers to share information, it may require a system in place to ensure that such exchange of information actually occurs. Another mechanisms that may be driving the improvement in shared knowledge could be the educational component some of the providers described. By increasing the base knowledge of all providers in evidence based practice for behavioral concerns, it is likely that they will be better able to keep track of what specifically is occurring with their patients.

#### *5.1.1.6 Shared Goals:*

Shared goals is the last component of relational coordination to be addressed. Generally in the interviewed providers felt that their goals were aligned with other providers in the general sense, but that there were areas in specific where there could be differences in opinion. Beyond providers, sharing goals with the patients is an important part of patient centered care.

A number of the survey participants wrote in that they did not know if they shared goals with off-site providers because of the lack of feedback they received from them. This was a common feature of the relationship components of relational coordination, which is not surprising given that interactivity between relationships and communication is a central principle of the relational coordination model (Gittell, 2006). It is likely that regular interaction and

communication that occurs as a result of co-location may be indirectly driving the improvements in relationships.

#### 5.1.2 Implications of Relational Coordination:

The primary finding of this study is that the level of relationships and communication between co-located providers, whether they are primary care or behavioral health specialists, is significantly better than that between off-site providers. Relational coordination provides a useful theoretical model to explore what was happening in these interactions that made them superior to those with off-site providers. Based on the findings that relational coordination between co-located providers was greater than that between off-site providers, this project supports continuing to integrate behavioral health. Although on average the relational coordination between co-located providers was greater than that between off-site providers, the different clinics and their providers were by no means homogenous. Some of the clinics had significantly greater relational coordination than others. By combining the findings of the provider survey and the interviews, we can explore the factors contributing to the different components of relational coordination between providers at the co-located clinics and contrast that to their experiences with off-site providers.

There are profound implications for increasing the relational coordination between team members of the behavioral health care team. One of the biggest factors in the level of unmet need for behavioral health care faced by the country is the shortage of providers (Bringewatt & Gershoff, 2010; Browne et al., 2013; Caccavale et al., 2012; Goldman, 2014; Krisberg, 2015; Thomas & Holzer, 2006). Additionally, provider burn out has been identified as a significant issue for physicians and behavioral health care workers and is contributing to the shortage of an adequate work force (Dewa et al., 2014; Morse et al., 2012; Starmer et al., 2016). Previous studies

have found that relational coordination among health care teams was positively associated with improved workplace satisfaction (De Kort et al., 2015; Gittell et al., 2008). This study builds upon those findings to extend this phenomenon specifically to the area of integrated primary care clinics and found that relational coordination was correlated with a significant, although moderate, improvement in workplace satisfaction. If the state of Nebraska is going to maintain its behavioral health workforce into the long-term, investments in improving relational coordination are crucial.

#### 5.1.3 From Co-Location to Integration:

The standard framework of integrated care is a spectrum from traditional siloed care to a truly transformative integration (Heath et al., 2013). While co-location alone appears to have many advantages, there are a number of issues that seem to be preventing some of the co-located clinics from advancing towards more integrated models of care.

##### *5.1.3.1 Removing Boundaries in Space and Time:*

The first of these factors is that co-location benefits providers by putting them together, however, many of these benefits cannot occur if there are still physical and temporal separation between them. In some of the clinics, the BHPs were seated in the same areas and shared the same working spaces as the PCPs. They identified this as being a great facilitator both to the patterns of informal communication described above, but also as a way to overall improve their relationships with other providers and sense of teamwork. On the other hand, in other clinics the behavioral health providers were segregated into separate areas where they were not engaged in the day to day social interactions of the clinic. Providers in these latter cases felt that they were lacking this connection. Space is often at a premium, and the allocation of it is by no means an easy task, however, if the purpose of co-location and integration is to create a team that works



together these considerations must be taken into account. Unfortunately, space and other considerations can also lead to a temporal separation in some cases. Multiple providers identified greater difficulties in communication and relationships with providers that did not work on the same days that they did. Additional research is necessary to identify ways to optimize the allocation of space and time in order to streamline teamwork.

#### *5.1.3.2 Patient Care Coordinators and Nurses as Boundary Spanners:*

One of the methods by which teams build relational coordination is through boundary spanners, or staff members whose primary role is to integrate the work of those around them (Gittell et al., 2010). Transforming to an integrated model of care requires significant buy-in and commitment from the providers involved. Meaningful communication and collaboration between providers involves a substantial investment of time and energy, and under current fee for service models of healthcare reimbursement there is no incentive for this sort of collaboration. In order to remain economically viable, both BHPs and PCPs need to prioritize billable services that directly contribute to the clinics overall funding stream. While PCCs may be a cost effective strategy to off-load some of this burden from the more expensive providers, incorporating them into the BHCT may not currently be an option for all clinics. However, interviews with the PCCs found that it often took physicians time to learn what they could do for them.

#### *5.1.3.3 Financial Barriers:*

This is not the only area in which financial constraints are a barrier to integrated behavioral health care. Another of the key issues that arose was in the differential treatment of physical and behavioral issues by insurance payers. Other studies have already documented the fact that behavioral concerns take primary care providers more time and are reimbursed less than physical complaints (Meadows et al., 2011). However, even for behavioral health providers this

can be an issue as preauthorization for behavioral health issues can prevent same day treatment even when a co-located BHP is available. While the Patient Protection and Affordable Care Act provides incentives for the integration of primary care and behavioral health, and requires that states provide mental health and substance use services to adults covered by Medicaid equitably with other health services, it does not necessary include behavioral health services for children (2010). States across the country are implementing administrative, regulatory, and funding strategies to support integrated care (Bachrach et al., 2014). Nebraska is making some steps, such as the creation of Heritage Health, a contract between the Nebraska Department of Health and Human Services with the UnitedHealthCare community plan, Nebraska Total Care, and Well Care of Nebraska to provide integrated medical, behavioral, and pharmacy services by integrating existing publically funded managed care services (Department of Health & Human Services, 2016). However additional regulation may be necessary to hold private insurance providers to the same standard.

#### 5.1.4 Integrating Psychiatric Providers:

One of the key findings in both chapter 1 and chapter 2 of this study was the unmet need for psychiatric providers in the behavioral health care team and the low quality of relationships and communication between psychiatric and other providers. Co-location of psychiatric providers into primary care would likely be associated with the same improvement in relational coordination this study found with co-located primary care and behavioral health providers. This speculation is supported by anecdotal reports from providers in the small number of participating clinics pilot testing it. However, the perceived limit of the psychiatrists' role to the relatively rare case of particular complexity or severity, coupled with the overall shortage of psychiatric providers raises concerns about the feasibility and sustainability of widespread implementation of such a strategy.

The use of video conferencing technology to provide psychiatric care over a distance, known as telehealth or telepsychiatry, has been proposed as a strategy to mitigate the shortage of psychiatric providers particularly among within rural and underserved communities. Meta-analysis and systematic reviews of the existing literature have found that these technologies are not significantly different from traditional care in terms of diagnostic assessment or patient outcomes (Diamond, 2010; García-Lizana & Muñoz-Mayorga, 2010; Hyler, Gangure, & Batchelder, 2005). Telepsychiatry was also found to be particularly useful in schools or with patients involved in the juvenile justice system (Kaliebe, Heneghan, & Kim, 2011). However, telehealth is frequently limited by the same sort of problems with reimbursement that face traditional behavioral health services and by state laws regarding licensure and scope of practice (Sulzbacher, Vallin, & Waetzig, 2006; Torous, Keshavan, & Gutheil, 2014). Despite the promise, if telepsychiatry is going to adequately integrate psychiatric providers into primary care clinics, further research is necessary to evaluate its effect on relational coordination between providers.

Both this and previous work have shown that teamwork in integrated care involves distinct processes of consultation, coordination, and collaboration (Cohen et al., 2015). Any integrative process to improve teamwork with psychiatric providers would need to accommodate all three. One such proposed strategy is the Massachusetts Child Psychiatry Access Project (MCPAP). MCPAP is a state wide program that is intended to provide easy collaboration between PCPs and Child Psychiatrists to help PCPs in dealing with the behavioral health needs of their patients. MCPAP offers PCPs a central phone number where they can call in to receive a consultation from a participating psychiatric provider within an hour and can refer patients with more complex cases for direct evaluation by the psychiatrist (Connor et al., 2006; Sarvet, 2011; Straus, 2014). This program was widely used by PCPs and resulted in drastic improvements in the perceived ability of PCPs to meet the needs of their patients with behavioral health issues

although there was still issues with wait times between referral and appointment when direct evaluation was necessary (Sheldrick, Mattern, & Perrin, 2012; Straus, 2014). Many of the providers felt that it was difficult to get a timely response from psychiatrists and a program like this would directly address this issue.

According to the National Network of Child Psychiatry Access Programs, 29 states, including our neighbors in Iowa and Missouri, have implemented such systems. However, Nebraska has fallen behind this trend. By providing a statewide estimate of relational coordination between the primary care providers and psychiatrists in the state of Nebraska, this study allows a unique opportunity to evaluate the population level effect of such an intervention both cross-sectionally in comparison to neighboring states that have already implemented such systems, as well as serving as a baseline for prospective study in the future when the state ultimately follows suit.

## **5.2 Recommendations:**

Based on the findings of this project and their implications, there are a number of recommendations that can be made:

Co-location is associated by an improvement in relational coordination between professionals which in turn is correlated with improved access to behavioral health care. Policies should be implemented at the clinic, health care system, and state level to continue to support further co-location of behavioral health providers in primary care clinics for children. These policies should include evaluation of parent / family perspectives and objective outcomes.

Patient care coordinators and other designated coordination personnel have many important roles in the effective integration of physical and behavioral health services for children.

For this reason we recommend that clinics without PCCs currently on staff look into the possibility of bringing them on board. Further, as many providers may not yet be familiar with the value that these individuals can bring to the team, we recommend that the state of Nebraska and other funders provide incentives to defray the cost of these new staff until cost effectiveness can be more extensively demonstrated. Additionally, the primary care nursing staff may be an underutilized resource in this role, however this is very much dependent on the training and comfort of the particular nurses. We recommend that clinics speak with their nursing staff about how they view their roles and whether they would be interested in a greater involvement in behavioral health care.

Shared systems, including electronic medical records, are one of the key facets of integrated care in the standardized framework (Heath et al., 2013). This study adds further evidence that shared EMR systems are also important facilitators to teamwork between providers. Therefore, it is the first recommendation from this project that wherever possible clinics make an effort to ensure that the EMR systems they use are implemented in a way that is accessible to any co-located behavioral health providers. Further, as many of the members of the behavioral health team are external to the clinic, we recommend that the state of Nebraska look into standardizing disclosure of information forms and ensuring that the implementation of the state-wide health information exchange, NeHIE, is done in a way that meets the needs of behavioral health for children.

Psychiatric providers were routinely identified as being missing from the behavioral health team and were reported as one of the lowest levels of relational coordination amongst any of the BHCT members. These issues were particularly significant among rural clinics in Nebraska. In order to address this, we recommend that the State of Nebraska act to fund a pilot test of

Nebraskan Child Psychiatry Access Program following the evidence based model of the Massachusetts Child Psychiatry Access Program.

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## APPENDIX A: PROVIDER SURVEY

### Defining Behavioral Health:

*There are many different definitions for terms such as Behavioral Health or Mental health. The Agency for Healthcare Research and Quality, in their Lexicon for Behavioral Health and Primary Care Integration, defines mental health care as being “care to help people with mental illnesses (or at risk) to suffer less emotional pain and disability- and live healthier, longer, more productive lives” and defines behavioral health care as “an umbrella term for care that addresses any behavioral problems bearing on health, including mental health and substance abuse conditions, stress-linked physical symptoms, patient activation and health behaviors.” These definitions may be different from those that you, your patients, or their families normally use. **While filling out this survey, please think of behavioral health inclusively as any way in which behaviors, emotions, thoughts, or mental processes affect the ability of your patients and/or their families to live happy, healthy, and successful lives.***

### Members of the Behavioral Health Care Team:

*Please think of the team of all the different people whom you work with or are otherwise involved in providing for the psychological or behavioral health needs of your patients. For each group of people listed below, please indicate which category you think most describes your own role and whom you would consider part of that team.*

	These people are part of the behavioral health team for my patients:	I would like to work with these people but currently don't:	This is the role that best describes me:
Primary Care Physicians (Pediatricians or Family Practice Physicians)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Primary Care Providers (Physician Assistants or Nurse Practitioners)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Psychiatrists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Psychiatric Nurse Practitioners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient Care Coordinators / Social Workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Psychologists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Counselors or Therapists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schools or Daycare (Teachers, Nurses, or Other Personnel)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Government Agencies (CPS, DHHS, Foster Care, Law/Judicial)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*If there are any other people with whom you regularly interact to provide for these needs, please list them here:*

---

---



**Please indicate how much you agree with each of the following statements:**

9. I find my work personally rewarding.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

10. Overall, I am pleased with my work.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

11. Overall, I am satisfied with my current practice.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

12. My patients have adequate access to behavioral health services.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

13. I am able to meet my patients behavioral health needs.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

14. My patients receive high quality behavioral health care.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**Demographics:**

*In order to make sure that we are reaching a representative group of people we'd like to ask you some questions about yourself and your practice.*

15. How long have you been in practice?

- Less than 1 year  
 1 – 5 years  
 6 – 10 years  
 11 – 20 years  
 21 - 30 years  
 More than 30 years

16. What is your gender?

- Female  Male  Other: \_\_\_\_\_

17. Are you Hispanic, Latino, or of Spanish origin?

- Yes  No

18. Which of the following best describes your racial or ethnic background?

- White or Caucasian  
 Black or African-American  
 Asian  
 Native Hawaiian/Pacific Islander  
 Native American/Alaskan Native  
 Other: \_\_\_\_\_

19. Which county do you live in?

\_\_\_\_\_

20. Do you see patients at a primary care clinic?

- Yes  No

20a. If so, please list the clinic(s) below:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

20b. How many days a week is there a behavioral health specialist at the clinic(s)?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

21. How long have you been at this location?

- Less than 1 year  
 1 – 5 years  
 6 – 10 years  
 11 – 20 years  
 21 - 30 years  
 More than 30 years

22. What degrees / certifications do you have?

\_\_\_\_\_

23. What is your specialty?

\_\_\_\_\_

24. Have you received any specific training in integrating medical and behavioral health?

- Yes  No

24a. If so, please describe the training you received: \_\_\_\_\_

\_\_\_\_\_

25. Do you see patients under the age of 12?

- Yes  No

26. Do you consider the area where you live to be rural?

- Yes, definitely  
 Yes, somewhat  
 No  
 I don't know

27. Do you consider the area where your practice is located to be rural?

- Yes, definitely  
 Yes, somewhat  
 No  
 I don't know





## APPENDIX B: PARENT / GUARDIAN SURVEY

### Defining Behavioral Health:

While filling out this survey, please think of your child's **"behavioral health"** to mean **any way your child's actions, feelings, or thoughts affect your family's ability to live happy, healthy, and successful lives.**

### Members of the Behavioral Health Care Team:

Please think of all of the people who work with you and/or your child to help with your child's behavioral health needs. These people make up your child's Behavioral Health Care Team. For each of the groups listed below, please check the box to show which ones you think of as part of your child's Behavioral Health Care Team.

	These people are part of my child's Behavioral Health Care Team:	I would like these people to be part of my child's Behavioral Health Care Team but they aren't:	I don't know who these people are:
Primary Care Physicians (Pediatricians or Family Practice Physicians)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Primary Care Providers (Physician Assistants or Nurse Practitioners)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Psychiatrists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Psychiatric Nurse Practitioners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient Care Coordinators / Social Workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Psychologists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Counselors or Therapists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schools or Daycare (Teachers, Nurses, or Other Workers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Government Agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If there is anyone else on your team please list them here:

---

If there is anyone else you would like to be part of your team but isn't please list them here:

---

**For the next questions check the box to show how much you agree with each statement.  
Please think about all of the people in your child's Behavioral Health Care Team.**

1. My child's providers explain things in a way that I can easily understand.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree
  - Strongly Agree
2. Each of my child's providers knows about the advice I get from the other providers.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree
  - Strongly Agree
3. I feel comfortable telling my child's providers about my concerns with my child's care.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree
  - Strongly Agree
  - I have no concerns
4. My child's providers listen carefully to what I have to say about my child's health and care.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree
  - Strongly Agree
5. One of my child's providers explained to me who was responsible for the different parts of my child's care.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree
  - Strongly Agree
6. My child's providers work together as a team.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
7. My child's providers understand how my child's behavior affects my whole family.
  - Agree
  - Strongly Agree
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree
  - Strongly Agree
8. My child's providers are willing to talk with me in ways besides an office visit, such as phone, email, skype, or telehealth.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree
  - Strongly Agree
9. I am comfortable taking my child to see a behavioral health provider at a primary care clinic.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree
  - Strongly Agree
10. I am comfortable taking my child to see a behavioral health provider at a behavioral health clinic.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree
  - Strongly Agree
11. I am satisfied with my child's behavioral health care.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree
  - Strongly Agree
12. It was easy to get an appointment to see a behavioral health provider.
  - Strongly Disagree
  - Disagree
  - Neither Agree nor Disagree
  - Agree

Strongly Agree

13. Did your child's primary care provider personally introduce you to the behavioral health provider?

Yes    No    I don't know

14. Has the care your child received at this clinic helped with the reason you brought him or her here?

Yes    No    I don't know

15. How long did you have to wait for an appointment with a behavioral health provider?

- I got an appointment the same day
- Less than 1 week
- 1 – 2 weeks
- 2 weeks – 1 month
- More than 1 month

If you had to wait more than 1 month please indicate how long you had to wait:

\_\_\_\_\_

**Details:**

*These last few questions are about you and your child. Remember, this survey will not have your name attached and these answers will **not** be used to identify you in any way.*

16. What is your gender?

- Female  Male  Other: \_\_\_\_\_

17. What is your relationship to the child who you answered questions about in this survey?

- Mother  
 Father  
 Foster parent or guardian  
 Other adult relative  
 Other: \_\_\_\_\_

18. What is the age of your child?

- Infant (less than 1 year old)  
 1 to 3 years old  
 3 to 6 years old  
 6 to 9 years old  
 9 to 12 years old  
 Older than 12

19. What gender is your child?

- Female  Male  Other: \_\_\_\_\_

20. What health insurance, if any, covers most or all of your child's medical care?

- Medicaid/Medicare  
 Private/Commercial Insurance  
 My child has no health insurance  
 I don't know

21. Is your child Hispanic, Latino, or of Spanish origin?

- Yes  No

22. Which of the following describes your child's racial or ethnic background?

- White or Caucasian  
 Black or African-American  
 Asian  
 Native Hawaiian/Pacific Islander  
 Native American/Alaskan Native  
 Other: \_\_\_\_\_

23. What is the main language spoken at your child's home?

- English  
 Spanish  
 Other: \_\_\_\_\_

24. What county do you live in?

\_\_\_\_\_

25. How far did you have to travel to get to your appointment today?

- Close enough to walk  
 Less than 5 miles  
 5 – 15 miles  
 15 – 50 miles  
 50 – 100 miles  
 More than 100 miles

26. Do you consider the area where you live to be rural?

- Yes, definitely  
 Yes, somewhat  
 No  
 I don't know