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A Technical Integration of Primary Care into a Behavioral Health Site

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April 14, 2017

Dedication

For Dan, who has been continuously supportive in tangible and intangible ways, I could never have done this without your unfailing encouragement, willingness to dream big, and to live with a perspective of abundance. For Anya, Ian and Eliza Beatrice, I wish you inspiration to continue your curious pursuits and to seek lifelong learning in diverse opportunities. Thank you for doing homework with me. For my parents, Larry and Mary, who filled in many gaps to help me reach this goal, thank you for your example and loving support.

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Abstract

People with persistent mental illness experience more chronic disease and co-morbidities than the general population, impacting their quality of life and increasing the cost of health care. In spite of the increased need for primary care services, people with mental illness encounter barriers to health care including lack of access to care, and a shortage of both primary care and psychiatric care providers. While this challenge was previously addressed by attempting to integrate behavioral health care into primary care settings, recent research indicates that a more successful model is reversed shared care, or the integration of primary care into a behavioral health site. Integration may take many forms including standardized integration, interpersonal integration, technical integration, and physical integration. The goal of this technical integration project is to integrate primary care assessment information, medication lists, and laboratory results into holistic behavioral health assessment with the use of a health information exchange (HIE) tool as a first step towards reversed shared care.

Keywords: technical integration, behavioral health, primary care, collaboration, mental illness

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Executive Summary

People with persistent mental illness experience an increased number of health disparities and comorbidities than the general population. Heeding the mandate to ensure health care for this vulnerable population, healthcare providers historically have prioritized the integration of behavioral health into primary care clinics. However, recent evidence supports reversed shared care, the integration of primary care into behavioral health sites.

As an initial step toward the integration of primary care into behavioral health, this paper details a technical integration pilot project at a behavioral health site in partnership with a Health Information Exchange (HIE). The adoption of a technological integration tool facilitated requests for primary care assessment data, including laboratory results, medication lists, and relevant assessment information for integration into behavioral health medication reviews and psychiatric evaluations for improved client outcomes. Stakeholder investment at the behavioral health site, as well as the primary care clinic from which assessment data was requested, was fundamental to project success.

Project outcomes were measured both qualitatively and quantitatively. Quantitative outcomes were measured by a chart review of primary care data that was successfully returned as requested within the technological integration tool. Qualitative outcomes were measured with the use of a pre/post perception survey of interprofessional behavioral health team members including social workers, nurse practitioners, and support staff. The survey measured perceptions of efficiency of integration, degree of collaboration with primary care providers, and effectiveness of integration of primary care assessment data into behavioral health medication reviews and psychiatric evaluations. In addition to improved perceptions of degree of efficiency and degree of collaboration, the HIE tool also improved coordination of care between primary

care and behavioral health clinicians. More time is needed to accurately assess the effectiveness of integration. The ongoing investment of time and additional training will increase HIE tool use and the integration of primary care into behavioral health.

A Technical Integration of Primary Care into a Behavioral Health Site

Introduction and Background

Within the United States, over 40 million people experience mental illness each year (National Alliance on Mental Illness [NAMI], 2016.). Frequently associated with comorbidities, and contributing to barriers to health care, mental illness is a costly disease. According to the Centers for Disease Control and Prevention, the cost of treating mental illness and comorbidities in the 1990s was over 40 billion dollars (Centers for Disease Control and Prevention [CDC], 2013). Existing research documents physical health disparities within the mental health population. Due to both medication side effects, as well as lifestyle habits, people with mental illness have an increased amount of cardiovascular disease, metabolic syndrome, and obesity (Stanley & Laugharne, 2014). In addition, people with mental illness are more likely to lack adequate housing, consistent employment and health care due to social isolation and socioeconomic disadvantages. Furthermore, the stigma associated with mental illness, the lack of primary care providers and a shortage of psychiatrists contribute to barriers to comprehensive health care services for this population.

Historically, primary care providers have attempted to integrate mental health services, including psychiatric medication management into primary care practice with varying success due to lack of providers' expertise, challenging patient behaviors, insufficient appointment times and on-site resources. Behavioral health sites that are staffed by interprofessional teams of mental health experts, including advanced practice registered nurses specialized in primary care, are better prepared to care for patients with mental illness and are a more appropriate location for the integration of primary care services (Knapik & Graor, 2013; Lawrence, 2010). Offering care

in one location removes barriers to additional transportation, scheduling, and improves communication between clinicians.

Problem Statement

The focus of this Doctor of Nursing Practice (DNP) project was to answer two questions. First, would the implementation of an evidence-based health information exchange (HIE) tool for the integration of primary care and behavioral health improve the behavioral health clinicians' perceptions of efficiency of integration, effectiveness of integration, and degree of collaboration between primary care and behavioral health clinicians for patients with persistent mental illness? Second, would the HIE tool be an effective mechanism for the request for, and retrieval of primary care data so that it could be used for holistic behavioral health medication review and psychiatric assessment? In order to address these questions, the purpose of this DNP project was to facilitate the integration of primary care data into a behavioral health site in West Michigan using an existing technological tool created by a local HIE. The tool allows behavioral health clinicians to access primary care data, including, but not limited to, assessment information, laboratory test results, and medication lists. The DNP scholar facilitated adoption of the tool at a behavioral health site, piloted the use of the tool with a select team of behavioral health and primary care clinicians, educated clinicians about the tool, assessed the use of the tool, evaluated clinicians' perceptions of integration and collaboration using a pre/post perception survey, and created a plan for sustainability and possible dissemination of the intervention.

Evidence-Based Initiative

A synthesis of current evidence supports the integration of primary care into a behavioral health site. Integration can take place in many different forms, including standardized integration supported by policies and procedures, interpersonal integration that is based on

relationships, integration facilitated with technological tools, and co-location of both primary care and behavioral health within the same space. Regardless of the type or degree of integration, a review of the literature indicates that any integration promotes improved outcomes in the form of cost savings and improved health outcomes for patients (Blount, 2003; Floyd, 2016; Melek, Norris, & Paulus, 2014; Olsen, 2014). In addition, current legislation promoting new value-based payment models that promote quality of care also provides an incentive toward primary care and behavioral health integration. In support of the phenomenon of interest, one of the most innovative models of care integration, the reversed shared care model, provides evidence that integration of primary care for people with mental illness may be most effectively accomplished within a behavioral health site (Blount, 2003; Floyd, 2016; Korda & Eldridge, 2011/2012; Lycett, 2016; Melek, Norris, & Paulus, 2014; Olsen, 2014; Reiss-Brennan et al., 2016; Starfield, Shi, & Macinko, 2005; Ungar, Goldman, & Marcus, 2013). In the reversed shared care model, primary care clinics are embedded within established behavioral health sites where clients have already developed relationships of trust with interprofessional mental health professionals who are better prepared to care for clients with mental illness (Ungar et al., 2013).

Previous work has documented the success of co-location, the integration of primary care services into a behavioral health setting. In 2013 a collaborative project with a nursing school, a hospital system, and a behavioral health site resulted in the establishment of primary care services within Valeo Behavioral Health Care in Topeka, Kansas. Initially, nurse practitioners offered primary care 12 hours a week, seeing 325 patients with 800 visits in the first year. Currently, there are three rooms dedicated to primary care services and the project has expanded to offer clinical placements for nursing students as well (Stevens & Sidlinger, 2015). Another successful example of primary care services integrated within behavioral health is the

HealthWest clinic. A project of Muskegon Community Mental Health in Michigan, HealthWest cares for patients' mental and physical health in one location with an interprofessional team of health care providers. Services also include a laboratory, allowing blood work to be completed on site (HealthWest, 2016). In summary, supported by recent evidence in the literature that integration of primary care into behavioral health sites improves patient outcomes and is cost effective, a tool, created by a local HIE, will be used to initiate a reversed shared care model of technical integration as a pilot project at a behavioral health site.

Conceptual Models

A theoretical model that supports the phenomenon of interest, reversed shared care, as well as a model that guides the implementation process ensured the successful execution of this project.

The Mental Health and Substance Use Chronic Care Model

In recognition of the need for a conceptual model that supports the integration of primary care and behavioral health, Daniels, Adams, Carroll, and Beinecke developed a Mental Health and Substance Use Chronic Care Model (MHSUCCM) (2009, Appendix A). An extension of the Chronic Care Model, the MHSUCCM is specific for clients with persistent mental illness, and acknowledges that mental illness requires on-going treatment similar to chronic physical co-morbidities. Guided by the MHSUCCM, healthcare providers collaborate with an interprofessional team of clinicians who have established relationships of trust with each other and with clients, and provide care in diverse locations most suitable to meet client needs. The MHSUCCM also recognizes the bi-directional influence of primary and behavioral health care that benefits client outcomes when integration is successful (Daniels, Adams, Carroll, & Beinecke, 2009).

As a conceptual model the MHSUCCM supports and guides reversed shared care in three key ways, recognition of the co-morbidity between mental health and physical health and quality patient outcomes, recognition of common barriers to accessibility of primary care for clients who are mentally ill, and the value of patient-centered, relationship-based care for the sustainability of care for vulnerable populations (Daniels et al., 2009; Ungar et al., 2013).

Implementation Model: PARiHS

The Promoting Action on Research Implementation in Health Services (PARiHS) model is intended to guide the implementation of evidence into healthcare practice. Kitson, Harvey, and McCormack assert that three main concepts, evidence, context, and facilitation, must be simultaneously considered for successful implementation of any new intervention (1998, Appendix B). The three concepts guided DNP project design and process for the implementation of reversed shared care.

Evidence

As explained in the PARiHS model, evidence is evaluated in three ways, by research, clinical experience, and patient preference. Each of these types of evidence exists on a continuum and may impact the successful implementation of a new intervention. If evidence is supported by randomized clinical trials, experts agree on outcomes, and patients' opinions are consulted, interventions are more likely to be successful (Kitson et al., 1998, p. 151; Rycroft-Malone, 2004; Stetler, Damschroder, Helfrich, & Hagedorn, 2011).

As a guide for reversed shared care, a review of current literature (research), and expert opinion (clinical experience) is consistent in the conclusion that the integration of care improves health outcomes for patients with persistent mental illness, and also contributes to a reduction in the cost of health care. These outcomes are attributed to both increased effectiveness in the

management of chronic disease within this population including obesity, cardiovascular disease and metabolic syndrome, as well as increased access to primary care services (Blount, 2003; Floyd, 2016; Korda & Eldridge, 2011/2012; Lycett, 2016; Melek et al., 2014; Olsen, 2014; Reiss-Brennan et al., 2016; Starfield et al., 2005; Stanley & Laugharne, 2014; Ungar et al., 2013). Evidence from current literature guided the selection of an appropriate intervention, the use of an HIE technological tool for the initiation of reversed shared care. An acknowledged departure from the PARiHS model, within the scope of this project, patient preferences were not considered related to specific HIE tool implementation, but patients were consistently partners with the interprofessional team in the on-going effort to include primary care assessment information, medication lists, and laboratory results as a part of holistic behavioral health assessment.

Context

According to the PARiHS model, context is a function of a combination of factors, including organizational culture, leadership and measurement. Similar to evidence, each of these sub concepts is evaluated on a continuum. Culture is determined by an assessment of tasks, the value of continued learning, staff or stakeholder morale, and the degree to which, and perception that people are valued. Leadership is evaluated based on an assessment of individual and team roles, organizational structure, management, and to the extent that leadership goals are clearly communicated and commonly shared. Measurement refers to the presence of established methods of performance review that are planned, routine, and include review of peers, as well as external review (Kitson et al., 1998, p. 151; Rycroft-Malone, 2004; Stetler et al., 2011).

An assessment of context in the organization where reversed shared care was initiated includes a culture that values education, people, and continued learning. Leadership roles, team

roles and expectations are clearly defined within the organizational structure. In addition, a measurement of program outcomes including but not limited to Assertive Community Treatment (ACT), substance abuse services, supportive employment programs, and programs for clients and their families who are learning about a new diagnosis of mental illness, is routinely posted on the organizational website by the board of directors. Relevant to the organization where this DNP project was implemented, the context of the project location was evaluated as part of an organizational assessment and will be discussed further in a subsequent section of this paper.

Facilitation

In the context of the PARiHS model, facilitation refers to the characteristics, role, and style of the facilitator who implements a new intervention. Specific personal characteristics include respect, empathy, authenticity and credibility, and are measured on a continuum from low to high. Role is determined by the degree to which stakeholders have a clear understanding of the facilitator's authority, position in the organization (internal or external), amount of access to the organization, and the ability to act as an agent for meaningful change. Style refers to the perceived degree of flexibility, frequency or infrequency of presence within the organization, and appropriate degree of support relevant to organizational or individual needs throughout the implementation process (Kitson et al., 1998, p. 151; Rycroft-Malone, 2004; Stetler et al., 2011).

As applied to this DNP project proposal, the facilitator was the DNP scholar, and as such took into account the influential features of the facilitator as indicated in the PARiHS model. Attention was given to personal characteristics, role and style. Organizational mentors and DNP committee members were consulted as expert advisors.

Need and Feasibility Assessment of the Organization and Population

Fundamental to the success of this DNP project is the organization where it was implemented. Consequently, the mission, culture and stakeholders of the organization were considered in addition to an assessment of strengths, weaknesses, opportunities, and threats that informed the intervention process.

Mission

Mission and strategy are the stated reasons for the existence of an organization; the core purpose as developed by the leadership, as well as required steps for carrying out the mission (Burke & Litwin, 1992). The mission of the behavioral health site that was selected for this project is that the organization is "dedicated to collaborative delivery of evidence-supported mental health and substance abuse treatments that foster hope and wellness"(InterAct of Michigan Board of Directors [InterAct], 2012). The primary strategy of the site is ACT, an evidence-based interprofessional support system that provides a structure to care for clients with persistent mental illness who are living independently in the community, adult foster care, or transitional homes that provide supervision and supportive services (Bond & Drake, 2015; InterAct, n.d.). Additional strategies include employment services, dialectical behavior therapy, and substance abuse treatment services (InterAct, n.d.).

Organizational Leadership and Culture

Distinct from management roles, the leaders of an organization are role models for carrying out the mission of an organization. They provide direction and their actions and behaviors reflect the values of the organization (Burke & Litwin, 1992). The behavioral health site is governed by a board of directors that is comprised of diverse community members and professionals including a social worker, a psychologist, a sociologist, a businessperson, an

attorney, a representative from a local health system, and a member of a local police department (InterAct, n.d.). The supervisor of the site is a social worker. He shares some of the same workspaces with other employees and he meets regularly with groups of staff. Although he does not have daily client interaction, he assists clinicians and intervenes when necessary. Other leaders include a physician, advanced practice registered nurses, and a psychologist. It is apparent that the leaders model the mission of the organization as demonstrated by respect, advocacy, and a non-hierarchical, interprofessional team approach among the clients and staff. In addition to the leaders of the organization, stakeholders included interprofessional team clinicians, clients, and primary care providers in the community.

Organizational culture is defined by the history and values that influence and guide behavior, and may include rules that are both stated and assumed (Burke & Litwin, 1992, p. 532). Foundational to the work at the behavioral health site, is a shared sense of social justice and a desire to care for clients who may be otherwise marginalized by their communities. In addition, members value an interprofessional approach to client care that is rooted in mutual respect for diverse professional roles. Other elements of the culture include a professional, yet informal work atmosphere. Employees may choose to dress casually as their work necessitates travel outside of the office to client homes and neighborhood organizations.

Organizational Strengths, Weaknesses, Opportunities, and Threats

Identification of strengths, weaknesses, opportunities, and threats (SWOT) as part of an organizational assessment is an effective way to determine areas for potential intervention. Strengths and weaknesses are influenced by internal factors, while opportunities and threats are external. The following is a narrative analysis of factors most pertinent to the phenomenon of interest. A complete analysis is included in Appendix C.

Strengths

The strengths of the behavioral health site are related to the organizational culture, work unit climate and individual needs and values. The interprofessional staff members of the organization are dedicated to their work and to each other, and share the value of promoting hope and wellness for the clients that they serve, as stated in the mission statement. In addition, the flexible workspaces and accessible location contribute to a work unit climate of productivity and initiative. Established policies and procedures create a culture of common expectations where all members are focused on the same goal and work collaboratively to meet client needs.

Weaknesses

Internal weaknesses include factors associated with organizational systems and individual skills and tasks. Due to lack of interoperability of data between most primary care and behavioral health care providers, information systems including the EHR do not often provide access to complete client data that supports holistic clinician assessment. Consequently, clinicians are often forced to make decisions without complete medication lists or laboratory test results, potentially resulting in gaps in, or poor quality care. Furthermore, individual tasks and skills are impacted by the amount of time required to search for missing information, necessitating repeated phone calls, faxing, and other inefficient communication practices. Specifically, when primary care information is unavailable to clinicians in advance of a medication review or psychiatric evaluation, a team member must spend time attempting to access the information. Dependent on the time and workload of the staff, a different team member may take this role. There is not an established procedure or protocol for this work, for consistent communication with primary care providers, or among team members for regular updates on the process that may impact individual work flow and delivery of client care.

Opportunities

Opportunities external to the organization include local technology resources, and an active philanthropic community. A local non-profit HIE that was founded with the goal of increasing interoperability between health care providers, offers tools and technological support to promote communication and sharing of data for improved client care and cost savings (Great Lakes Health Connect, n.d.). Establishing a relationship with the HIE is an opportunity to facilitate access to primary care patient medical information at the behavioral health site. In addition, the local community has a history of philanthropy that has benefitted the health care community including people with mental illness (Johnson Center at Grand Valley State University, 2016; Kackley, 2014; Pine Rest Foundation, 2016). This philanthropic climate presents potential opportunity for funding of new initiatives that support the mission of the site and the community it serves.

Threats

External threats to the mission of the behavioral health site include cultural and structural influences that create a potential barrier to client care. Currently, the mental health code of Michigan permits the transfer of information from primary care providers to behavioral health providers if appropriate patient consent is obtained. However, due to privacy concerns, it is more difficult for information to be sent from behavioral health to primary care (Michigan Legislature, 2016). This process impedes the transfer of information and communication between providers whose goal it is to provide holistic patient care. Additional threats include inconsistent or unsustainable funding for mental health programs and the lack of education about mental illness that promotes fear and stereotyping (Grimes, 2016; Rusch, Angermeyer, & Corrigan, 2005).

Organizational Needs Assessment

Organizational needs are assessed both at the macro level and the micro level to determine the most pertinent needs, as well as methods for evidence-based intervention. Taking into account macro level assessment data including organizational staff, finances, organizational performance, as well as mission and culture as mentioned previously, an assessment plan was created by the DNP scholar to assess micro level needs. The plan included the collection of information from several key stakeholders, a doctorally prepared nurse practitioner, a psychologist, and the interprofessional team RN, as well as anecdotal information from other interprofessional team members. For the purpose of discovering the phenomenon of interest, the integration of primary care into a behavioral health site, the DNP scholar created open-ended questions to solicit qualitative data. Questions included:

1. What, if any barriers have you encountered when attempting to access primary care records in order to best care for your clients?

2. What, if any barriers have you encountered when advocating for, and facilitating access to primary care for your clients?

Assessment results validated the need for further exploration of the phenomenon of interest. Responses from key stakeholders consistently revealed challenges for behavioral health clinicians who desire to provide holistic patient care and who value a collaborative approach to care that necessitates communication between mental and physical health care providers. Clinicians described barriers to accessing complete medication lists, laboratory test results, and follow up appointments, all of which impact the quality and coordination of client care (Appendix D). Assessment of data indicated a need for increased coordination with, and

integration of primary care data and/or services in order to improve the ability to provide comprehensive assessment and consistent holistic patient evaluation.

Potential barriers or threats to the success of this project included recent staffing turnover within the organization that may have impacted the timing and ease of implementation. In addition, consideration was given to communication with primary care providers within the community who would need to cooperate with the implementation of the HIE tool to ensure successful integration of data for holistic behavioral health assessment at the project site. Accurate analysis of the success of implementation was also partially dependent on behavioral health clients to attend scheduled medication reviews and psychiatric evaluations.

Project Plan

Beginning in the spring of 2016, the DNP scholar met with organizational stakeholders to conduct an organizational and needs assessment to determine the most relevant population needs and to design an evidence-based intervention to meet those needs. The following is a detailed description of the project plan and goals for implementation.

Purpose of the Project with Objectives

The purpose of this DNP project was to initiate a pilot technical integration of primary care assessment information, medication lists, and laboratory results for holistic assessment with one group of clients supported by an interprofessional clinician team at a behavioral health site. Objectives were (a) adopt and implement the use of an existing HIE technological tool for the increased communication and collaboration between primary care and behavioral health providers; (b) teach interprofessional behavioral health clinicians how to request information from primary care providers through the HIE tool; (c) assess the EHR for the presence of requested primary care assessment data with the use of the HIE tool over a period of one month;

(d) integrate primary care assessment information, medication lists, and laboratory results into behavioral health medication reviews and psychiatric evaluations for holistic assessment. Finally, the goal of this DNP project was to promote reversed shared care through the integration of primary care data at a behavioral health site, for better management of comorbidities and improved client outcomes for people with persistent mental illness.

Type of Project

This scholarly work was designed as a quality improvement project to improve the process of primary care assessment data retrieval for the integration of primary care into a behavioral health site.

Setting and Needed Resources

The primary work of this project took place at a behavioral health site in Michigan. The site is located in a diverse community that is just north of the heart of an urban center. It is easily accessible by bus and by car, less than a mile from a major intersection and the highway. It is adjacent to two residential neighborhoods, within walking distance of a business district, as well as a major medical center that includes a level-one trauma center. Locally, there is a recent history of business and private investment.

Three interprofessional teams that consist of a psychiatrist, nurse practitioners, registered nurses, social workers, and employment specialists share client caseloads. Consistent with the requirements of ACT, the majority of client interaction takes place off site. However, clients regularly come to the site for medication reviews or for psychiatric evaluations. In order to clearly communicate the use of a new HIE technological tool and new process for requesting assessment data with collaborating primary care providers, the implementation of this project took place with select clients who received primary care at the same clinic, a local federally

qualified health center (FQHC). The future goal of the organization was to expand this pilot of technical integration to include all behavioral health clients and collaborating primary care providers in the future.

In addition, since the work of this project took place at the FQHC, as well as the behavioral health site, the success of this project was dependent on the investment of time, and cooperation of primary care providers from whom primary care data was requested. In the absence of an organizational assessment of the FQHC, the DNP scholar assumed common values with the behavioral health clinicians to promote improved procedures and protocols that would result in the best outcomes for shared clients.

Resources needed to complete this DNP project included the time and investment of this DNP scholar, collaboration with a consultant from a local HIE, the time and investment of the interprofessional behavioral health and primary care staff, as well as information technology (IT) specialists who facilitated the adoption of the integration tool. Physical resources included a room within the behavioral health site for clinician training, tables, chairs, computers, and some miscellaneous office supplies.

Primary team members included this DNP scholar, the behavioral health site manager, the behavioral health site supervisor, a DNP prepared nurse practitioner and project advisor, two IT professionals, an HIE consultant, and the interprofessional behavioral health clinicians. Although the collaboration of the primary care clinicians and staff was fundamental to project success, the DNP scholar did not have a clinical placement at the FQHC. Consequently, the participation of the primary care staff and clinicians was limited in the beginning phases of project design.

Design for Evidence-Based Initiative

Building on the results of the organizational assessment, this DNP quality improvement project took place in the winter and spring of 2017. The implementation was divided into five primary phases including, adoption, education, assessment, integration, and evaluation. Guided by PARiHS, attention was given to context, evidence and facilitation (Kitson et al., 1998; Rycroft-Malone, 2004; Stetler et al., 2011).

Phase one, adoption referred primarily to the collaboration with the local HIE and consultation with the HIE representative for the implementation of the technological integration tool by the DNP scholar. Once a formal business agreement had been signed by representatives of the HIE and the behavioral health site, adoption required IT professionals to install the tool behind the firewall of the behavioral health site so that the tool could be accessed securely from within the organization's network. In addition, during the adoption phase, the DNP scholar created accounts within the referral tool for the clients who were selected for the pilot project based on upcoming scheduled appointments and if they received primary care from the collaborating FQHC.

Phase two, education, included education of the interprofessional clinicians and support staff who were the primary users of the tool, as well as communication with the primary care providers at the selected FQHC to alert them to the adoption of the integration tool at the behavioral health site. Education of the clinicians was organized to meet the needs of client and clinician schedules, and consequently took place in individual and small group sessions. The DNP scholar consulted with the site supervisor and manager to create a training schedule. Subsequently, the tool was used to request primary care assessment information, medication lists, and laboratory results during the education phase. Successive communication with the

FQHC alerted primary care staff to changes in process for the request of data from the behavioral health site to ease the transition, thereby facilitating its success. To capitalize on pre-existing relationships between the local FQHC and the HIE, the consultant from the local HIE agreed to partner with this DNP scholar to assist in communicating with primary care staff at the FQHC.

Phase three, assessment, referred to review of the behavioral health EHR for the presence of requested primary care data for the integration into the behavioral health medication reviews and psychiatric evaluations. During a period of one month, the DNP scholar and behavioral health clinicians conducted chart reviews of 24 clients who were scheduled to meet with the nurse practitioner or psychiatrist. Charts were assessed for the presence of previously requested primary care assessment information, medication lists, and laboratory results. A record was kept of the number of successful primary care and behavioral health integration attempts as determined by the response to requests for information using the technical integration tool. Data was collected and saved using an Excel spreadsheet. No private health information (PHI) was collected.

Concurrent with phase three, phase four, integration, was the evaluation of collected primary care data, and its inclusion into behavioral health medication review and psychiatric evaluation. Effective integration was defined as the inclusion of primary care data for review by the nurse practitioner or psychiatrist before or during each scheduled client appointment for holistic psychiatric assessment and was evaluated qualitatively with a pre/post perception survey administered to interprofessional behavioral health clinicians by the DNP scholar.

Lastly, phase five of the DNP project, evaluation, included a review of the collected data and preparation of a plan for communication about, and dissemination of the intervention pilot results. Data was analyzed quantitatively in Excel spreadsheets, and qualitatively with a pre/post

perception survey of interprofessional behavioral health clinicians. Due to the limits of the scope of the pilot project and the DNP scholar's clinical placement, the primary care clinicians at the FQHC were not surveyed.

Participants

The primary participants in the project included the interprofessional behavioral health clinicians, as well as members of the support staff at the behavioral health site. Although behavioral health records were reviewed for the presence of requested primary care data, behavioral health clients did not participate directly in this project, and PHI was not collected. Additional participants included the consultant from the HIE, IT professionals, as well as collaborating staff at the local FQHC.

Measurement: Sources of Data and Tools

In addition to the organizational assessment that determined the phenomenon of interest and project design, the scholarly pilot project had two primary sources of data. These included an assessment of the presence of requested primary care information within the EHR, and the pre/post perception survey of interprofessional behavioral health clinicians. In order to determine the successful use of the integration tool, the following questions were asked when conducting the behavioral health EHR chart review:

1. Has the requested primary care data (assessment information, medication lists, or laboratory results) been supplied by the primary care clinic as requested within the integration tool? Yes/No

2. What percentage of charts from the select pilot group had primary care data returned as requested within the integration tool?

In addition, a pre/post perception survey of interprofessional behavioral health clinicians included three questions designed to determine the perception of integration as determined by efficiency, effectiveness, and degree of collaboration with the FQHC primary care clinic. See Appendix E for the complete pre/post perception of integration survey.

Implementation and Timeline

Collaboration between this DNP scholar and the staff at the behavioral health site began in the spring of 2016 with project research and planning. The DNP scholar spent time assessing both the organizational context, as well as pertinent needs of the organization. Informal interviews were conducted with interprofessional staff stakeholders and resulted in the discovery of the primary phenomenon of interest, reversed shared care, as well as the need at the behavioral health site for increased collaboration with primary care providers as evidenced by the inconsistent availability of primary care assessment information, medication lists, and laboratory results for holistic behavioral health assessment. An integrated literature review was completed in the summer and fall of 2016 for the discovery of evidence to support the implementation of the intervention.

Guided by PARiHS, and the project design, implementation steps took place in the winter and spring of 2017.

Ethics and Human Subjects Protection

After project proposal approval and before implementation, a Human Research Review Committee (HRRC) application was submitted. The committee assessed the project proposal and determined that the project was not human subject research. See Appendix F for a copy of the HRRC determination letter.

Budget

The project budget incurred no direct cost to the behavioral health site. The time and resources of the DNP scholar were provided as an in-kind donation to the behavioral health site. In addition, the adoption of the technological integration tool developed by the HIE was provided at no cost to the site. Furthermore, the consultant from the HIE was willing to make an in-kind donation of time for facilitation of communication and education between the behavioral health site and the FQHC, as described in phase two of the project design.

An initial investment of interprofessional behavioral health staff time for attendance at a one hour educational in-service was required of behavioral health staff for adoption of, education about how to use the integration tool, and subsequent changes to protocol and workflow. However, the DNP scholar estimated that success of the intervention would save future staff time, due to increased efficiency of collaboration with primary care providers and decreased necessity for faxing of records requests and repeated phone calls.

Project Outcomes

Project outcomes included both anticipated and unanticipated results as measured by the perception survey and informal interviews with interprofessional staff at the behavioral health site. Perceived outcomes included increased efficiency of integration, increased collaboration between primary care and behavioral health providers, a new partnership with an HIE, and the increased frequency and documentation of coordinated, holistic care. Project outcomes that were impacted by the boundaries of the timeline will be discussed further in a subsequent section of this paper addressing project strengths and weaknesses.

Primary Care Data Returned

At the time of project evaluation, the staff at the FQHC, while willing to collaborate for the success of the project, articulated a desire for more training about the new application of the technological integration tool with the HIE consultant. Both the HIE consultant and the collaborating FQHC staff agreed on a plan for training, but policies and protocols needed to be modified before the staff at the FQHC returned primary care data as requested. The resulting delay limited the ability of the DNP scholar to evaluate integration based on the number of charts that had primary care assessment data successfully returned within the integration tool. At the time of this writing, one chart (4.1%) had primary care data successfully returned, affirming the functionality of the tool for the integration of primary care and behavioral health, but not sufficient to determine successful integration (60%) for the purposes of the pilot project.

In addition to functionality of the integration tool, the primary care data that was returned with one chart was significant for the value of the technical integration. The client whose data was returned had co-occurring diagnoses of seizure disorder and bi-polar disorder. Medications that were included in the primary care medication list were haloperidol and valproic acid. These medications were not accounted for in the behavioral health medication list, although other antipsychotic and anti-seizure medications were prescribed. The disparities in the two medication lists in this one case study raise questions about patient safety, provider liability and support the value of a technical integration between primary care and behavioral health.

Missing Perception Survey Data

Twenty interprofessional behavioral health clinicians (100%) completed the pre survey assessing perceptions of efficiency of integration, degree of collaboration with primary care providers, and effectiveness of integration. Eighteen clinicians completed the post survey

completely. One respondent had an extended leave of absence from the organization, and an additional respondent chose not to answer the third question on the post survey, leaving one survey incomplete. No incentives, other than project participation, were offered for completing the pre/post perception survey.

Efficiency of Integration

Prior to the adoption of the technological tool, the processes and protocols for requesting primary care assessment information at the behavioral health site was inefficient and inconsistent. Support staff and team RNs faxed records requests and made repeated phone calls with varying degrees of success. While behavioral health clinical notes were routinely faxed to primary care providers after behavioral health medication reviews and psychiatric evaluations, primary care data was not requested before scheduled behavioral health appointments unless a client had an acute need. The adoption of the technological integration tool and renewed interest in the integration of care necessitated a review of current workflow and resulted in new consistent processes that included support staff requesting primary care assessment information for all clients a week prior to their scheduled behavioral health appointments.

Survey results measured improvement in perception of efficiency of integration. Twelve respondents perceived integration to be highly efficient after the implementation of the pilot project compared to one respondent in the pre-survey. Conversely, eleven respondents perceived integration to be inefficient or highly inefficient before the pilot implementation compared to one respondent after implementation. See Appendix G for complete survey results.

In addition, a review of current workflow also clarified staff roles. It became apparent based on reimbursement models, that the work of requesting primary care assessment data was most appropriate for support staff. Workflow modification increased the amount of time that the

RNs could work with and prioritize direct client care. Consequently the behavioral health site could bill for clinician time, creating a business case for the workflow modification and reversed shared care with the technical integration project.

Increased Collaboration

Due to the adoption of the technological integration tool, the intervention necessitated a collaborative partnership with the FQHC for the success of the pilot project itself. Staff at a local FQHC that provided primary care to the clients in the pilot group was asked to partner with the behavioral health site staff for the technical integration pilot project. This collaboration was facilitated by the HIE consultant who had a pre-existing relationship with the selected FQHC, and knew that primary care clinicians at the clinic had experience with the use of the tool. Clinicians from the behavioral health site collaborated with primary care clinicians to communicate about the best process for the exchange of information using the integration tool. At the conclusion of the pilot project, behavioral health clinicians were enthusiastic about potential additional collaborative applications of the technical integration tool and expansion of the pilot project to include additional primary care providers.

Perception survey results indicated an increase in the perception of collaboration between primary care and behavioral health clinicians for the integration of primary care and behavioral health. Six respondents perceived the relationship between primary care and behavioral health providers to be highly collaborative after the implementation of the pilot project compared to none in the pre survey. Four respondents perceived no collaboration or obstruction of collaboration between primary care providers before the pilot project implementation compared to one respondent in the post survey. The changes in perception of collaboration were likely due to the enthusiastic response of the staff at the FQHC for the primary goal of the project, the

integration of primary care and behavioral health for holistic medication reviews and psychiatric evaluations for improved client outcomes. See Appendix H for complete survey results.

Effectiveness of Integration

In anticipation of the return of requested primary care data, informal interviews were conducted with the nurse practitioners and the psychiatrist at the behavioral health site. The goal was to determine the most effective processes and workflow for the nurse practitioners and psychiatrist to assess primary care data for integration into medication reviews and psychiatric evaluations. While the behavioral health clinicians were enthusiastic about the technical integration project and committed to integrating data into client assessment, the deadlines of the DNP scholarly project timeline prevented in depth assessment of the effectiveness of integration. However, the support of the project from key interprofessional stakeholders, and the improvement of both efficiency of integration and increase in collaboration should promote sustainability of the intervention and the future measurable outcomes of effectiveness of integration over time with other primary care providers.

Preliminary results of the perception survey indicate a marked increase in the perception of the effectiveness of integration. One respondent perceived integration to be highly effective before the pilot project implementation compared to thirteen in the post survey. Nine respondents in the pre survey perceived integration to be ineffective compared to one in the post survey. Given that only one chart (4.1%) had data returned at the time of project evaluation, the results of the perception of integration survey seem to indicate broad stakeholder support for the pilot project and the belief that the integration of primary care assessment data into behavioral health medication reviews and psychiatric evaluations will continue to improve as more data is returned using the technological integration tool. See Appendix I for complete survey results.

Statistical Analysis

The pre and post perception survey data was analyzed to determine if the changes in perception of efficiency of integration, degree of collaboration with primary care providers, and effectiveness of integration were statistically significant. For statistical analysis, data was combined to indicate general positive or negative perceptions (highly efficient and somewhat efficient vs. inefficient and highly inefficient and so on...) and two by two tables were created. Due to predicted values greater than five, a Chi-Square test was used to analyze perception of efficiency of integration and effectiveness of integration. Both the change in perception of efficiency of integration and effectiveness of integration were statistically significant with p values of 0.0008 and 0.0026 respectively. Predicted values for degree of collaboration were not greater than five, therefore, Fisher's Exact Test was performed to determine if there was a significant change in perception of degree of collaboration with primary care providers. The p value of the Fisher's Test was 0.6614 indicating no statistically significant change in the perception of collaboration. See Appendix J.

A New Partnership

An additional outcome of the integration pilot project was the new partnership that was established between the behavioral health site and the HIE. While the HIE is well established within the geographic region, the majority of the clients include primary care and specialty care offices that do not specialize in behavioral health. In addition to initial success in moving towards effective technical integration of primary care data at the behavioral health site, the pilot project also offered a new opportunity for the HIE to initiate the use of the integration tool for behavioral health and illuminated possible opportunities for new partnerships between the HIE and other behavioral health providers within the region.

Coordination of Care

An unanticipated positive outcome of the adoption of the HIE integration tool was the increase in the frequency of, and ability to document coordination of care. Previously, for auditing purposes, behavioral health staff kept a log of the faxes that were sent to and from primary care and behavioral health clinicians. The pilot project implementation revealed the unanticipated benefit of the technological integration tool adoption that included improved coordination of care documentation. While the current project was limited to the pilot intervention, the potential expanded application of the tool has prompted conversation among staff regarding its future use in meeting additional clinical goals for improved client outcomes.

Implications for Practice

The technical integration of primary care at a behavioral health site has many implications for practice and possibilities for expansion that will further support holistic behavioral health assessment and improved client outcomes long term. A discussion of project strengths, weaknesses, and sustainability offers guidance for future work and opportunities for and expanded adoption of reversed shared care.

Project Successes and Strengths

Project strengths included interprofessional consensus for the need for improved integration of primary care assessment data into behavioral health medication reviews and psychiatric assessments. In addition, there was broad philosophical support for a technical integration project that would address the stated need while also improving efficiency and collaboration with primary care clinicians. All clinicians and support staff at the behavioral health site were enthusiastic about the possibility of increased integration for improved client outcomes. This attitude was evident in the welcoming of the DNP scholar as well as enthusiastic

support of the organizational needs assessment which led to project implementation and willingness to discuss potential for future project applications. Staff at the collaborating FQHC also expressed enthusiastic support for the project and was excited about the potential for collaboration to improve mutual holistic client care.

Additional project strengths included the project design that included conceptual and implementation models that were relevant to project facilitation and aided in the communication of project goals with key stakeholders. Specifically, the understanding of persistent mental illness as a chronic disease as explained in the MHSUCCM, and the importance of intentional facilitation as acknowledged in the PARiHS model, were fundamental to project success.

The relationship with the HIE consultant was also a project strength. Due to the existing relationship with the HIE and the partnering FQHC, the HIE consultant was able to facilitate collaboration between the behavioral health site and the primary care clinic for the pilot project. In addition, the HIE consultant will promote sustainability of the intervention through an ongoing relationship with the behavioral health site, such that the consultant will be available for future training or expanded tool use as need or opportunity arise.

Project Weaknesses and Challenges

Project weaknesses and challenges included the project timeline, limitation for evaluation, and the large number of stakeholders that were necessary for the success of project implementation. Stakeholders included the primary participants at the behavioral health site, as well as the partnership of the clinicians at the partnering primary care clinic and the HIE. The DNP scholar did not have a clinical placement at the FQHC, and although the HIE consultant was effective in mitigating this challenge, there were significant delays in project implementation due to the inability of the DNP scholar to facilitate process and protocol change

at the FQHC. The behavioral health site manager and the DNP scholar met with the coordination of care supervisor at the FQHC who was enthusiastic about the intervention and the use of the HIE integration tool. She expressed philosophical support for reversed shared care as well as her intention to collaborate for the purposes of the pilot project. Although the FQHC currently used the technological tool for referral purposes, the new application of the tool to primary care and behavioral health integration required additional time to implement at the FQHC before primary care data could be returned to the behavioral health site as requested. This was due to the request for more training at the FQHC with the HIE consultant and the fact that the DNP scholar did not have a clinical placement at the FQHC that would have allowed improved facilitation of integration tool adoption at the primary care clinic.

In addition, the project timeline was interrupted due to the inadvertent exclusion of two key behavioral health supervisors who work off site and whose approval was necessary for adoption of the HIE technological integration tool, causing a delay in project implementation.

The delay in the project implementation timeline ultimately impacted the evaluation of staff perception of effectiveness of integration. The inability to assess the number of charts returned with primary care assessment data as requested with the HIE technological integration tool was one barrier. The decreased amount of time that clinicians were able to experience and evaluate whether or not primary care data was effectively integrated into behavioral health medication reviews and psychiatric evaluations was the second evaluation limitation. However, due to overwhelming stakeholder enthusiasm, as well as positive projections for sustainability of the intervention, continued improvement in perception of effectiveness of integration is anticipated.

Sustainability and Limitations

Sustainability of the intervention will be supported by the behavioral site manager who is a champion for the integration of primary care data into behavioral health medication reviews and psychiatric evaluations both for improved outcomes of clients and for the potential future application of the technological integration tool. The site manager will be instrumental in expanding the pilot project to include collaboration with other primary care clinics, and will continue to assess the need for necessary changes to processes and protocols that impact the efficiency of the intervention.

The nurse practitioners, psychiatrist, and RNs will also support the sustainability of the intervention due to professional clinical knowledge of the importance of accurate medication reconciliation and the impact of comorbidities on client outcomes. Their support of the project also strengthens the expectation that perception of integration will increase over time as primary care assessment data continues to be integrated into medication reviews and psychiatric evaluations.

Current healthcare trends promoting value-based payment models focused on outcomes rather than fee for service will also promote the sustainability of this project. Coordination of care, increased collaboration, and integrated assessment all impact quality indicators and consequently reimbursement for services over time. In addition, sustainability will be promoted by a decrease in duplication of services such as laboratory testing, impacting client satisfaction and further reduction in the cost of care.

The intervention is limited by the degree to which primary care providers outside of the behavioral health site are willing to collaborate for the successful exchange of information within the HIE integration tool. The success of the intervention assumes a shared value, the desire to

increase holistic assessment for improved client quality of life and improved client outcomes long term. Expansion of the technical integration to move toward interpersonal or physical integration is currently limited by licensing that is exclusive of primary care at the current behavioral health site.

Reflection on Enactment of DNP Essentials

DNP Essentials are a set of eight key attributes of a doctorally prepared nurse (American Association of Colleges of Nursing [AACN], 2006). The application of DNP Essentials was a fundamental part of the success of this project, a technical integration of primary care into a behavioral health site, or reversed shared care. Each of the DNP Essentials is discussed in relationship to project design and implementation.

Scientific Underpinnings for Practice

Evidence-based practice is central to implementation science and the DNP advanced practice role. The conception, design and development of this project were based on current research that included a literature review and an organizational assessment guided by the Burke and Litwin model (Burke & Litwin, 1992). Scientific models were also applied for the assessment of the phenomenon of interest as well as the implementation of the project itself, including the MHSUCCM and PARiHS (Daniels et al., 2009; Kitson et al., 1998). The scientific basis for the project conception, design and implementation will guide future outcomes evaluation and contribute to sustainability.

Organizational and Systems Leadership for Quality Improvement

The success of this project required an understanding of organizational context related to current funding for programs that support people with persistent mental illness and an awareness of available resources for project design. Significantly, the partnership with the HIE was

established at no cost to the behavioral health organization, increasing feasibility of the intervention.

An analysis of current processes and protocols was necessary to determine the most effective methods for the integration tool use. Consequently, a new workflow prioritized direct client and clinician interaction, and therefore billable time. Throughout the entire project process, sensitivity to client rights, including privacy, was prioritized, and attention was given to stakeholder concerns and the cultures of three distinct organizations including the behavioral health site, the FQHC, and the HIE.

Clinical Scholarship and Analytical Methods for Evidence-Based Practice

In addition to evidence-based practice design, the project implementation required analysis of current organizational data relevant to primary care and behavioral health integration. The DNP scholar conducted informal interviews to discover the phenomenon of interest and created a pre/post perception survey to assess the efficiency of technical integration, effectiveness of technical integration, and degree of collaboration with primary care providers. The findings from the evidence-based literature review informed project design, implementation and analysis of outcomes. The DNP scholar acted as the behavioral health organizational consultant for the duration of the pilot project.

Information Systems for Healthcare Transformation

The unique partnership between the HIE and the behavioral health site was fundamental to the success of this technical integration. Establishing the relationship between the behavioral health site and the FQHC necessitated an understanding of legal and ethical consideration of the electronic exchange of protected patient information and specific privacy laws applicable to behavioral health providers.

This DNP project employed a novel use of an existing technological integration tool for the integration of primary care data into behavioral health for holistic behavioral health assessment for the improvement of quality of life and chronic disease management for people with persistent mental illness. The project contributes to the body of evidence for reversed shared care as well as creates a precedent for the systematic technological exchange of information between primary care and behavioral health.

Health Care Policy for Advocacy in Health Care

While the direct design and implementation of this technical integration project did not necessitate explicit advocacy for health care policy, the project outcomes create a case for advocacy for programs that increase access to both primary care and behavioral health care for people with persistent mental illness. Future advocacy may include providing technical integration project data to legislators for the creation of healthcare policies that incentivize the integration of primary care and behavioral health. Possible incentives could encourage the physical integration of primary care and behavioral health that will support co-located clinicians who practice standardized integration, interpersonal integration, as well as technical integration. The sustainability of this project will create data to support health care policy and funding for these important future initiatives.

Interprofessional Collaboration

Interprofessional collaboration was foundational to the project in concept, design, and implementation. Stakeholders at the behavioral health site and the FQHC had diverse professional backgrounds and roles. The DNP scholar collaborated with interprofessional behavioral health clinicians, the technological tool experts and consultant from the HIE, as well as the primary care staff at the collaborating FQHC.

Particularly relevant to project implementation, DNP essential leadership skills of interpersonal collaboration assisted the DNP scholar in careful communication with diverse stakeholders at three distinct organizations. Attention was given to the unique cultural context of each organization, interprofessional roles and communication styles. Although ultimately successful, future dissemination of the intervention to other primary care providers should include additional time for project facilitation and implementation due to the number of locations and stakeholders required for project success.

Population Health

An understanding of population health and needs specific to people with persistent mental illness was necessary for discovery of the phenomenon of interest and subsequent intervention. Social determinants of health including lack of access to transportation, consistent housing, employment, and insurance are some of the factors that contribute to gaps in care for this vulnerable population. The success and sustainability of this project will mitigate health disparities for clients at the behavioral health organization who receive holistic integrated primary care and behavioral health assessment.

Advanced Nursing Practice

Clinical knowledge of advanced nursing practice was instrumental for technological integration project design. The DNP scholar utilized advanced practice knowledge relevant to the importance of medication reconciliation, assessment of chronic disease, including mental illness, and comorbidities for project conception and strategy to guide the intervention. Clinical understanding was important to establish the rationale for the request of primary care medication lists, laboratory results, and assessment information for holistic behavioral health medication

review and psychiatric evaluations, and to communicate this rationale to behavioral health interprofessional team stakeholders and project partners at the HIE and FQHC.

Dissemination of Outcomes

At the completion of the project, outcomes were disseminated to the behavioral health interprofessional teams, the executive team and informally with other clinicians and support staff as requested. Results of the project were also presented at a scholarly project defense, and subsequently published in ScholarWorks at Grand Valley State University. Plans for further dissemination of project outcomes include professional nursing conferences, as well as future publication.

References

American Association of Colleges of Nursing. (2006). *The essentials of doctoral education for advanced nursing practice*. Retrieved from http://www.aacn.nche.edu/dnp/Essentials.pdf

Blount, A. (2003). Integrated primary care: Organizing the evidence. *Families, Systems, & Health*, *21*, 121-133. Retrieved from http://search.proquest.com.ezproxy.gvsu.edu/docview/614444377/fulltextPDF/E6A6F3C931F2445DPQ/1?accountid=39473

Bond, G. R., & Drake, R. E. (2015, June). The critical ingredients of assertive community treatment. *World Psychiatry*, *14*, 240-242. http://dx.doi.org/10.1002/wps.20234

Burke, W. W., & Litwin, G. H. (1992, September). A causal model of organization performance and change. *Journal of Management*, 523-545. Retrieved from http://search.proquest.com.ezproxy.gvsu.edu/docview/215258879/fulltextPDF/A5A7BA542FCE45B3PQ/1?accountid=39473

Centers for Disease Control and Prevention. (2013). *Burden of mental illness*. Retrieved from https://www.cdc.gov/mentalhealth/basics/burden.htm

Daniels, A. S., Adams, N., Carroll, C., & Beinecke, R. H. (2009, Spring). A conceptual model for behavioral health and primary care integration: Emerging challenges and strategies for improving international mental health services. *International Journal of Mental Health*, *38*, 100-112. http://dx.doi.org/10.2753/IMH0020-7411380109

Floyd, P. (2016, January). Integrating physical and behavioral health: A major step toward population health management. *Healthcare financial management*, 64-71. Retrieved from http://web.a.ebscohost.com.ezproxy.gvsu.edu/ehost/pdfviewer/pdfviewer?sid=61cdcd87-12df-4199-9114-3279fb2bd999%40sessionmgr4010&vid=1&hid=4104

Great Lakes Health Connect. (n.d.). http://gl-hc.org

Grimes, R. (2016, March 29). Are Snyder's proposed changes to the mental health care system good for Michigan? *Michigan Radio*. Retrieved from http://michiganradio.org/post/are-snyder-s-proposed-changes-mental-health-care-system-good-michigan

HealthWest. (2016). Integrated health clinic. Retrieved from http://healthwest.net/integrated-health/integrated-health-clinic/

InterAct. (n.d.). http://www.interactmich.org

InterAct of Michigan Board of Directors. (2012). *Mission statement* [Administrative policy manual]. Kalamazoo, MI: InterAct of Michigan.

Johnson Center at Grand Valley State University. (2016). http://johnsoncenter.org

Kackley, R. (2014, October 12). A new age of giving: Grand Rapids philanthropy evolves from a generation whose names dot the landscape. *Crain's Detroit Business*. Retrieved from http://www.crainsdetroit.com/article/20141012/NEWS/310129998/a-new-age-of-giving-grand-rapids-philanthropy-evolves-from-a

Kitson, A., Harvey, G., & McCormack, B. (1998). Enabling the implementation of evidence based practice: A conceptual framework. *Quality in Health Care*, *7*, 149-158. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2483604/pdf/v007p00149.pdf

Knapik, G. P., & Graor, C. H. (2013). Engaging persons with severe persistent mental illness into primary care. *The Journal for Nurse Practitioners*, *9*, 283-287. http://dx.doi.org/O.IOI6/j.nurpra.2Oi3.O2.Oi9

Korda, H., & Eldridge, G. N. (2011/2012, winter). Payment incentives and integrated care delivery: Levers for health system reform and cost containment. *Inquiry*, *48*, 277-287. http://dx.doi.org/10.5034/inquiryjrnl_48.04.01

Lawrence, D. (2010). Review: Inequalities in healthcare provision for people with severe mental illness. *Journal of Psychopharmacology*, *24*, 61-68. http://dx.doi.org/10.1177/1359786810382058

Lycett, H. (2016). Assessing if the Core-Net database system can be integrated into a primary care mental health team. *Mental Health Nursing*, *35*, 16-19. Retrieved from http://web.a.ebscohost.com.ezproxy.gvsu.edu/ehost/pdfviewer/pdfviewer?sid=13cbf366-d644-468a-9cbd-3bf44cae26bf%40sessionmgr4008&vid=1&hid=4104

Melek, S., Norris, D., & Paulus, J. (2014). Economic impact of integrated medical-behavioral healthcare: Implications for psychiatry.

Michigan Legislature. (2016). Mental Health Code: 330.1748 sec. 748. Retrieved from http://www.legislature.mi.gov/(S(wuiohfjrwnwuwxvzsopqijt0))/mileg.aspx?page=getObject&objectName=mcl-330-1748

National Alliance on Mental Illness. (2016). *Mental health by the numbers*. Retrieved from https://www.nami.org/Learn-More/Mental-Health-By-the-Numbers

Olsen, D. (2014, May 8). Integrating primary care and mental health key to improving patient care, lowering costs. *Medical Economics*. Retrieved from http://medicaleconomics.modernmedicine.com/medical-economics/content/tags/affordable-care-act/integrating-primary-care-and-mental-health-key-im

Pine Rest Foundation. (2016). https://www.pinerest.org/foundation/overview/

Reiss-Brennan, B., Brunisholz, K., Dredge, C., Briot, P., Grazier, K., Wilcox, A., ... James, B. (2016). Association of integrated team-based care with health care quality, utilization, and cost. *JAMA*, *316*, 826-834. http://dx.doi.org/10.1001/jama.2016.11232

Rusch, N., Angermeyer, M. C., & Corrigan, P. W. (2005, December). Mental illness stigma: Concepts, consequences, and initiatives to reduce stigma. *European Psychiatry*, 20, 529-539. http://dx.doi.org/10.1016/j.eurpsy.2005.04.004

Rycroft-Malone, J. (2004, October/November/December). The PARIHS framework - A framework for guiding the implementation of evidence-based practice. *Journal of Nursing Care Quality*, *19*, 297-304.

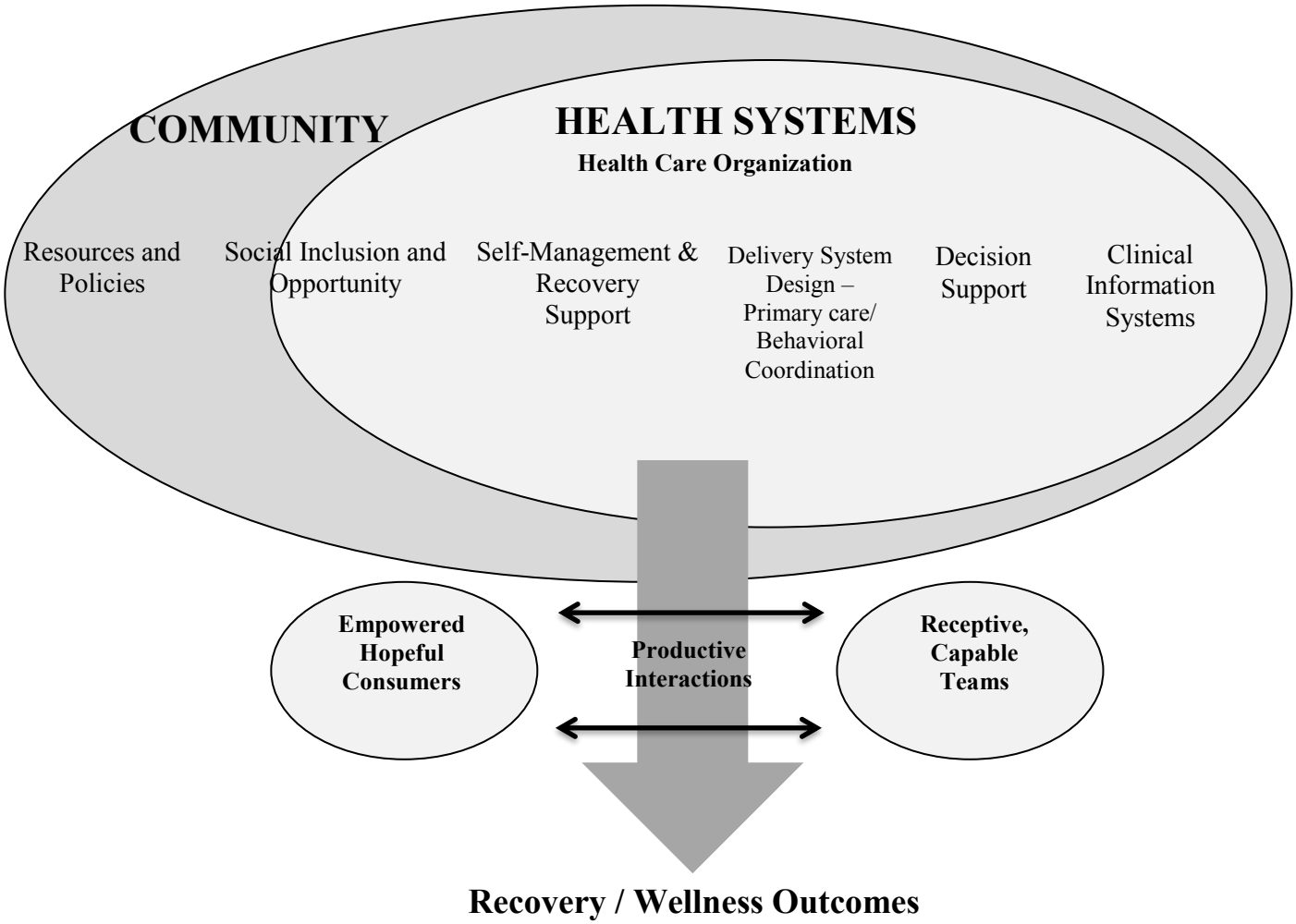
Stanley, S., & Laugharne, J. (2014, April 1). The impact of lifestyle factors on the physical health of people with a mental illness: A brief review. *International Journal of Behavioral Medicine*, *21*, 275-281. http://dx.doi.org/10.1007/s12529-013-9298-x

Starfield, B., Shi, L., & Macinko, J. (2005, September). Contribution of primary care to health systems and health. *The Milbank Quarterly*, *83*, 457-502. http://dx.doi.org/10.1111/j.1468-0009.2005.00409.x

Stetler, C. B., Damschroder, L. J., Helfrich, C. D., & Hagedorn, H. J. (2011). A guide for applying a revised version of the PARIHS framework for implementation. *Implementation Science*, *6*. http://dx.doi.org/10.1186/1748-5908-6-99

Stevens, C., & Sidlinger, L. (2015, January-February). Integration of primary care into a mental health center: Lessons learned from year one implementation. *The Kansas Nurse*, 12-15. Retrieved from http://web.b.ebscohost.com.ezproxy.gvsu.edu/ehost/pdfviewer/pdfviewer?sid=d1e5e849-dc24-4bb6-8440-f5707f9b4617%40sessionmgr105&vid=1&hid=110

Ungar, T., Goldman, S., & Marcus, M. (2013). Reversed shared care in mental health: Bringing primary physical health care to psychiatric patients. *Canadian Journal of Community Mental Health*, *32*, 1-16. http://dx.doi.org/10/7870/cjcmh-2013-022



From A conceptual model for behavioral health and primary care integration: "Emerging challenges and strategies for improving international mental health services," by Daniels, A. S., Adams, N., Carroll, C., & Beinecke, R. H., 2009, *International Journal of Mental Health*, *38*, 100-112. Reprinted with permission.

Appendix B: PARiHS Model

	Low	High
A. Evidence		
Research	Anecdotal evidence Descriptive Information	Randomized controlled trials Systematic reviews Evidence-based guidelines
Clinical Experience	Expert opinion divided Several camps	High levels of consensus Consistency of view
Patient preferences	Patients not involved	Partnerships
B. Context		
Culture	Task driven Low regard for individuals Low morale Little or no continuing education	Learning organization Patient centered Valuing people Continuing education
Leadership	Diffuse roles Lack of team roles Poor organization or management of services Poor leadership	Clear roles Effective team work Effective organizational structure Clear leadership
Measurement	Absence of: Audit and feedback Peer review External audit Performance review of junior staff	Internal measures used routinely Audit of feedback used routinely Peer review External measures
C. Facilitation		
Characteristics	Respect Empathy Authenticity Credibility	Respect Empathy Authenticity Credibility
Role	Lack of clarity around: Access Authority Position in organization Change agenda	Access Authority Change agenda successfully negotiated
Style	Inflexible Sporadic Infrequent Inappropriate	Range and flexibility of style Consistent and appropriate presence and support

From "Enabling the implementation of evidence based practice: A conceptual framework," by Kitson, A., Harvey, G., & McCormack, B., 1998, *Quality in Health Care*, *7*, 149-158. Reprinted with permission.

Appendix C: SWOT Analysis

INTERNAL		**EXTERNAL**	
Strengths	**Weaknesses**	**Opportunities**	**Threats**
Organizational culture Work unit climate Individual needs and values **Interprofessional team staff who are dedicated to the mission of the organization** Accessible location Flexible workspace Established policies and procedures	Systems – r/t the management of information **Tasks and individual skills – r/t coordination of care, mismanagement of time r/t primary care facilitation** **Gaps in information that prevent complete holistic assessment**	Community resources (GLHC) Philanthropic community – external environment **Evidence that supports the success of integration of behavioral health and primary care in the context of a behavioral health site.**	Shortage of funding Design of the mental health code that creates barriers to sharing information between primary care and behavioral health care providers External environment (opioid epidemic) Stereotyping/stigma **Lack of consistent collaboration with primary care providers** **Lack of consistent access to accurate primary care assessment data**

Appendix D: Organizational Needs Assessment Data

Qualitative data gathered from interviews with key stakeholders:

What, if any barriers have you encountered related to access of information from, or facilitation of care with a primary care provider for your clients?

- Unknown dose of metformin prescribed for diabetes management
- Missing lab test results
- Client with CHF not taking prescribed medications
- Inconsistent blood sugar management
- High sugar diet
- Missed appointments due to scheduling confusion
- Unintentional weight loss
- Nutrition education – lack of
- Client who is pregnant and prescribed antipsychotic medication
- Prescribed medications not refilled
- Hepatitis C testing required for housing
- Psychiatric medications discontinued or prescribed by PCP without communication
- Chronic pain
- Repeated emergency department visits
- Use of multiple pharmacies
- Appointment cancellations due to repeated “no shows”
- Multiple comorbidities needing management; heart disease, obesity, hypertension
- Clients’ lack of perceived importance of physical health
- Lack of or incorrect medication reconciliation from primary care provider

Appendix E: Pre/Post Clinician Perception Survey

What is your perception of the efficiency of current primary care assessment data integration?

Highly efficient

Somewhat efficient

Neither/Not applicable

Inefficient

Highly inefficient

What is your perception of the degree of collaboration between primary care providers and behavioral health staff?

Highly collaborative

Somewhat collaborative

Neither/Not applicable

No collaboration

Obstruction of collaboration/communication

What is your perception of the effectiveness of primary care assessment data integration into medication reviews and psychiatric evaluations?

Highly effective

Somewhat effective

Neither/Not Applicable

Ineffective

Highly ineffective

Appendix F: HRRC Determination Letter

GRAND VALLEY STATE UNIVERSITY
www.gvsu.edu

DATE:	January 20, 2017
TO:	Lara Dengerink-VanTil, BSN
FROM:	Grand Valley State University Human Research Review Committee
STUDY TITLE:	[1013516-1] Integration of Primary Care into a Behavioral Health Site
REFERENCE #:	17-122-H
SUBMISSION TYPE:	New Project
ACTION:	NOT RESEARCH
EFFECTIVE DATE:	January 20, 2017
REVIEW TYPE:	Administrative Review

Thank you for your submission of materials for your planned research study. It has been determined that this project:

DOES NOT meet the definition of covered human subjects research* according to current federal regulations. The project, therefore, *DOES NOT]*require further review and approval by the HRRC.

Any research-related problem or event resulting in a fatality or hospitalization requires immediate notification to the Human Research Review Committee Chair, Dr. Steve Glass, (616)331-8563 **AND** Human Research Protections Administrator, Dr. Jeffrey Potteiger, Office of Graduate Studies (616)331-7207. See *HRRC policy 1020, Unanticipated problems and adverse events.*

Exempt research studies are eligible for audits.

If you have any questions, please contact the Office of Research Integrity and Compliance at (616) 331-3197 or rci@gvsu.edu. The office observes all university holidays, and does not process applications during exam week or between academic terms. Please include your study title and reference number in all correspondence with our office.

*Research is a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge (45 CFR 46.102 (d)).

Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains: data through intervention or interaction with the individual, or identifiable private information (45 CFR 46.102 (f)).

Scholarly activities that are not covered under the Code of Federal Regulations should not be described or referred to as *research* in materials to participants, sponsors or in dissemination of findings.

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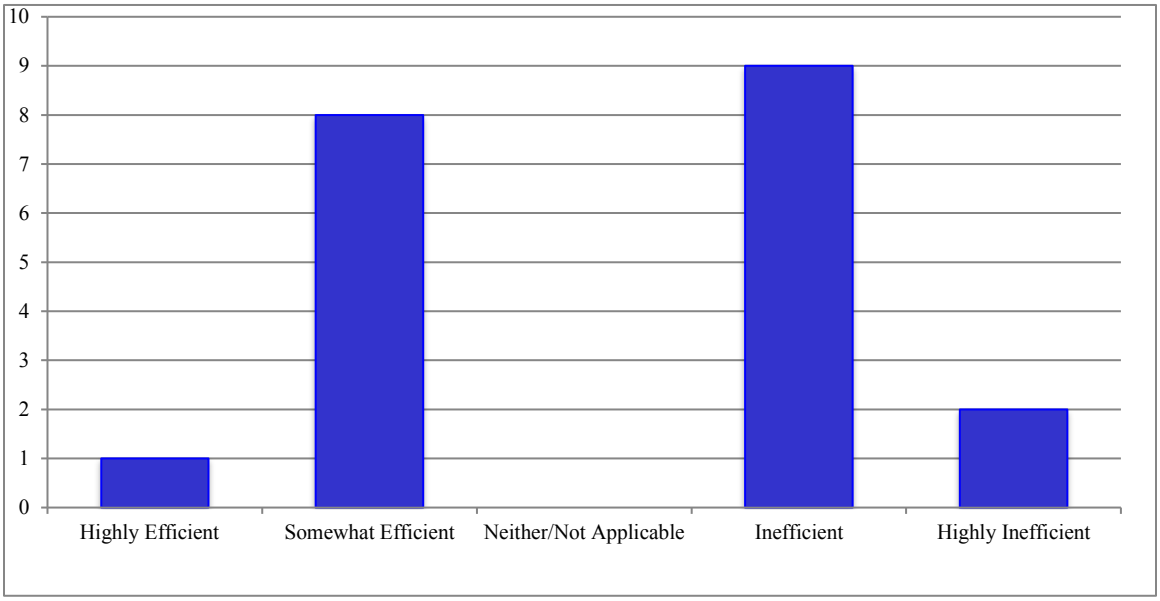
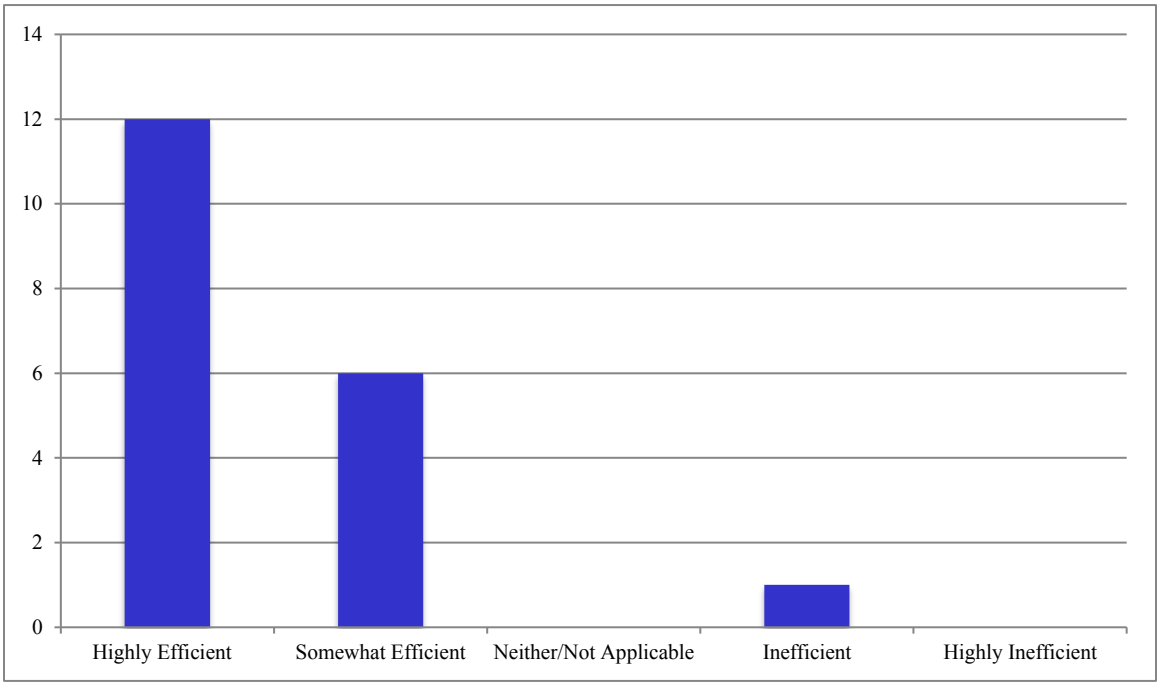
Appendix G: Perception of Efficiency of Integration

Question: *What is your perception of the efficiency of current primary care assessment data integration?*

Pre-survey



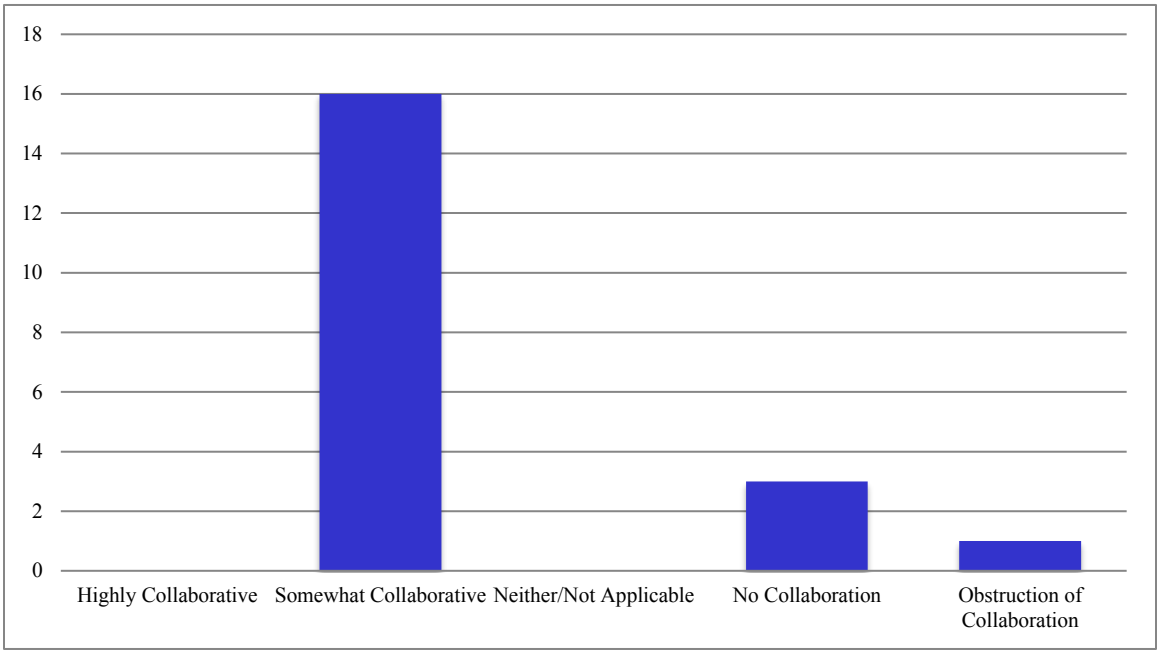
Post-survey



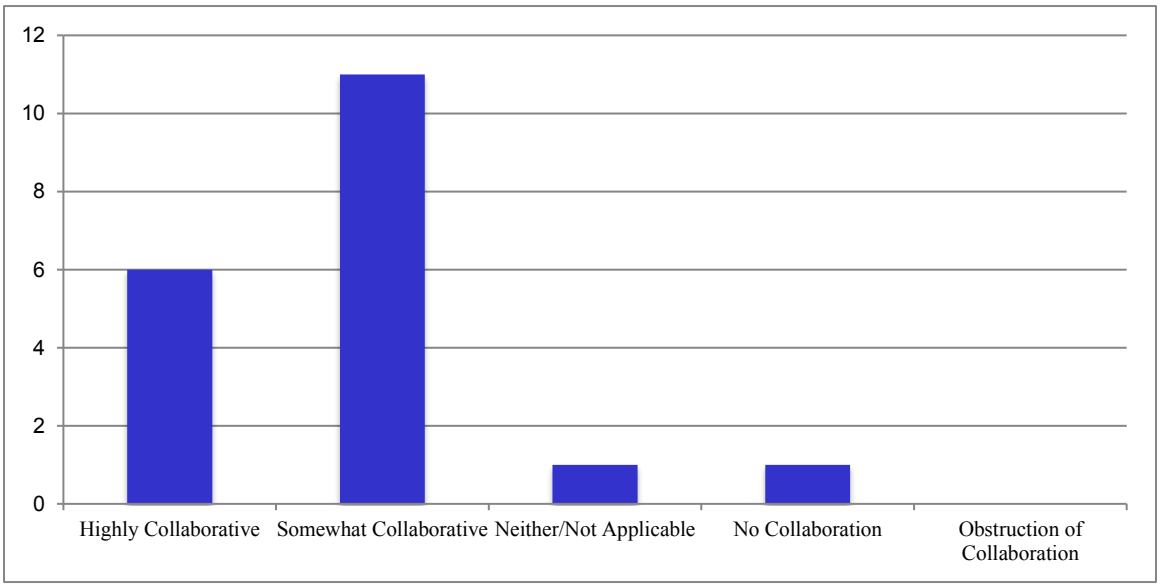
Appendix H: Perception of Collaboration

Question: *What is your perception of the degree of collaboration between primary care providers and behavioral health staff?*

Pre-survey



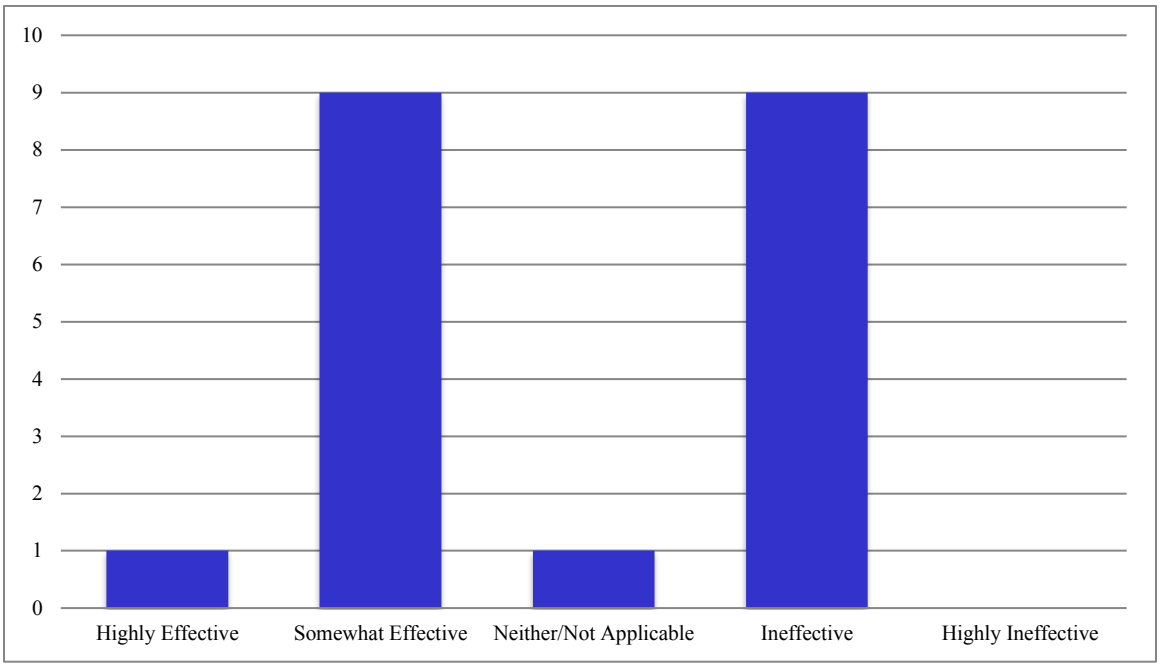
Post-survey



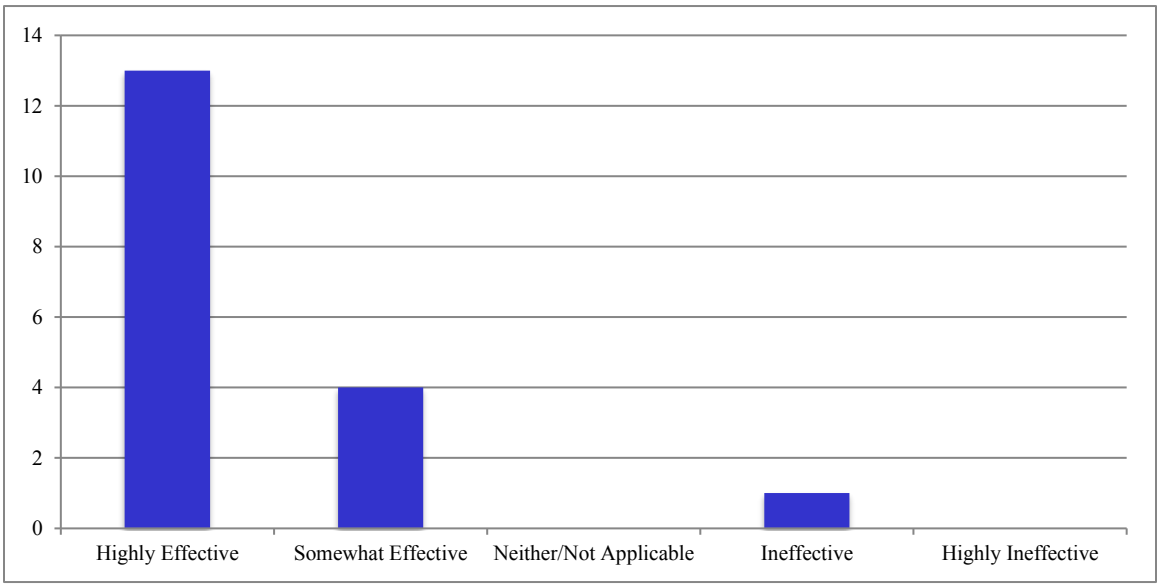
Appendix I: Perception of Effectiveness of Integration

Question: *What is your perception of the effectiveness of primary care assessment data integration into medication reviews and psychiatric evaluations?*

Pre-survey



Post-survey



Appendix J: Statistical Analysis

Efficiency of Integration

	YES = Highly Efficient + Somewhat Efficient	NO = Inefficient + Highly Inefficient
POST	18 13.154	1 5.8462
PRE	9 13.846	11 6.1538

Predicted values all greater than 5

Chi-Square Test: DF = 1, Value = 11.3151, Prob = 0.0008

Degree of Collaboration

	YES = Highly Collaborative + Somewhat Collaborative	NO = No Collaboration + Obstruction of Collaboration
POST	17 16.077	2 2.9231
PRE	16 16.923	4 3.0769

Predicted values not all greater than 5

Fisher's Exact Test: p = 0.6614

Effectiveness of Integration

	YES = Highly Effective + Somewhat Effective	NO = Ineffective + Highly Ineffective
POST	17 12.789	1 5.2105
PRE	10 14.211	10 5.7895

Predicted values all greater than 5

Chi-Square Test: DF = 1, Value = 9.0984, Prob = 0.0026