UNDERUTILIZATION OF MOBILE CRISIS TEAM SERVICES FROM LACK OF REFERRALS

by

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Capstone Paper submitted in partial fulfillment of the requirements for the degree of

Doctor of Nursing Practice

Chatham University

July 27, 2019

Signature Faculty Reader Date

Signature Program Director Date

Acknowledgments

I want to acknowledge the incredible and fantastic faculty at Chatham University for offering a comprehensive and robust doctorate program. I would especially like to mention Dr. Diane Hunker to thank her for her guidance and for showing me a clear path to follow during the course of my capstone. I give many thanks to Dr. Hunker for providing incredible feedback on all the chapter drafts. Her knowledge and experience made this journey attainable. Dr. Michelle Doas guided me when I was determining my capstone topic. A special thank you to Dr. Susan Sterrett, the first faculty who welcomed me to Chatham when I visited the school prior to starting the program. Many thanks to Dr. Sterrett for her feedback on my course work for her caring support to all of her students. I have no words to express my immense gratitude to Dr. Mary Dee Fisher who gave me a tour and was so kind and welcoming. I enjoyed her class immensely and admire her degree of involvement and positive feedback. A special thank you to my preceptor Dr. Raymond Zakhari, who informed me about the Chatham DNP program and agreed to precept me.

The entire project would not have been possible without the Holy Child Jesus. My faith kept me strong during the most difficult and challenging times. I want to acknowledge the tremendous support of my family, my mother Cecilia, my sisters Monica, Constanza, and Johanna, and my dear friend Pamela Kim Pearson. To all of them I give my gratitude for holding my hand and for listening at different times of the day and night, for their unconditional support, and for providing their love and care when I needed it the most. They all know that this project and the entire doctorate program was an incredible journey of learning, challenges, and professional growth for me.

Dedication

I would like to dedicate this Doctorate of Nursing Practice to my family. My mother Cecilia – tus palabras de cariño y de apoyo fueron siempre un aliento para mi, my father Daniel, who is no longer with us but he remains in our hearts and would be the first to cheer me up and would be very proud of his primogénita. My sisters Monica, Constanza and Johanna, all of you managing busy lives but still had time to offer your support with a call or email, and my dear friend Pamela Kim Pearson – your patience, your wisdom and knowledge is truly appreciated and invaluable. I kept you awake until odd hours of the night. Thank you for the long telephone conversations, you are a true champ.

A special thank you to my friend and neighbor Mrs. Margaret Elsbeck for her constant support and to my friend a colleague Mr. Lonniel Quarles for his great support. Thanks to all the psychiatric nurses and scholars who tirelessly work with mentally ill individuals on a daily basis, and to the aspiring nursing students who will learn about Mobile Crisis Services and the opportunities that offer to mentally ill individuals in the community; to all the patients and their families who I have had the privilege to interact with and assist. They have given me the experience to improve my skills to be a better clinician.

All of you in many ways have shown me that pursuing this degree was possible. All of you know that it has been an incredible journey. I have learned that committing to return to school after so many years was a tremendous challenge. I love you all and I am grateful to have you in my live.

Abstract

Mental illness is a leading cause of disability, early death, and chronic medical co-morbidities. Access to mental healthcare is a necessity for mentally ill individuals experiencing a mental health crisis in the community. Mobile crisis teams [MCTs] have evolved as an important service to fill the gap between mental health crisis in the community and standard of care such as hospitalization. In order to address MCT underutilization from lack of referrals the project manager [PM] designed an educational intervention on MCT services and referral process to improve the knowledge base of clinical social workers [CSWs] and enhance the MCT referral process. Findings from a comprehensive literature review revealed essential advantages for utilization of MCT services to assist mentally ill individuals. The findings demonstrated improved clinical outcomes for those receiving treatment in the community using interventions such as MCTs. MCTs reduce costs for qualified mental health services and decreased rehospitalization of mentally ill individuals experiencing a crisis. The outcome of the nursing practice change increased utilization of MCT services. Both the Interaction Model of Client Health Behavior and the evidence-based practice PEACE framework were used to guide the quality improvement [QI] implementation process. The results of this QI project demonstrated a 33% increase in the knowledge of CSWs which impacted greater utilization of MCT services. Rates of utilization as a result of the intervention demonstrated an 183% increase. In conclusion this QI nurse-led project sustained the change to improved patient-centered outcomes and reduced re-hospitalization for individuals experiencing a mental health crisis in the community.

Key words: mobile crisis teams, access to mental health services, knowledge base and referral process., PEACE framework, evidence-based nursing practice.

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Chapter One: Overview of the Problem of Interest

Mental health is defined as an individual's social, psychological and emotional well-being. Mental health reflects how individuals think, understand, interpret and behave (https://www.mentalhealth.gov, 2019, para. 1). In contrast, "mental illness is a condition that affects a person's thinking, feeling or mood. Such conditions may affect someone's ability to relate to others and function each day" (https://medlineplus.gov, 2019, para. 2). Current statistics from the National Alliance on Mental Illness [NAMI] indicate that an estimated 43.8 million adults in the United States have a mental illness with 9.8 million experiencing chronic mental illness and 45% of those going untreated (https://www.nami.org, 2019, figure 2). Mental illness is the cause of disability, early death, medical co-morbidities and chronic persistent decline in daily life (https://healthypeople.gov, 2019, para. 4).

In 2011, New York State Department of Health (https://www.health.ny.gov, 2011, para. 2) reported a loss of approximately 200 billion dollars in reduced earnings due to mental health problems. In addition, according to 2013 US data on estimated health costs, the healthcare cost of mental illness was at the top of the list with an estimate of 201 billion dollars (Roehrig, 2016, table 1). It has been projected in the US that mental illness costs will increase to 16.3 trillion dollars from 2011 through 2030 (Trautmann, Rehm, & Wittchen, 2016, p. 1246).

Mobile Crisis Teams [MCTs] were created to assist mentally ill individuals during acute episodes of mental health crises. MCTs provide immediate response to patients experiencing a mental health crisis in shelters, in patients' homes and in the community. MCTs provide mental health assessments and counseling for patients outside the standard care of the hospital. MCTs are also prepared to work in conjunction with patients' primary care providers to ensure that the patient will be engaged in consistent mental health treatment and thus avert a more severe mental

health crisis. MCTs have a first-hand opportunity to engage the mental health patient at their place of temporary residence or in their home.

Access to mental health care is an urgent necessity for individuals experiencing a mental health crisis. MCTs can provide immediate access to qualified interim psychiatric services for patients in the community. MCTs address the important gap between community-based mental health services and individuals experiencing a mental health crisis and were created as an alternative form of access to mental health care in the community (https://store.samhsa.gov, 2014, p. 10). "Access to Mobile Crisis Response Teams can help prevent crises and avoid unnecessary hospitalizations, police interactions, and arrests" (https://mentalhealthamerica.net, 2019, para. 13).

The purpose of this quality improvement [QI] project was to improve mental health patients' access to immediate mental health services through greater utilization of MCT services for residents in the catchment area. The community, or catchment area, is the designated geographical area serviced by the selected MCT for this QI project. This chapter provides background information and overview about the underutilization of MCT services from lack of referrals.

Background Information

In 1950 the management of persons in psychiatric crisis was the responsibility of state psychiatric institutions or "asylums for the insane" (Geller, 2000, p.42). The role of these institutions was to keep mentally ill individuals away from the community, especially those individuals that were perceived as a menace to society and the broader community. The creation of MCTs emerged from the need to have follow-up care of mental health patients after emergency room discharge. The enactment of the Community Mental Health Act in 1963

changed the protocols of treatment for the mentally ill in crisis from state psychiatric hospitals to hospital emergency rooms (Geller, 2000, p. 47). Visiting professional teams were conceived in 1963 and are known as the first mobile crisis teams. The new mandated venues for treatment were hospital emergency rooms with patients returning to the community after being stabilized. MCT services were implemented to prevent unnecessary hospitalizations and to ensure that patients were immediately linked to mental health resources in the community.

The identified problem of current underutilization of MCT services limits patients' immediate access to mental health services in the community. MCT services are linked to the community by a referral process. This linkage to mental health services in the community is currently managed by a referral process where clinical social workers [CSWs] follow-up inpatient and outpatient psychiatric care of a person experiencing a mental health crisis. The current process of MCT referrals presents a problem that hinders patients' access to qualified mental health services for individuals in the community.

The ability of MCTs to provide mental health services is intrinsically linked to an active referral process. A significant way to address the problem of underutilization of MCTs from lack of referrals began by searching for evidence-based practice [EBP] processes to support improved patient outcomes. This was attained by using the best evidence reported in the literature to help ensure this process. The use of EBP protocols in a consistent manner leads to effective interventions and patient outcomes (Mazurek Melnyk & Fineout-Overholt, 2019, p. 294).

The hospital that houses Community District 8 [CD8] Mobile Crisis Team is a short-term acute care facility with 2,410 beds (https://www.ahd.com, 2018, p. 1). This hospital has all medical specialties including emergency departments for medical and psychiatric services. In a

recent national trend of most large hospitals in urban areas, the number of psychiatric inpatient beds was reduced, and this facility has followed the same trend (Beachum, 2016, para. 3). In 2011 this CD8 hospital had 64 inpatient beds and by 2019 the capacity was reduced to 32 psychiatric inpatient beds. Based on this national trend of inpatient beds availability, it was imperative that MCTs in CD8 serve the community by providing outreach to patients having a psychiatric crisis in the catchment area. It was also imperative that CSWs employed at the selected site initiate MCT referrals to help mentally ill individuals get help in their homes and temporary residences, as well as to engage in immediate mental health treatment. The CSWs in this large urban hospital are professionals that only come in contact with patients and families in the emergency room, medical floors, or in their private practice offices. Many of these professionals are care managers and serve as primary care providers that have access to vital information regarding medical and social histories of patients and can potentially be instrumental in appropriately initiating referrals to the MCT in CD8.

Significance of the Clinical Problem

New York City [NYC] 2013 statistics indicated that approximately 630,000 people were diagnosed with mental illness, 239,000 suffered from severe mental illness, and forty percent of the total did not receive any mental health care in 2013 (https://thrivenyc.cityofnewyork.us, 2018, p. 28). The associated cost for treatment of mental illness in NYC was approximately 17 billion dollars which accounted for 25.6% of the total annual budget. This number only reflects statistical data from insurance companies and the value is unknown of cost for mental health treatment of mentally ill individuals who are undocumented (https://thrivenyc.cityofnewyork.us, 2018, p. 20). The New York State Department of Health also reported in 2016 an approximate 200 billion dollars lost in reduced earnings due to mental health problems. The report also stated

that many mentally ill individuals are unable to lead productive lives, are unemployed and have untreated chronic mental illness due to disability. The disability is related to not only chronic mental illness but also to having co-morbid medical conditions such as diabetes and obesity (https://www1.nyc.gov, 2015, para. 2).

In metropolitan New York City the mobile crisis teams are activated via NYC-Well (888-692-9355) and there are approximately 24 mobile crisis teams covering boroughs of The Bronx, Brooklyn, Manhattan, Queens, and Staten Island. Each team has designated areas of geographical coverage also known as a catchment area. The MCTs are specialized in specific populations to assist children, adolescents, and adults. A MCT receives referrals from NYC-Well with specific details and information related to an individual patient case. The MCT has 24 to 48 hours to respond to a case and must attempt an initial face-to-face meeting with the patient within that time frame (https://nycwell.cityofnewyork.us, 2017, para 1). In New York, the regulations from The Department of Health and Mental Hygiene dictate that a MCT maintains a case as open for a maximum of 21 days. The MCT must make a minimum of three attempts to meet with the patient to offer interim services or close the patient case (https://nycwell.cityofnewyork.us, 2017, para 1).

Mobile crisis teams are interdisciplinary groups of mental health professionals that work with the community and attend to where the crisis is occurring. The MCT clinicians conduct psychiatric evaluations, assessments and assist individuals in crisis with linkage to mental health services. Additionally, MCTs serve to reconnect patients with mental healthcare providers after a break in treatment. MCTs are summoned by the referral source to respond to a psychiatric crisis that might be related to an attempted suicide, violent behavior, substance use, psychosis or paranoia event (Kim & Kim, 2017, p. 877).

MCTs were created as a necessity to provide qualified mental healthcare in the community for mentally ill individuals in crisis needing immediate access to care. The potential impact that MCTs have on the population, community and individuals having a mental health crisis was reported as cost effective by substantial reductions in emergency room visits and decreased number of unnecessary hospitalizations (Kim & Kim, 2017 p. 878).

Question guiding inquiry (PICOT)

The PICOT is a first step in evidence-based practice used to structure questions for clinical practice and research (Elias, Polancich, Jones & Colvin, 2015 p. 594). PICOT stands for: P – Population/Patient or Problem; I - Intervention; C - Comparison Intervention or Group; O - Outcome; and T - Time frame that it will take to obtain results in supporting best evidence (Mazurek Melnyk & Fineout-Overholt, 2019, p. 17). The components of evidence-based practice are multifactorial to include populations, internal review boards, research, and target interventions. Sources of evidence-based practice include: systematic reviews, randomized controlled trials, practice guidelines and evidenced-based theories (Mazurek Melnyk & Fineout-Overholt, 2019, p. 66). A systematic step approach is used in evidenced-based practice including forming a PICOT question. The process begins with a literature search for best evidence; continues with the evaluation of evidence by finding if chosen evidence is valid, reliable and applicable to the population that is being studied. The next steps include applying the evidence to effect change in practice and evaluating the outcomes. The last step is to publish results and outcomes of the evidence-based practice change (Mazurek & Fineout-Overholt, 2019 p. 24). The goal of evidence-based practice is to provide the highest level of care and improve patient outcomes.

The PICOT question for this QI project is: *for CSWs on a MCT will increasing knowledge about the MCT referral process result in increased utilization of MCT services in the community?*

Variables of the PICOT question. To improve access to mental health care in the community by use of MCT services, the PICOT format was utilized to guide the literature search and review.

Summary

Mental illness is a pervasive condition that affects approximately 43.8 million individuals in the United States. The most prevalent diagnoses are characterized as serious or chronic mental illnesses such as major depressive disorder, bipolar disorder, and schizophrenia. Untreated mentally ill individuals may compromise the safety of the community, society at large, and increase the cost of healthcare. Mentally ill individuals residing in the metropolitan New York City CD8 benefited from having immediate and timely access to mental health treatment through MCT services. Clinical social work professionals working at the New York City Hospital CD8 were instrumental in increasing access to MCT services for individuals experiencing mental a health crisis in the community.

Mobile crisis teams were created to provide psychiatric patients with immediate access to qualified mental health services in the community. With an estimated U$16.3 trillion dollars as expected costs for persons diagnosed with mental health illness by 2030, the importance of having MCT services in the community has become paramount.

Chapter Two: Review of the Literature

The literature on Mobile Crisis Teams [MCTs] began formally in the 1950s after the deinstitutionalization of thousands of mentally ill individuals that were previously housed in asylums (Geller, 2000, p.42). In the early 1960s, the responsibility of managing mentally ill individuals was transferred from the state psychiatric long-term institutions to local hospitals and communities. In 1963 with the enactment of the Community Mental Health Act, protocols were established for the treatment of the mentally ill to include MCT services and it is comparable to MCT services today (Geller, 2000 p. 47). By 1967 the first MCT team that had multidisciplinary members providing mental health services in the community was established by a small urban hospital in New York City (Chiu & Primeau, 1991, p. 251).

The purpose of this chapter is to describe the literature review findings and present the supporting evidence for increasing knowledge among clinical social workers [CSWs] in an effort to increase utilization of MCT services. This evidence demonstrates how MCT services enhance mental health patients' access to care in the community.

Methodology

The methodology for the review of the literature included the sampling strategies and the inclusion and exclusion criteria. This literature review also included a comprehensive search on information related to mobile crisis team services by searching multiple databases including those from other fields of health science such as medicine, social work, psychology, and nursing.

Sampling strategies. The sampling strategies included searching reputable databases that have access to healthcare journals; peer reviewed journals, qualitative and quantitative studies and systematic reviews on the topic of mobile crisis and mobile crisis team services. The initial search for this project began using the Discovery search engine and by formulating

keywords in the Cumulative Index to Nursing Allied Health Literature [CINAHL], PsycARTICLES, PubMed, Cochrane Database, Google Scholar and Ovid. The databases used for the search of evidence were concentrated in health sciences databases. The subsequent searches included Medline ® and PsychINFO ® using Boolean logic and phrases such as crisis intervention, referral and consultation, barriers, access, mobile crisis teams, access to mobile crisis teams, mobile crisis team services and utilization of mobile crisis teams.

The project manager [PM] used Melnyk and Fineout-Overholt's (2019) "rating system for the Hierarchy of Evidence for Intervention/Treatment Questions" to search for best evidence to support this quality improvement [QI] project (Mazurek Melnyk & Fineout-Overholt, 2019, Box 1.3, p. 18). During the initial search, studies were found to support the role of MCT services in providing improved access to patient care in the community. Further research addressed the underutilization of MCT services by clinicians such as CSWs and other healthcare professionals. The initial search yielded studies from Level I to Level VII evidence. For this QI project, five articles were selected at Level I, Level II and Level III as evidence to address the problem. Level I evidence included systematic reviews or meta-analyses of randomized controlled trials [RCTs]. Level II evidence included well designed RCTs and Level III evidence included well designed controlled trials without randomization (Mazurek Melnyk & Fineout-Overholt, 2019, Box 1.3). In each of these five studies randomized trials of treatment using MCT services in the community were compared to treatment in the hospital using standard mental health care services.

Inclusion/Exclusion criteria. The inclusion criteria for the initial literature search included current articles and studies for the past six years (2013 – 2019). Other literature inclusion criteria included articles written in the English language, articles conducted with

human subjects and articles that were peer reviewed. The exclusion criteria included articles for which there are no clear results presented, articles that were written in other languages and articles that were using non-human subjects.

Additional literature searches included years 1960 to 2013, as well as indexing phrases, to include crisis intervention for people with mental illness, crisis intervention services in the community, large urban hospitals and access to mental health care.

Literature Review Findings

A literature search on mental health interventions, specifically on the use of MCTs, yielded research studies. The evidence found to support this project had a common thread and revealed that MCTs are evaluated based on the type of intervention, sample size, and clinical outcomes. In a systematic review of eight randomized controlled studies, four were selected to serve as the evidence base for this QI project (Murphy, Irving, Adams, & Wagar, 2015, p. 5).

A Cochrane systematic review of 8 studies on "crisis intervention for people with severe mental illnesses" included 1144 participants indicating that crisis intervention models reduce readmission to the hospital at six months (RR = 0.75 CI 0.50 - 1.13). This study reviewed the effects of crisis intervention models managing chronically mentally ill individuals in a behavioral health crisis and compared it to standard care or hospitalization. The crisis services were provided by a multidisciplinary trained team (Murphy et al., 2015, p. 5) and were found to be effective, less costly than standard care, and a better option for the patient than going to the emergency department (Murphy et al., 2015, p. 2). Thus, the crisis intervention model of treatment found in the literature revealed a decreased readmission to the hospital, decreased costs associated with care, decreased burden on caretakers and family, and increased patient satisfaction of mental health services (Murphy et al., 2015, p. 27).

The first study selected from the literature review consisted of a randomized controlled study of 260 adults. The control group of this study was hospitalized and serviced by hospital inpatient staff while the experimental group worked with the mobile crisis team and were managed at home or in the community. The results of this study (Johnson et al., 2005, table 2) indicated that participants in the experimental group receiving mental health services from the crisis team were less likely to be admitted to the hospital (odds ratio = 0.19, 95% CI 0.11 - 0.32) and patients were less likely to be readmitted to the hospital after three months of the intervention (RR = 0.53, 95% CI 0.41 - 0.68) per the Cochrane systematic review (Murphy et al,. 2015, p.21).

The second study selected from the literature review consisted of a randomized sample of 119 adults with a history of multiple inpatient admissions. The experimental group began treatment with crisis staff at a residential facility while the control group was in the hospital setting. Project outcomes included 87% of participants in the experimental group successfully transitioning to the community after completing residential treatment (Fenton, Mosher, Herrell, & Blyler, 1998, p. 520). These findings (Murphy et al., 2015, p. 21) were further compared to two studies using a combination of Johnson (2005) with Fenton (1998) which also indicated that fewer participants were readmitted to a hospital after crisis intervention (n=369, RR = 0.75, 95% CI 0.50 - 1.13).

The third study selected from the literature review was based on a randomized sample of 120 people. The control group was treated in the inpatient facility using standard care procedures and the experimental group was treated in the home using 24-hour MCT services staffed with a multidisciplinary team. The findings in this study indicated that the experimental group was effectively treated in the community and required fewer hospital readmissions with

60% of the participants not requiring admission 12 months post-intervention (Hoult, Reynolds, Charbonneau-Powis, Weekes, & Briggs, 1983, table 1). Other additional clinical outcomes of this study (Murphy et al., 2015, p. 22) were improved management of behavioral crisis by providing treatment in patients' homes; increased patient satisfaction with treatment intervention (n=120, RR = 0.65, 95% CI 0.40 - 1.07) and an overall patient positive outcome of 55% (Hoult et al., 1983, table 4).

The fourth and final study selected from the literature review included a study with a sample of 189 participants. The experimental group received care at home and the control group received standard care in the hospital (Muijen, Marks, Connolly, & Audini, 1992, p. 749). Results of this fourth study showed the experimental group experiencing less time in the hospital with a median stay of six days, while participants in the controlled group had a longer stay and a total length of stay of 53 days. The staff that worked with the experimental group prevented 23% of readmissions with an 80% reduction of admissions by using home care interventions (Muijen et al., 1992, table III). Additional outcomes of this study were increased patient and family satisfaction with care at home.

The findings from the systematic review of these selected research studies support this QI project. These findings demonstrated improved clinical outcomes for patients receiving treatment in the community using MCT services. This evidence also supported the use of MCTs to decrease rehospitalization of chronically mentally ill individuals during a crisis and reduced costs for immediate mental health services for patients in the community.

Discussion

Limitations of literature review. The literature review process for this QI project presented several challenges. The first challenge was the lack of specific empirical data that

addressed underutilization of MCT services in the community. A second limitation of the literature review was that samples used were relatively small and only representative of the geographical areas where the data was collected. The results of those studies may only be reflective of that hospital and one distinct geographical area cannot be replicated using another more heterogeneous sample.

A fourth and final challenge of the literature review was related to the search for nursing research evidence on MCTs. MCTs where nurse clinicians were a part of the treatment team were nonexistent. This contrasts with current MCTs having at least one licensed clinician such as a social worker, a psychologist or an advanced practice nurse. Other MCT team members to be included are peer specialists and/or law enforcement agents. There is a new trend among MCTs to include additional professionals in mental health using the interdisciplinary model like NYC-WELL and the new models which may include a nurse clinician (https://www1.nyc.gov 2019, para. 1).

Conclusion of findings. The literature review revealed essential aspects and advantages for the utilization of MCT services to assist in the community. These findings from the systematic review supported this QI project. The findings demonstrated improved clinical outcomes for those getting treatment in the community using interventions such as MCTs. This evidence also supported the use of MCTs to reduce costs for qualified mental health services and decreased rehospitalization of mentally ill individuals experiencing a crisis.

Potential project. The implementation of enhanced and ongoing educational sessions on MCT services improves access to mental health care by increasing the knowledge base of clinical social workers [CSWs] and the MCT referral process. The literature review supported the use of MCT services as an appropriate option for mental health care for those individuals in

the community having a severe mental health crisis. By increasing the knowledge base of CSWs on the use of MCT services they had a greater impact on the utilization of MCT referrals.

The potential practice change from underutilization of MCT services due to lack of referrals directly affected individuals in the community having a mental health crisis. The practice change using current protocols to increase dissemination of MCT services, in addition to improving inter-professional collaboration and education, was necessary for the improvement of access to immediate mental health services in the community. The creation of formal educational protocols regarding MCT services to include CSWs and professionals from other disciplines impacted the utilization of MCT services at the selected site.

Summary

Mental illness is a pervasive condition that affects approximately 43.8 million individuals in the United States. Untreated mentally ill individuals increase the cost of care, compromise the safety of the community and society at large. Mentally ill individuals having a mental health crisis and residing in New York City CD8 benefit from having immediate access to mental health treatment though MCT services.

This literature review yielded irrefutable data to support the use of MCTs as an optimal option for the assessment and treatment of those individuals in the community having a severe mental health crisis at home or at a temporary residence. The results indicated that MCTs are effective in reducing patients' hospital readmissions, reducing the costs associated with care and increasing patient satisfaction. It is imperative to improve the knowledge base of all stakeholders and this project educated CSWs at the selected site on MCT services. In addition, this project improved overall patients' access to immediate mental health care in the community.

Chapter Three: Theory and Model for Evidence-based Practice

Nursing theory is a process that is guided by a systematic approach to learn about and understand nursing practice phenomena (Chism, 2019, p. 98). Nursing theory is the outcome of a rigorous process of inquiry that connects concepts describing, explaining and linking them to nursing sciences. Nursing theory has been classified into conceptual models, grand theories and middle-range theories (Chism, 2019, p. 99). For this quality improvement [QI] project a middle range nursing theory and a nursing practice concept model were selected to understand mobile crisis team [MCT] services on the immediate access and referral process to mental healthcare for patients in the community. The middle range nursing theory for this QI project is the Interaction Model of Client Health Behavior (Cox, 1982; Mathews, Secrest and Muirhead, 2008). The concept model for evidence-based nursing practice [EBP] is the PEACE framework (Tahan el al., 2016; Zakhari & Sterrett, 2016). The purpose of this chapter is to present the middle range nursing theory of the Interaction Model of Client Health Behavior [IMCHB] and the concept nursing model of EBP PEACE framework to understand MCT services in the community as it relates to the referral process by clinical social workers [CSWs].

The purpose of this QI project is to improve MCT services in order to provide greater access to immediate mental healthcare services for individuals experiencing a severe mental health crisis in the community. This will be achieved by educating CSWs on the MCT referral process that impacts the current standards of patient care for mentally ill individuals experiencing a mental health crisis in the community.

Theory

The Interaction Model of Client Health Behavior (Cox, 1982, p. 46) emphasizes the importance of treating patients as unique individuals. The interactions initiated by the patient

with healthcare professionals should be supported by a patient-centered care plan with personalized interventions for the patient (Cox, 1982, Figure 1). The main focus of the IMCHB theory is centered on the process that occurs during patient-professional interactions. It is important to consider that the patient has the capability to make informed decisions about his/her healthcare and this behavior is the reflection of how the patient uses personal qualities to make those decisions. Internal and external factors from the patient are also important to consider because those factors impact greatly the decisions and behaviors that the patient will make regarding his/her healthcare (Cox, 1982, p. 47). The IMCHB is also an EBP practice theory.

This theory was specifically created for advanced practice nurses for implementation in clinical practice. The primary outcomes when professionals follow this EBP theory are increased utilization of healthcare services; improved patient health outcomes; increased patient satisfaction and greater patient compliance with treatment plans.

Application to practice change. The primary tenet of the IMCHB theory emphasized the role of the nurse in the clinical setting and the individualized patient-centered care approach. This interaction between the client with the healthcare professional can help guide the process of practice change in nursing practice. The uniqueness of the patient including their demographic factors is the basis of patient behaviors that contribute to better health outcomes, utilization of healthcare services, and compliance with treatment (Cox, 1982, p. 53).

Evidence-Based Practice Change Model

The evidence-based concept model selected for this QI project is the five-step PEACE framework (Tahan et al., 2016, p.58). Each letter in the PEACE framework represents a mnemonic that describes an EBP process and provides a five-step acronym for recall during nursing practice. The PEACE framework has five steps: (P) problem identification; (E) evidence

review, (A) appraisal of the evidence, (C) change in practice, and (E) evaluation of the practice change or to evaluate the research findings (Zakhari & Sterrett, 2016, figure 1). The PEACE framework was developed in 2011 by the New York Presbyterian Hospital shared governance and nursing evidence-based practice and research councils (Tahan et al., 2016, p. 58).

The purpose of the PEACE framework is to provide guidelines for improved patient care in QI projects. This framework bridges actual clinical protocols with evidence-based nursing practice. It allows for the integration of collaborative efforts between interdisciplinary teams and it fits with the current MCT structure which is interdisciplinary. This framework was selected because it is evidence-based and is appropriate to impact change practices in MCT services. It is an evidence-based five-step systematic framework and can be implemented within inpatient and outpatient settings (Tahan et al., 2016). The PEACE framework is outlined below.

(P) Problem identification is the most critical step in the PEACE framework. In this initial step there is clear identification of the EBP problem or question. This step takes into consideration nursing knowledge, clinical practice, and the site where potential clinical problems may exist. For example, the problem of underutilization of MCT services from lack of referrals may contribute to mentally ill individuals in crisis not receiving immediate access to mental health treatment in the community.

(E) Evidence review is the second step in the PEACE framework and is performed by conducting searches and evaluating the evidence to support a nursing practice change. For this QI project, a literature search was conducted using various databases. The databases used for search of evidence were concentrated in health sciences databases using Boolean logic and phrases such as mobile crisis teams, access to mobile crisis teams, utilization of MCTs and referral and consultation.

(A) Appraisal of collected evidence by conducting a critical assessment and analysis is step three of the PEACE framework. An exhaustive and thorough review of evidence is completed to select the best evidence to support a nursing practice change. This third step is completed by using standardized appraisal guides, appraisal critiques and analyses. This step also includes the preparation and completion of a table summarizing the evidence. For this QI project, an evidence-based table was prepared to include selected journal articles used for supporting evidence.

(C) Change in nursing practice in the PEACE framework. Change in nursing practice that is based on evidence begins the process of implementing change. During the quality improvement project if there is not enough evidence for a practice change, the next step will be to conduct further research.

(E) Evaluation of the practice change is the fifth and final step in the PEACE framework. This step is the evaluation of the practice change which is the confirmation that the problem identification was addressed comprehensively. In this case the PM compared MCT referral data before and after the intervention to address the change in MCT referral process and improved access to qualified mental health services based on the greater utilization of MCT services.

The structure of the PEACE framework encompasses a systematic approach in a PICOT format based on a five-step evidence-based process (Mazurek Melnyk & Fineout-Overholt, 2019, table 2.2). An example of the implementation of the PEACE framework to support changes in clinical standards of practice at the organizational level occurred at the selected site. In this case, procedures, protocols, and standards in nursing practice were updated using the PEACE framework (Zakhari, & Sterrett, 2016). By using EBP frameworks, clinicians secure the use of the best evidence to support clinical practice changes. The applicability of this framework

to MCT services was the optimal fit at the selected site in order to improve patients' immediate access to mental healthcare services.

The PEACE Framework summarizes key elements of the most relevant evidence-based practice models such as the Johns Hopkins Nursing Evidence-Based Practice Model, the Iowa Model of Evidence-Based Practice, the Stetler Model of Research Utilization, and the ACE Star Model of Knowledge Transformation (Tahan et al., 2016, p. 58). The PEACE framework simplified the EBP by developing a five-step process while not compromising the rigorous process of evidence-based practice.

Application to practice change. The key features of the PEACE framework focus on addressing and finding the best evidence to support practice changes for all clinical practices. It addresses collaboration in decision-making processes between nurses and nurse leaders by empowering nurses to make crucial clinical practice decisions. This framework links QI research with EBP. By determining the barriers to utilization of MCT services from lack of referrals, this QI project bridged the gap between community-based mental health services and individuals in mental health crisis residing in the community.

The application of the PEACE framework for this practice change project resulted in several outcomes including: increased knowledge base of CSWs on the use of MCT services, increased effective inter-professional communication that supported patient centered quality care (Mazurek Melnyk & Fineout-Overholt, 2019, table 9.4), and increased the number of MCT referrals as a result of the intervention. Outcomes of this QI project that were not measured are: formation of a positive attitude in CSWs about MCT, change in attitude about the role of MCT services, patient satisfaction with MCT services and number of hospitalizations as follow-up after MCT services.

The PEACE framework assumed that all five steps of the process were present including the elements of a PICOT question. It also assumed the inclusion of the evaluation of the practice change. This framework was used by following the five-step process. Nurses from a shared governance council, an evidence-based practice council and a research council from a metropolitan New York hospital developed this framework as a necessity to assist in the implementation of clinical practice change and to enrich nursing knowledge. By applying the PEACE framework to this QI project, the PM was able to effect practice change that improved the MCT referral process among CSWs at the selected site.

Summary

The guiding middle range theory for this QI project was the Interaction Model of Client Health Behavior (IMCHB) that emphasized the importance of interaction between patients with healthcare providers and how those interactions contributed to personalized care including patient-centered care practices.

The PEACE framework provided guidance to evidence-based practice change in clinical settings including MCT services. There was evidence that MCT services are a useful resource to the community and to patients in mental health crisis. The patient referral process by CSWs to MCT services was essential for immediate access patient care. The improvement in the access to immediate mental healthcare, as well as the expansion of mental health services in the community, were paramount to ensuring the standard of care for mentally ill individuals experiencing a mental health crisis.

Chapter Four: Pre-implementation Planning

Quality improvement [QI] projects follow a systematic approach in order to direct change in nursing practice that supports patient-centered care and improvement in the delivery of healthcare services (Harris, Roussel, Dearman, & Thomas, 2020, p. 58). In order to address any gap in healthcare services, QI projects must intentionally address the quality, safety and value-base initiatives to improve patient outcomes (Harris et al., 2020, p. 59). Quality improvement projects must involve the nursing management and include interprofessional teams, as well as the project manager [PM], in order to be successful. Interprofessional teams are the essential drivers that help ensure better patient outcomes of QI projects (Mazurek, Melnyk & Fineout-Overholt, 2019, p. 439).

Increasing the knowledge base of mobile crisis team [MCT] services among clinical social workers [CSWs] and improving the referral process of MCT services at the selected site were the two main objectives of this QI project. Both enhanced the utilization of MCT services in the community. This chapter provides details on the QI project plan, QI project management, project assessment of the selected site, a SWOT analysis, the organizational approval process, the role of information technology, the plan for QI project evaluation and management of data.

Project Purpose

The purpose of this QI project was to improve the knowledge base and enhance the MCT referral process by educating CSWs at the selected site on the MCT's services with the goal to improve patient's immediate access to appropriate mental health care services for residents in the catchment area.

Project Management

Project management is defined as the "application of knowledge, skills, tools, and techniques to project activities to meet project requirements" (Harris et al., 2020, p. 4). Project management can be executed by following a systematic approach along a timeline to include planning, monitoring, organizing and reviewing the QI project (Harris et al., 2020, p. 5). Project management also includes the use of interdisciplinary collaboration, stakeholders' input, and use of selected site resources. Appropriate and careful project management promotes successful QI project outcomes.

Project management of this QI project was implemented by the PM at the selected site. The selected site was a Level I Adult and Level II Pediatric Trauma Medical Center. The selected site was a large urban hospital with 2410 beds offering high standard care in multiple sub-specialties (https://www.ahd.com, 2018, p. 1). The selected site was located in the New York City metropolitan area in the Upper East Side of the Island of Manhattan. The site was one of the top hospitals of the United States and a leading hospital in the New York metropolitan area. MCT services operated out of the hospital and was housed in the hospital's Department of Psychiatry. MCT services had been in operation for at least 3.5 years.

Organizational readiness for change. Readiness for change significantly determines whether a QI project succeeds or fails (Harris et al., 2020, p. 196). The selected site for this QI project had a demonstrated need for change in nursing practices to improve the knowledge base about MCT services and corresponding referral process. Two examples of the demonstrated need were related to opening a new Comprehensive Psychiatric Evaluation Program [CPEP] and applying for the American Nurses Credentialing Center [ANCC] Magnet designation.

In 2015, the selected site opened the CPEP. This CPEP had four mandatory components: psychiatric emergency room, extended observation beds, one off-site crisis respite bed, and MCT Services. Since opening for healthcare services in June 2015, the MCT had received referrals predominantly from NYC-WELL which was a city program sponsored by the state to activate MCTs and to provide counseling services. MCT referrals in New York City came from mental health care providers and patients' families using NYC-WELL by calling the toll-free service at 1-888-692-9355 (https://nycwell.cityofnewyork.us, 2017). Questions remained about the underutilization of the MCT at the selected site. The selected site healthcare system and the Department of Psychiatry made a substantial financial investment upon opening the new CPEP in 2015 and both entities were working in coordination to ensure CPEP program success.

The Psychiatry Department at the selected received the ANCC Magnet designation in 2019 which "is the highest and most prestigious distinction a healthcare organization can receive for nursing excellence" (Drenkard, 2010, p. 1) and there were efforts by administrators to support clinical staff such as advanced practice nurses to lead evidence-based projects for QI. This QI project supported the current selected site strategic plan to become the leader in healthcare system organizations in New York City. Increased utilization of MCT services met current goals for improved mental health patient outcomes and met standards of care to the population that they served (Hickey & Brosnan, 2017, p. 127).

Inter-professional collaboration. The American Association of Colleges of Nursing [AACN] published the "*Essentials of Doctoral Education for Advanced Nursing Practice*" recommending inter-professional collaboration for improving patient and population health outcomes (https://www.aacnnursing.org, 2006, p. 14). The AACN also mandated for the provision of safe, equitable, and patient-centered care to include collaboration among disciplines

involved in the delivery of care. For MCT services in this QI project, there was interdisciplinary involvement of various disciplines from nursing, medicine, social work and nursing administration. MCT service providers collaborated among care managers, pharmacists, peer counselors and specialists in information technology.

The care managers coordinated care of patients while they were hospitalized or in the community before they were discharged. The pharmacists reviewed patient's medication regiments and verified that there were no contraindications or potential medication interactions. The peer counselors communicated directly with patients in the community as advocates for patient care, especially for mentally ill patients. The specialists in information technology were key to accessing data bases and obtaining specific information related to electronic health records, statistics and overall patient data.

Risk management assessment. The risk assessment for this QI project was completed in the pre-implementation phase using a standard tool known as the SWOT analysis (Harris et al., 2020, p. 141). The SWOT analysis is an acronym that stands for strengths, weaknesses, opportunities, and threats. The strengths and opportunities are essential elements that will help with implementing a change in contrast with the weaknesses and threats that may obstruct any potential outcome (Misbah & Mahboob, 2017, p. 2). The strengths and weaknesses of the risk assessment are internal factors to the organization while the opportunities and threats are external factors (Harris et al., 2020, p. 112).

Strengths. The four identified strengths of this QI project included: strong internal support from stakeholders, strong inter-professional collaboration, recent application for Magnet designation at the selected site, and evidence-based practice [EBP] committee guidance for QI projects. The selected site had internal support of hospital administrators, including the

psychiatry department Director of Nursing and Director of Quality Improvement and Patient Safety. This level of strong internal support at the selected site promoted access to site resources, equipment, and meeting space used during the QI project intervention. This QI project strength also supported the construction of an email participant list used in the implementation phase of this QI project.

The second identified strength of this QI project was the strong inter-professional collaboration which was evidenced by the mobile crisis interdisciplinary team. Multi-team collaboration was key to the QI project success. A third identified strength was that the selected site had submitted an application for Magnet designation where nurses led EBP quality improvement projects to effect practice change. This application for Magnet designation was prestigious and was one of the most important designations for the improvement of patient care and nursing excellence. The fourth strength was evidenced by the selected site having active nurse led EBP committees that developed an EBP nursing practice framework, the PEACE framework (Tahan et al., 2016, p. 57). The PEACE framework was selected and used in this QI project.

Weaknesses. There were two potential weaknesses related to this QI project. The MCT was relatively new and the hours of operation were limited at the selected site. The MCT began operations in June 2015 and it was the newest program in the Psychiatry Department at the selected site. The data comparison was limited to the experiences of this MCT team only and may not accurately reflect other MCT services in other geographical locations.

The second potential weakness was the limited hours of operation for the MCT to provide mental health services to the community. The schedule was limited to Monday through Friday, 8:00 am – 8:00 pm; weekends and holidays 10:00 am – 6:30 pm having no extended hours of

operation outside those regular hours. MCT services were only offered during limited day, holiday and weekend hours although behavioral crises can occur at any time of the day or night. There was no on-call service coverage outside of the regularly established schedule and this potentially impacted people in the community seeking access to mental health services during crisis.

Opportunities. For this QI project, three opportunities were identified. The first opportunity was to increase access to MCT services in an urban area by providing immediate access to mental health care during a crisis. The second opportunity was that MCTs could respond based on close geographical proximity to intervene and assist patients in a mental health crisis. The third opportunity was that MCTs could provide qualified mental health services in the community to prevent unnecessary emergency room visits. All the identified opportunities presented great value to MCTs as an excellent service provider in metropolitan areas that may intervene promptly and help avert a mental health crisis of those individuals in the community.

Threats. There were two identified threats for this QI project. The first identified threat was resistance to change in nursing practice by CSWs. This threat was that CSWs felt more compelled to attend educational sessions from within their discipline instead of nursing. In addition, the intervention did not provide any continuing education credit and was perceived as applying to nursing only. The second threat was that there was variability on how each patient was managed depending on their presentation during initial assessment.

To address the first threat, it was mandatory that anyone treating patients in the community had to have mandatory MCT training. This overcame the first identified threat. Regarding the second threat, MCT clinicians were instructed to follow strict protocols when

screening patients before initiating MCT services in the community. This decreased variability on how patients were managed.

Organizational approval process. Another crucial step in the process of QI project management was obtaining approval from administrators to complete the QI project. The PM met with the Director of Nursing to discuss the QI project and subsequently completed the Graduate Student Project Proposal Application which was a requirement for all QI projects at the selected site. The PM submitted the proposal application to the site Director of School Affiliations and the Director of Nursing Quality and Patient Safety. The PM had subsequent meetings and telephone conversations with site administrators to obtain approvals. The PM also completed regular and supplemental mandatory training on good clinical practices and human subjects as well as Collaborative Institutional Training Initiative [CITI] training modules. The PM submitted the Quality Improvement Checklist to the selected site Institutional Review Board [IRB] and received approval to commence the QI project on April 19, 2019 (Appendix B).

Use of information technology. The use of information technology was critical for this QI project. The PM accessed multiple databases to search for evidence-based literature to support this QI project. The PM communicated with key stakeholders, completed participant recruitment and conducted participant communication via email. The PM prepared the project intervention using audiovisual technology. The plan for continued use of technology for this QI project included data management and presentation of nursing practice change outcomes.

Materials Needed for Project

For this QI project there were supplemental materials used in preparation for pre-implementation. A total of 200 educational cue cards was produced at the selected site's educational resource service office. A total of 120 questionnaires were prepared for each phase

of the intervention. On site computer resources with encrypted software properties were prepared to collect, enter and analyze QI project data. An encrypted file of the visual presentation was saved in the selected site's database and was accessed only by the PM for educational in-services using the technology that each of the rooms had pre-installed. All hard copies of materials and documentation related to the QI project were kept in a locked cabinet safeguarded inside the PM's office.

Plans for Institutional Review Board Approval

The PM submitted the Quality Improvement Checklist to the selected site IRB and obtained approval to commence this QI project on April 19, 2019 Protocol No. 19-04020214. This QI project was a protocol that did not constitute human subjects research. This QI project was considered a quality improvement/quality assurance project. Therefore, neither IRB approval nor a notice of exemption was required to proceed with the project (Appendix B).

Plan for Project Evaluation

Project evaluation is defined as "the systematic collection of information about the activities, characteristics, and outcomes of the project" (Harris et al., 2020, p. 225). The QI project plan to evaluate outcomes was to compare pre-intervention questionnaire responses with post-intervention questionnaire responses of CSWs knowledge about MCT services and referral process. The specific data from project questionnaire on questions 6, 7, and 8 was compared from pre-intervention responses to post-intervention responses. An evaluation of the MCT referral process based on the number of MCT referrals received one month before and after the QI project implementation was analyzed.

The benchmarks are the metrics that represent a level of performance meeting standard requirements of care. Benchmarks are essential considerations for QI projects (Harris et al.,

2020, p. 171). For this QI project, the PM selected two conservative benchmarks. The first benchmark of 10% was an increase in CSWs knowledge base of MCT services post-intervention compared to pre-intervention. The second benchmark was a 10% increase in the number of MCT referrals post-intervention compared to pre-intervention using available data from the MCT's selected site. The knowledge base increase in CSWs regarding the referral process to MCT services was to reflect an increase in the number of MCT referrals post-intervention.

Plan for demographic data collection. The process of collecting data for any project must be systematic and the PM needed to have a clear understanding of what type of data would be collected including the variables (Salkind, 2017, p. 155). The process of data collection is critical and may continue until QI project goals have been met (Mazurek Melnyk & Fineout-Overholt, 2019, p. 648). For this QI project, the plan for data collection was to collect the demographic data using the questionnaire pre-intervention and post-intervention. The data collection for this QI project consisted of demographic data of the CSWs employed at the selected site. The demographic data collected for this QI project was used to accurately describe the participant group. Demographic data included gender, age, department in which each CSW was employed, years of clinical experience, and included CSWs knowledge base of MCT services. Additional data was gathered on the total number of MCT referrals pre-intervention, the total number of MCT referrals post-intervention, and the total number of CSWs that participated in the project. Subsequent analysis of the collected data yielded percentages, range and means of variables of CSWs who initiated the process of MCT referrals.

Plan for outcome data collection and measurement. The process of data collection is closely related to the process of measuring the project outcomes. For QI projects, the outcomes are the "cornerstone of quality improvement" (Harris et al., 2020, p. 200). For most QI projects

the goal is to improve patient outcomes by implementing EBP practice changes. In the case of this QI project, the first outcome was in increase of CSWs knowledge about MCT services post-intervention compared to pre-intervention. The second outcome reflected greater utilization of MCT services by increasing the number of referrals post intervention compared to pre-intervention.

The outcomes of the data analysis supported the effectiveness of the QI project practice change. In this case the increase in knowledge base of CSWs about MCT services reflected an increase in the utilization of MCT services and an increase in the number of MCT referrals post-intervention. The percentage changes between pre-intervention values compared to post-intervention values reflected an increase in percentage of MCT referrals.

Plan for evaluation tool. The measuring tools are specific to QI projects and facilitate the accurate collection of data (Salkind, 2017, p. 157). For this QI project, the PM developed a nine-item questionnaire (Appendix D) used during pre-intervention and post-intervention. The questionnaire included four demographic questions while the remaining questions addressed knowledge about MCT services and the MCT referral process. The PM recorded the number of MCT referrals prior to the intervention and post intervention. Data from pre-intervention and post-intervention surveys was compared and the difference in mean score demonstrated an increased rate of MCT referrals (Harris et al., 2020, p. 199). This difference in the mean score indicated that the QI project intervention improved utilization of MCT services among CSWs at the selected site.

Plan for data analysis. Data analysis of QI projects is another significant step in the process of project evaluation. The calculations and statistical analysis of data values is another important step in the data computation of any EBP practice change project. The types of

calculations and statistics to be used are based on the types of data collected and should be appropriate in the analysis and presentation of the project results. Careful attention to this step can ensure the successful outcome of the project (Harris et al., 2020, p. 211; Mazurek Melnyk & Fineout-Overholt, 2019, p. 648).

The data collected for this QI project included data on demographic variables of the participants and data for the project outcomes pre-intervention and post-intervention. All questionnaire data was coded and entered in to an Excel Spreadsheet for subsequent data analysis.

For this QI practice change project, the PM planned the demographic data analysis using Excel 2016 Toolpak. The PM calculated a set of descriptive statistics with measures of central tendency to include mean, mean percentages, percentage mean difference, and a t-test for pre-intervention and post intervention responses. The statistical results for the demographic data was presented in ranges, percentages and means of the responses from each demographic item in the questionnaire. Other data collected from questions of knowledge of CSWs about MCT services and MCT referral process were analyzed. Each question was assigned a percentage of correct answers and subsequently a mean score was given to compare pre-intervention to post-intervention values. The percentage mean score for pre-intervention was then compared to the two set benchmarks for the two QI project outcomes. Other data included the total number of referrals received pre-intervention and post-intervention. These descriptive statistics included range values, mean values, mean percentages, mean difference percentage, and a t-test comparing pre-intervention and post-intervention values. This demographic data analysis was presented in two pie graphs (Figure 1 and Figure 3), a bar graph (Figure 2), and a table (Table 1).

A summary table was used to present change in the knowledge about MCT services among CSWs (Table 2). Other data collected was the total number of participants for the QI project.

The outcomes of the data analysis were intended to demonstrate the effectiveness of the QI project. The expected results were planned to indicate an increase in the knowledge of CSWs about MCT services which reflected an increase in the utilization of MCT services in the community. The percentage changes between pre-intervention values compared to post-intervention values were planned to reflect an increase in the knowledge among CSWs. The second outcome of the data analysis was planned to show a positive change in the percentage of MCT referrals. The percentage change of pre-intervention values compared to post-intervention values was planned to indicate an increase in MCT referrals post intervention.

Plan for data management. Data management is another critical process that must be developed before any QI project begins. The selection of appropriate metrics to analyze and evaluate the data collected is another important step in the process (Harris et al., 2020, p. 203). For this QI project, the PM planned to collect all project information, coded, and input all data into an Excel spreadsheet for subsequent analysis. At the culmination of this QI project, all electronic encrypted files were planned to be destroyed according to current site mandatory protocols. In addition, any hard copy documentation related to the QI project was planned to be shredded and destroyed as per current site protocols.

Storage and safekeeping of collected data for any project is a crucial step in data management. The PM consulted with the selected site IT services regarding current protocols to be used as guidelines for the duration of QI project data management and storage. It was imperative to protect information related to participants and any details related to the project. It was the responsibility of the PM to ensure that this step was carefully planned (Harris et al.,

2020, p. 184). The collected data was planned to be saved in an encrypted file in the selected site's database with no participant identifiers discoverable with results. In order to protect the confidentiality of participants, any hard copies of documents related to the QI project was planned to be destroyed within 90 days after completion of the QI project.

Summary

Quality improvement projects direct change in nursing practice that support better patient-centered care. The success of QI projects depended on ensuring that safety, quality and value-based initiatives are included in the project pre-implementation planning and project management. A hallmark of QI projects is that they present an opportunity for improved patient outcomes and are the drivers of improved patient-centered care.

A QI project needs to have a systematic strategic plan that should be followed during pre-implementation through completion and evaluation of the nursing practice change. During the pre-implementation process for this QI project, the PM included a SWOT analysis, information on project approval process, use of information technology, institutional review board approval, plan for data management, and plan for project evaluation to complete this QI project. Other crucial elements of the pre-implementation phase included strong inter-professional communication and collaboration with experts on information technology and innovation to ensure that this QI project was successful in effecting change in nursing practice.

The data outcomes for this QI project included an increase in knowledge of CSWs about MCT services and an increase in the number of MCT referrals which reflected in the utilization of MCT services at the selected site.

Chapter Five: Implementation Process

The project implementation process is a critical step in quality improvement [QI] projects. This process is initiated by the creation of a solid project plan that has clearly defined QI project goals, objectives, a specific timeline and expected outcomes. The implementation process follows a systematic approach in which all the steps taken during the implementation were carefully prepared and contribute to the success of a QI project (Harris et al., 2020, p. 161). The carefully planned implementation process for this QI project of Underutilization of Mobile Crisis Team Services from Lack of Referrals included three specific stages: pre-intervention stage, intervention stage and post-intervention stage.

The pre-intervention stage for this QI project began with the recruitment of participants. The participants were clinical social workers [CSWs] employed at the selected site. Also included in this first stage of implementation was the scheduling of participants for the educational in-service intervention. For the second stage or the intervention, participants completed an initial questionnaire. As part of the intervention, participants subsequently watched a visual presentation on mobile crisis team [MCT] services and the MCT referral process. Finally, during the post-intervention stage, participants received the MCT educational cue card and completed the final questionnaire (Hickey & Brosnan, 2017, p. 27). All three stages of this QI project implementation were completed by the project manager [PM].

The purpose of this chapter is to describe the implementation process for this QI project. The chapter includes a description of the site, description of the participants, explanation of the recruitment strategy, discussion about the project intervention and description about the project variation plan.

Setting

This QI project was implemented in a Level I Adult and Level II Pediatric Trauma Medical Center at a large New York metropolitan hospital. This hospital had 2410 beds offering high standard care in multiple sub-specialties and the hospital was ranked as one of the top hospitals in psychiatry in the state of New York (https://www.ahd.com, 2018, p.1). The hospital provided MCT services starting in 2015 and was housed in the hospital's Department of Psychiatry. This MCT was strongly linked to the community for providing immediate mental health services in a specific geographical area known as a community district [CD] 8 catchment area.

Participants

The participants for this QI project included male and female CSWs contracted for full-time and part-time employment as of April 2019 working day and evening shifts at the selected site. An email list of all Care Managers [CMs] at the selected site was provided to the PM by the Director of Social Work and invitations to participate in the QI project intervention were sent to all CSWs contained on the list. The participants for this QI project worked in all clinical areas of the hospital with various levels of clinical experience ranging from licensed clinical social worker [LCSW] to licensed master social worker [LMSW]. The final list of participants agreed to voluntarily participate in the educational in-service intervention.

Recruitment

Upon completing the institutional review board [IRB] process and obtaining IRB approval (Appendix B), the PM presented the QI project to the selected site Director of Social Work one month prior to QI project implementation. Under the direction of the Director of Social Work, the PM requested access to the contact list including email addresses for all CSWs

employed at the selected site. The PM contacted each clinical department Social Work Director and requested in the invitation that CSWs participate voluntarily in the intervention as part of the recruitment process.

An email was sent during the first week of May 2019 to each participant as an invitation to participate in the educational in-service intervention session. The email invitations communicated a brief description of the QI project (Appendix C) and included information on the length of time for the in-service intervention included instructions on how to notify the PM of their intention to participate. Emails were distributed to ninety-five participants among twenty departments at the selected site.

The recruitment of participants was finalized after six attempts to communicate via email with potential participants. Ten individuals were removed from the potential participant list due to the following reasons: three individuals were no longer employed at the selected site, two individuals were on maternity leave, four individuals were not qualified as CSWs, and one individual was unreachable due to an incorrect email address. Out of the eighty-five potential participants, 35 CSWs that qualified for the QI project agreed to participate in the QI educational in-service intervention. Those 35 participants who responded to the email were scheduled for the in-service educational sessions.

Implementation Process

The implementation process for this QI project entailed three stages: pre-intervention, intervention and post-intervention. The pre-intervention stage began the QI project implementation. During the first week of the project implementation, the PM obtained the list of participant emails from the Director of Social Work at the selected site, finalized the project invitation letter (Appendix C), and sent out the invitation letters to all Care Managers. The

invitation email requested voluntary participation in an in-service educational session about MCT services at the selected site. The PM finalized the visual presentation, printed the educational cue cards, and responded to participants that replied to an email invitation. The PM scheduled participants for the in-service educational intervention.

During the second week of the pre-intervention stage of the project implementation, the PM reviewed the schedule of in-service educational interventions, confirmed the location to conduct for participant in-service interventions, and prepared supporting materials to include educational cue cards, copies of pre-intervention and post-intervention questionnaires (Appendix D), for the QI project implementation. The PM attempted to contact additional participants that had not previously replied. The PM continued to schedule in-service educational intervention sessions. The PM also continued to schedule and confirmed participation in the educational in-service intervention.

The intervention stage for this QI project included thirty-minute educational in-service sessions using a PowerPoint presentation to groups of 1 to 4 participants. The educational in-service sessions consisted of each participant completing a pre-intervention questionnaire during their scheduled appointment. Upon completion of the PowerPoint presentation on MCT services and the MCT referral process, each participant received an educational cue card with key points and specific information about MCT services at the selected site. To conclude the educational in-service session each participant completed a post-intervention questionnaire. The PM instructed all educational in-service sessions. The PM also disclosed that the QI project was not original research and that the data for the project was collected without identifiers to safeguard any participant personal information. The implementation phase remained on track for this QI

project after an extension to accommodate CSWs on vacation. The intervention stage of this QI project was completed over a total of ten weeks.

The post-intervention stage of this QI project included data coding (Appendix E), data enter, data evaluation, and data analysis which was completed weeks 11 through 13. The questionnaire data from pre-intervention and post-intervention was coded and entered into an Excel spreadsheet. The demographic data was analyzed using Excel 2016 ToolPak and results were presented in ranges, percentages and means of each item. The demographic data described each participant's gender, age, area in which they primarily worked, and years of clinical experience. Other questionnaire items assessed CSWs knowledge on MCT services. The data from pre-intervention and post- intervention scores as well as the percentages for correct answers pre-intervention to post-intervention was also coded and entered into an Excel spreadsheet and analyzed using Excel 2016 ToolPak. The percentages were used to demonstrate the QI project efficacy and attainment of the established benchmark of 10% increase of CSWs knowledge increase about MCT referral process pre-intervention compared to post-intervention. A second benchmark of 10% increase in MCT referrals post intervention, compared to pre-intervention was also set.

Plan Variation

The PM was challenged to get the rate of participation expected. The PM met with the preceptor to discuss why participation was lacking. Following that discussion, a decision was made to change the dates and times of educational in-services to be extended to include every day including Saturday. This expanded schedule was included in the last two email invitations to participants. The implementation timeline was also extended to the first two weeks in July to

accommodate participants that were on vacation when initial email invitations were sent to potential participants.

Summary

A quality improvement project was designed to address the Underutilization of Mobile Crisis Team services from lack of referrals. This QI project implemented an educational in-service about MCT services and the MCT referral process. The selected site for the project implementation was a large urban hospital in metropolitan New York City. The QI project implementation was completed in three stages: pre-intervention stage, intervention stage, and post-intervention stage. A plan to extend the dates and times of educational in-service sessions to engage more participants was necessary to increase participation and thus extended the implementation process to thirteen weeks.

Chapter Six: Evaluation and Outcomes of the Practice Change

Project evaluation is defined as "the systematic collection of information about the activities, characteristics, and outcomes of the project," (Harris et al., 2020, p. 225). It is recommended that the project goals be "specific, measurable, achievable, relevant and time-bound" (Mazurek Melnyk & Fineout-Overholt, 2019, p. 431). For this quality improvement [QI] project, the identified goal was to improve the utilization of mobile crisis team [MCT] services by increasing the knowledge base of clinical social workers [CSWs] on mobile crisis team [MCT] services and by increasing the number of MCT referrals at the selected site. These goals were measured by the percentage increase in the knowledge base of CSWs post-intervention compared to pre-intervention and by the percentage increase in the number of referrals MCT from May to July 2019.

The purpose of this chapter is to evaluate the overall QI project and the project outcomes of the practice change. The evaluation of the QI project goal to improve the utilization of MCT services was attained by measuring two outcomes and conducting a statistical analysis of the data collected during the project implementation. These data included details on the demographics of the project participants. Most importantly, data revealed findings that supported the two QI project outcomes. The first outcome was supported by the data and showed an increase in the knowledge base of CSWs about MCT services post-intervention compared to pre-intervention. The second outcome supported by the data demonstrated an increase in the total number of MCT referrals post-intervention compared to pre-intervention. Thus, the two paired outcomes clearly demonstrated an increase in the utilization of MCT services at the selected site.

The plan for evaluation of QI practice change project effectiveness included clearly identified data points, measuring instruments and outcomes (Harris et al, 2020, p.170). For this

QI practice change project, utilization was measured by using a statistical analysis comparing questionnaire pre-intervention responses to post-intervention responses on CSWs knowledge base about MCT services and the MCT referral process. Questionnaire responses about the QI project intervention were compared. For each comparison, all questions question of the questionnaire were assigned a percentage of correct answers and the mean score was subsequently given to compare the questionnaire values pre-intervention with post-intervention responses. The percentage mean score for pre-intervention was compared to the percentage mean score post-intervention and the difference was then compared to the two benchmarks for each of the two QI project outcomes.

The benchmarks are the values that represent a level of performance meeting standard requirements of care. Benchmarks are essential considerations for EBP practice quality improvement projects (Harris et al., 2020, p. 171). For this quality improvement project, the project manager [PM] selected two conservative benchmarks. The first benchmark was set at a 10% increase in CSWs knowledge base of MCT services post-intervention compared to pre-intervention. The second benchmark was set at a 10% increase in the number of MCT referrals post-intervention compared to pre-intervention using available comprehensive psychiatric evaluation program [CPEP] data about MCT services from the selected site. This data on the number of MCT referrals pre-intervention and post-intervention was obtained over a thirteen-week period of QI project implementation.

The calculations and statistics of data values was another important step in the data analysis of this QI practice change project. In this case, the outcomes of an increase in the knowledge of CSWs about MCT services reflected an increase in the utilization of MCT services and an increase in MCT referrals post-intervention. The data from QI project questionnaire was

coded and entered into an Excel spreadsheet and subsequently analyzed. The percentage changes between questionnaire pre-intervention values compared to post-intervention values reflected an increase in the utilization of MCT services at the selected site.

The PM implemented an in-service session at the selected site which served as the QI project intervention using a visual presentation and a nine-item questionnaire. A total of ninety-four in-service sessions were offered during a thirteen-week implementation period with thirty-five participants completing the intervention questionnaire pre-intervention and post-intervention. The intervention for this QI practice change project was based on a thirty-minute session with each CSW and included an educational in-service PowerPoint presentation with 9-item questionnaire pre-intervention and post-intervention. Each CSW was provided with an educational MCT cue card to conclude the intervention.

The timeframe for the completion of this quality improvement project was 3 months. Project participation consisted of male and female social workers having multiple levels of clinical experience and working in different hospital departments at the selected site. The two outcomes for this QI project were an increase in the knowledge base of CSWs on MCT services and an increase in the number of MCT referrals pre-intervention (n=6 MCT referrals April 2019) compared to post-intervention (n=17 MCT referrals July 2019). Both project outcomes demonstrated an improvement in utilization of MCT services and referrals for individuals experiencing a mental health crisis in the community.

Participant Demographics

The participants' demographic data analysis was performed using Excel 2016 Toolpak. These descriptive statistics included range values, mean values, mean percentages, and mean difference percentages. These demographic data was presented in three graphs (participant

Gender Figure 1, participant Age Figure 2 and years of clinical experience Figure 3) and a table (questionnaire demographic summary Table 1).

Table 1

Mobile Crisis Team Questionnaire Demographic Summary, n=35

Demographic	Total Number	Percentage
Gender		
Male	4	11%
Female	31	89%
Age		
22-29 Years	9	26%
30-37 Years	5	14%
38-45 Years	6	17%
46-53 Years	5	14%
54-61 Years	6	17%
62 or older	4	12%
Place where CSWs primarily work		
Inpatient Services	6	17%
Outpatient Services	18	52%
Both	11	31%
Years of clinical experience		
< 1 Year	1	3%
2-5 Years	11	31%
6-10 Years	5	14%
11-15 Years	5	14%
15 Years or more	13	38%

Note. Appendix F Coded Questionnaire Demographic Data

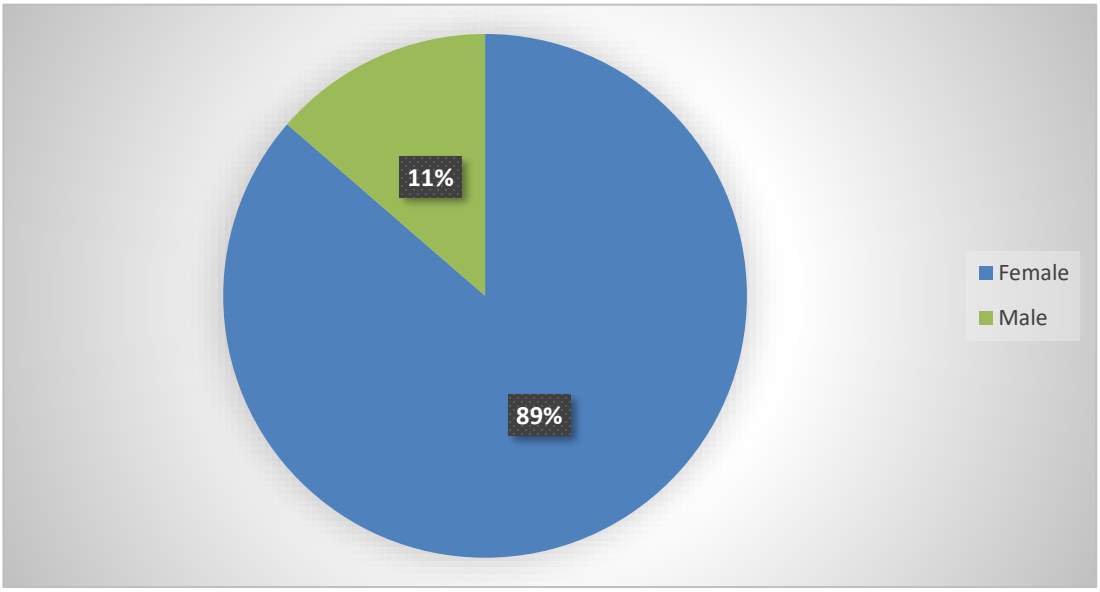

Figure 1. Percentage of the project participants by gender (n=35 Male=4, Female 31). This pie shows the proportion of project participants in percentages by gender.

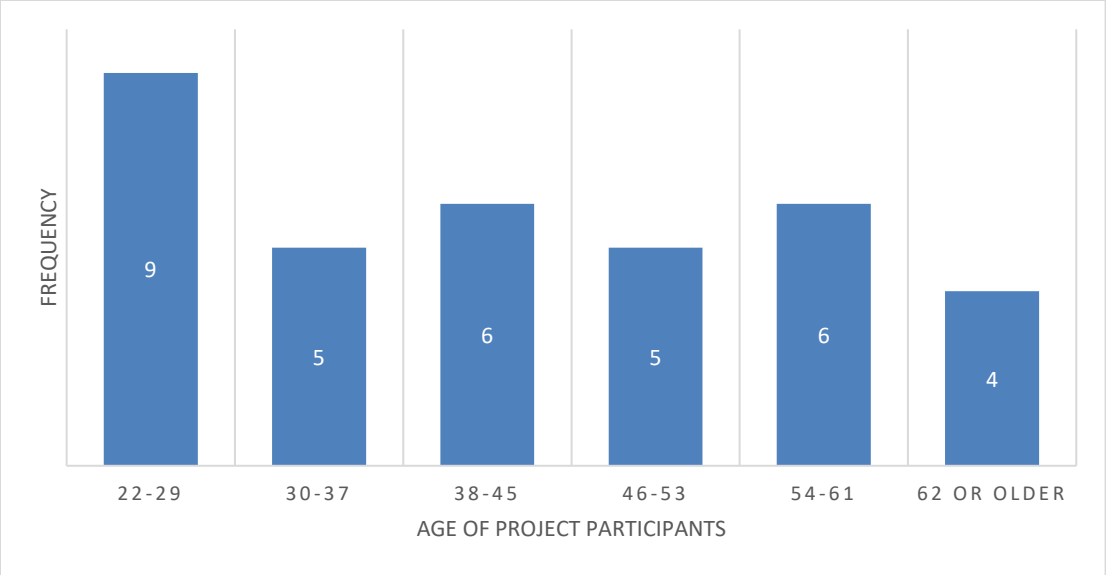

Figure 2. Age of project participants by age frequency (n=35; M=38-45 years, range= 22-62+ years). Age of project participants was collapsed into categories. The frequency denotes the number of participants in each age range category.

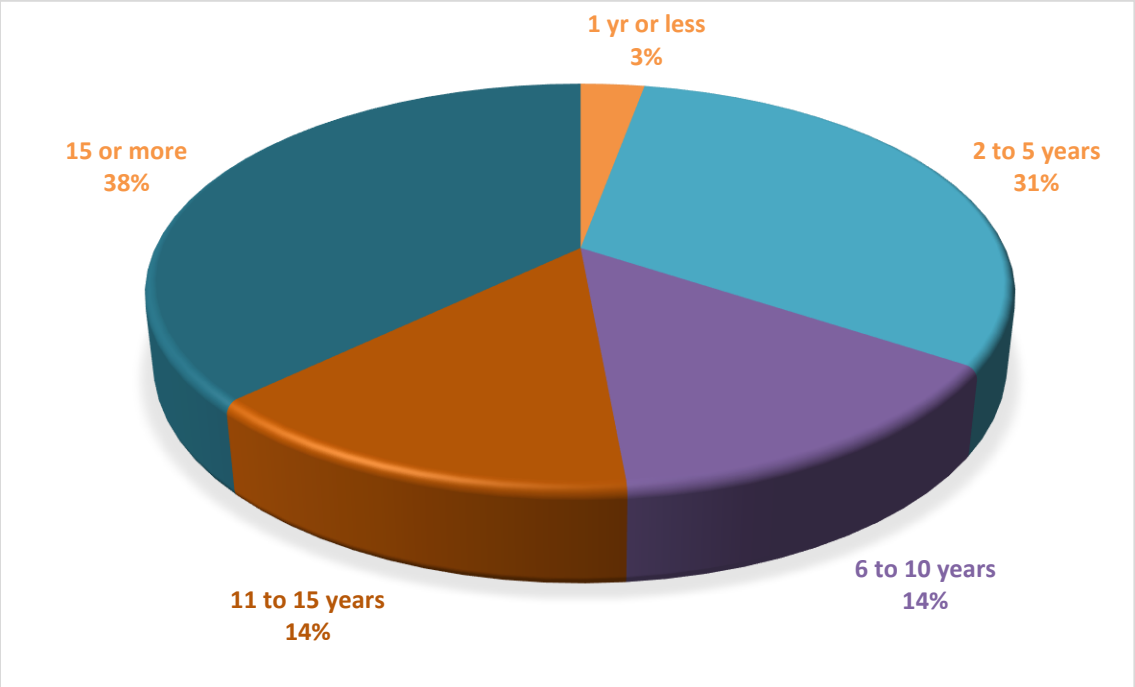

Figure 3. Percentage of project participants' years of clinical experience (n=35; < 1 year=1, 2-5 years=11, 6-10 years=5, 11-15 years=5, 15+ years=13). This pie shows the proportion of participants in percentages by years of clinical experience.

For this QI project a total of thirty-five CSWs completed the QI project intervention and pre-intervention and post-intervention questionnaires. The demographics indicated that 89% of participants were female, 57% ranged in ages 22 to 45 years old, 52% of the CSWs worked in the outpatient department, and 48% of participants had at a minimum of 10 years of clinical experience. The participants in this QI project were fully licensed CSWs with extensive clinical experience.

Outcome Findings

Measurable outcomes are the results of a project that can be quantified (Mazurek Melnyk & Fineout-Overholt, 2019, p. 285). Measurable outcomes can be used to evaluate and to support EBP practice change of QI projects. Outcomes are the "cornerstone of quality improvement" in for QI projects (Harris et al., 2020, p. 200). The goal of QI projects is to improve patient outcomes by implementing evidence-based practice changes. Outcome measures are also critical to consider as they reflect project effectiveness or success of the QI project.

For this QI practice change project, the PM selected conservative benchmarks for the two QI project outcomes of 10% increase in CSWs knowledge base about MCT services and 10% increase in the number of MCT referrals post-intervention compared to pre-intervention. The data analysis on CSWs knowledge base of MCT services had a mean score of 60% correct responses pre-intervention. The post-intervention mean score of CSWs knowledge base demonstrated 80% correct responses. This indicated a 33% increase in CSWs knowledge base post-intervention and thus this QI project met the set benchmark of 10% for the first outcome.

For this QI project the second measurable outcome was the change in MCT referrals as a result of the intervention pre-intervention compared to post-intervention. The data analysis on MCT referrals had a difference between 6 and 17 referrals from May to July. This indicated an

increase of 183% in MCT referrals post-intervention compared to pre-intervention and thus this QI project met the set benchmark of 10% for the second outcome. In the case of this QI project, the outcomes reflected greater utilization of MCT services by an increase in the knowledge of CSWs about MCT services at the selected site and an increase in the number of MCT referrals post-intervention compared to pre-intervention.

Outcome one. The first expected outcome of this QI project was an increase in the knowledge base of CSWs about MCT services after the project intervention. In order to increase the knowledge base of CSWs and evaluate CSWs knowledge increase about MCT services, a questionnaire was developed by the PM and given to participants pre-intervention and post-intervention. Specifically, questionnaire items 6, 7 and 8 asked questions about CSWs knowledge of MCT services and other ancillary services. The questionnaire data for items 6, 7 and 8 was coded and entered into an Excel spreadsheet and subsequent statistical analysis yielded mean score percentages where the differences of pre-intervention to post-intervention values were compared. The resulted difference was compared to the set benchmark of 10% and demonstrated an increase in the knowledge base of CSWs on MCT services (Table 2).

The summary of the statistical analysis includes information for questionnaire items 6, 7, and 8. Question 6 related directly to the applicability of MCT services at the selected site with a (95% CI 0.48 -0.42), percentage change in mean of 22%. Question 7 related directly to the applicability of Consult and Liaison services with a (95% CI 0.71 - 0.53), a percentage change in means of 13%; and question 8 related directly to the applicability of 911 services with a (95% CI 0.69 - 0.81), a percentage change in means of 2%. Based on results indicating that a 22% change in mean scores from pre-intervention to post-intervention, the set benchmark of 10% for this outcome was met and surpassed by 12%.

Table 2

Summary of the Statistical Analysis Using Excel 2016 ToolPak, n=35

Statistic	*Q6 Pre-Intervention*	*Q6 Post-Intervention*	*Q7 Pre-Intervention*	*Q7 Post-Intervention*	*Q8 Pre-Intervention*	*Q8 Post-Intervention*
Mean	6	8	5	5	8	8
Median	6	8	4	5	8	8
Mode	6	7	3	5	9	9
SD	1	1	2	2	2	2
Sample Variance	2	1	4	2	4	6
Kurtosis	0	1	-1	0	1	1
Skewness	0	0	0	1	-1	-1
Range	6	6	8	6	8	8
Minimum	3	4	1	3	2	2
Maximum	9	10	9	9	10	10
Sum	208	265	165	189	272	266
Count	35	35	35	35	35	35
Confidence Level (95.0%)	**0.48**	**0.42**	**0.71**	**0.53**	**0.69**	**0.81**

Note. Appendix D MCT Questionnaire. Q6 – Applicable to MCT Services; Q7 - Applicable to Consult and Liaison Services; Q8 – Applicable to 911.

Outcome two. The second outcome of the QI project was data on the greater utilization of MCT services by an increased number of referrals post-intervention compared to pre-intervention. The data from MCT referrals received pre-intervention and post-intervention was obtained by the PM from the CPEP data at the selected site. The data on the total number of MCT referrals received April 2019 was compared to the data of the total number of MCT referrals received July 2019 and a percentage was calculated using Excel statistical analysis ToolPak 2016.

The data revealed that a total of 6 MCT referrals during the month of April pre-intervention was compared to a total of 17 MCT referrals during the month of July post-intervention. A percentage increase in number of referrals of 183% post-intervention demonstrated that this QI project outcome met and surpassed the set benchmark of 10% for

increased number of MCT referrals. The efficacy of this QI practice change project was that the QI project intervention implemented by the PM at the selected site improved utilization of MCT services by increasing CSWs knowledge of MCT services and by increasing the number of MCT referrals.

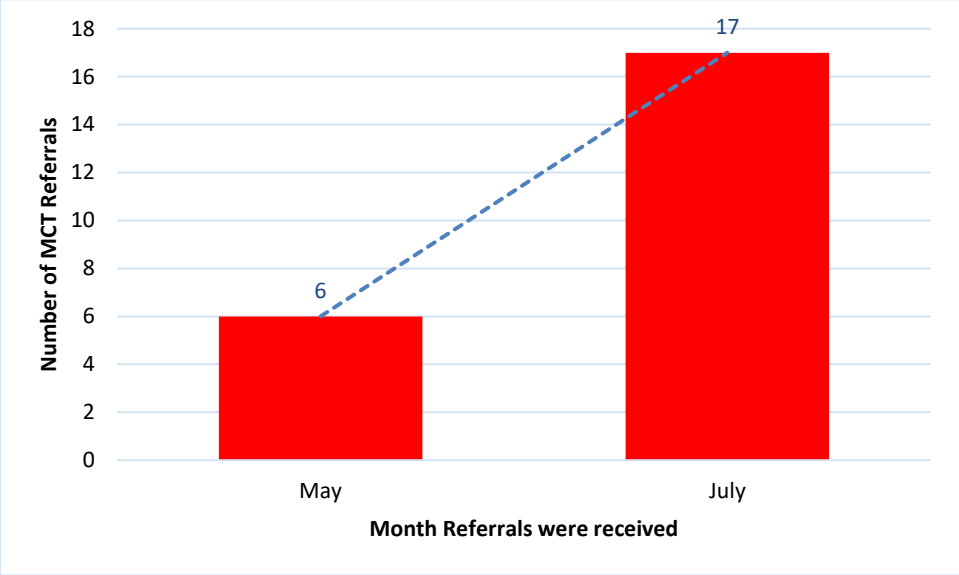

Figure 4. Total number of MCT referrals pre-intervention compared to total number of MCT referrals post-intervention (April=6, July=17).

Summary

This QI practice change project addressed the underutilization of MCT services through an intervention aimed at increasing knowledge and increasing referral rates. An in-service was provided to CSWs at the selected site who worked directly with the patients experiencing a mental health crisis in the community. The data was collected using a nine-item questionnaire which was coded and entered into an Excel spreadsheet for statistical analysis. The data on participants' demographics was presented in a statistics summary table 1. Thirty-five participants completed the in-service intervention and questionnaire.

The data from questions 6, 7, and 8 of the MCT questionnaire was on CSWs knowledge base of MCT services, Consult and Liaison services and 911 services, was also analyzed and

presented in table 2. The statistical results from question 6 specifically addressed knowledge of MCT services and yielded a 33% increase in their knowledge about MCT services post-intervention compared to pre-intervention. The set benchmark for outcome one of 10% for this QI project was met and surpassed by 23%. The data on the total number of MCT referrals received pre-intervention (April 2019 = 6) was compared to the total number of MCT referrals received post-intervention in (July 2019 = 17) and yielded a percent increase for a result of 183%. The set benchmark for outcome two of 10% was met and surpassed by 173%. The QI project intervention was successful and both project outcomes benchmarks were met and exceeded.

Chapter Seven: Discussion

Mental illness is a pervasive condition that affects millions of Americans. Untreated mental illness is the cause of poor health outcomes, early death, co-morbid chronic conditions, unsafe behaviors and increased community costs (https://www.nami.org, 2019, figure 2). Mobile crisis teams [MCTs] provide immediate access to mental healthcare in the community for individuals that are experiencing a mental health crisis (https://www.nami.org, 2019, p.1). Mobile crisis teams have become the primary avenue for providing mental healthcare in the community and have evolved beyond the standard of care (https://store.samhsa.gov, 2014, p.10). A successful MCT service incorporates referrals to mental health care providers for individuals and their families in the community. The importance of increasing the knowledge of clinical social workers [CSWs] on MCT services and the MCT referral process is critical for immediate access to mental healthcare for mentally ill individuals experiencing a crisis in the community.

The purpose of this chapter is to discuss recommendations to sustain change as a result of this quality improvement [QI] project at the selected site. These recommendations incorporated plans for the dissemination, health promotion and future QI projects. Specifically, the recommendations discussed plans for dissemination of QI project outcomes at the local, state, national and other institutional levels. Another project recommendation was to link MCT services to health promotion and prompt intervention during a mental health crisis. The remaining recommendations of the results of this QI project were to incorporate the role of the Doctor of Nursing Practice [DNP]-prepared nurse leaders in evidence-based practice [EBP] to lead QI projects, recommendations about future MCT projects related to the identified problem and recommendations related to implications for future policy and advocacy. This chapter

discusses in detail these recommendations and how they contribute to practice change once the QI project was completed.

Recommendations for Site to Sustain Change

As a result of underutilization of mobile crisis team services from lack of referrals, this QI project aimed to increase the knowledge base of CSWs on MCT services which led to an increase in MCT referrals. Since 2015 MCT services at the selected site experienced slow growth in outreach to the community due to lack of MCT referrals. After the culmination of the QI project and improvement in lack of referrals the practice change was identified, and the QI project outcomes were presented to key stakeholders. There is evidence to support the effectiveness of MCTs in decreasing emergency room visits, and improvement in access to immediate mental healthcare services in the community. The mobile crisis teams provide patient-centered care that is in alignment with initiatives of the Institute of Medicine and the Institute for Healthcare improvement (Kilbourne et al., 2018, p. 32). The necessity to comply with healthcare initiatives such as "Triple Aim for Populations" to improve the health of the mentally ill by enhancing the experience and outcomes and reducing the overall cost of mental healthcare for the benefit of the patient and the communities is imperative (http://www.ihi.org, 2019, para 1).

In order to address CSWs knowledge about MCT services and referral process there was a critical need to improve CSWs knowledge and sustain the knowledge by continued education of CSWs about MCT services. After completing the QI project and statistical analysis of the collected data, the project manager [PM] prepared and presented a final report to the key stakeholders and included two recommendations to sustain the nursing practice change. These

two recommendations help strengthen CSWs knowledge about MCTs and their role as providers of mental health services in the community.

The first recommendation to sustain a change in current practice on MCT protocols was to include mandatory educational training on MCT services for all clinical social workers employed at the selected site. MCT training should include a minimum of one training session upon initial hiring and should be implemented every year as CSW continuing education. This mandatory training ensures improve utilization of MCT services at the selected site and sustains a practice change.

The second recommendation to sustain a change incorporated the creation of a MCT Champion Program where each department has detailed knowledge of MCT services at the selected site. The PM designed and prepared MCT educational materials and MCT referral protocols for the Champion in each department. The MCT Champion was responsible for delegating the educational in-services to each department. The purpose of the MCT Champion program was to increase the knowledge base about MCT services inter-professionally. This recommendation was another way to ensure sustainability of the practice change at the selected site.

Plans for Dissemination of Project

The purpose of disseminating QI project outcomes is to educate colleagues and others on the results of QI projects to create awareness of MCT services and to "effect positive change in clinical practice" (Mazurek Melnyk & Fineout-Overholt, 2019, p. 24). The dissemination of project outcomes is critical to nursing practice change and to improve clinical practices that enhance patient outcomes. It was pivotal for the PM to disseminate QI project outcomes in order to obtain acceptance to sustain the practice change. The analysis and dissemination of the QI

project outcomes as a result of the project intervention was presented to the selected site's stakeholders which promoted an MCT practice change (Mazurek Melnyk & Fineout-Overholt, 2019, p. 295).

In addition, the PM prepared a final report and presented the QI project outcomes to administrators at the selected site. Administrators included the Department of Psychiatry Director of Nursing, Department of Care Management Director, Psychiatry Inpatient Unit Chief, Comprehensive Psychiatric Evaluation Program [CPEP] Supervisor, Patient Safety Director, Director of Nursing Education and Department of Psychiatry Chief of Service. These stakeholders were responsible for promotion of future MCT quality improvement projects and helped sustain the practice change.

Additional opportunities to disseminate the QI project outcomes were presentations that took place in clinical rounds of several departments at the selected site. Another additional opportunity for dissemination was at the selected site organizational meeting and professional committee meetings such as the advanced practice committee and Department of Psychiatry Quality Improvement Council Meeting. The plan for dissemination of the QI project results also included submission for publication to a peer-reviewed professional journal and a presentation at a National Psychiatric Conference.

Project Links to Health Promotion/Population Health

This is an EBP change project to increase the utilization of MCT services that would improve immediate access to mental health care in the community. Mobile crisis teams are the only opportunity to obtain immediate access to mental healthcare in the community. Mobile crisis teams are the only entity that provides immediate access to mental health care in the community in the current United States healthcare system. The QI project had direct linkages to

initiatives of health promotion and population health from the National Academies of Sciences Engineering and Medicine (2019) and the Agency for Healthcare Research and Quality [AHRQ] 2019 (https://www.ahrq.gov, 2019). Both of these initiatives included patient safety, effective and patient-centered care, timely and efficient care, as well as equitable care to all mentally ill individuals in mental health crisis (https://www.nationalacademies.org, 2003, para 2).

Mobile crisis team referral services focused on mental health assessment and intervention, patient safety, quality of mental health services and services in the patients' residence. MCT clinicians including CSWs assisted mentally ill individuals in crisis providing linkages to mental health services and helped those individuals with securing appropriate mental health care. MCT clinicians worked in conjunction with other healthcare professionals to decrease fragmentation of care. MCT clinicians secured appropriate communication between providers and ensure that the patient can have an appropriate transition to their regular healthcare providers after the 21-day limit for MCT services. The QI project outcomes were directly linked to mental healthcare promotion and patient centered care initiatives.

Role of DNP-Prepared Nurse Leader in EBP

DNP prepared nurse leadership was used to develop the QI project of underutilization of mobile crisis team services from lack of referrals at the selected site to influence change in the MCT referral process. Clinical social workers are professionals that are in direct contact with mentally ill individuals and have access to vital information on their medical and mental health histories. CSWs currently complete psycho-social histories of all the patients that are under their care.

The role of the DNP prepared nurse leader is to educate and be involved in healthcare policy and advocacy. The DNP prepared nurse leader also serves as an expert clinician,

consultant and leader working in collaboration with other healthcare professionals to promote health and improve patient outcomes (Chism, 2019). DNP prepared nurses have learned through their education, professional training and clinical experience the core competencies of leadership, health policy, finance and the importance of integrating evidence-based practice to clinical practice. Doctors of Nursing Practice are prepared to generate new nursing knowledge by translating evidence and quality improvement initiatives and applying the evidence-base outcomes into clinical areas to optimize patient outcomes (Edwards, Coddington, Erler, & Kirkpatrick, 2018, p. 2). DNP graduates assist in implementing community-based networks to increase access to mental healthcare in the community by using quality improvement initiatives. DNP graduates effect positive impact on the population health of mentally ill individuals in crisis.

Another important aspect of the DNP prepared nurse leader in EBP is that DNP prepared nurse graduates use acquired knowledge and skills to coordinate and supervise quality improvement teams. DNP prepared nurse graduates direct patient care using evidence-based practice protocols, analyze and implement cost-effective delivery of care as well as influence current healthcare policies at the local and national level. The DNP prepared nurse leader serves in many roles as educator, mentor and patient care provider with active involvement in improvement of healthcare systems (Edwards, Coddington, Erler, and Kirkpatrick, 2018, p. 3).

The project manager [PM] implemented an intervention that included an in-service that educated CSWs on MCT services mirroring the role of the DNP prepared nurse leader in EBP. The PM communicated with key healthcare administrators at the selected site to advocate for support of the QI project to improve current clinical practices. The PM as a MCT lead clinician served as lead consultant on Mobile Crisis Team Services and interventions to improve access to

immediate mental health care services in the community. The PM worked in collaboration with interdisciplinary healthcare professionals to assist the mentally ill individuals in crisis by preparing comprehensive treatment care plans.

Future Projects Related to Problem

Future projects related to this QI project must address the importance of immediate and improved access to quality mental healthcare in the community. The Patient Protection and Affordable Care Act [PPACA] initiated a dramatic overhaul of healthcare systems. For the mentally ill, a specific provision in the law indicated that there was evidence supporting improved access to mental healthcare for the mentally ill (Goudreau & Smolenski, 2018, p. 202). Other PPACA provisions aimed at addressing patient's preference for treatment in a less stigmatizing setting such as their homes. Mobile crisis teams serve mentally ill individuals in the community, in their place of residence and improve access to immediate mental healthcare in the community.

Upon completion of the QI project, four potential initiatives to address the problem of mental healthcare access in the community were discussed at the selected site. The four potential initiatives are: (a) a change in current MCT practices to expand mandatory training on MCT for all healthcare professionals, (b) creation of an educational module on MCT services to be used by the nursing education department, (c) development of workshops on MCT services to be offered at various events throughout the facility and (d) advocacy at institutional and the state level for mental healthcare.

The first future project entails expanding mandatory MCT training for all licensed healthcare professionals and nursing ancillary staff. This training would include protocols for MCT referrals to include all licensed practitioners at the selected site. This training should be

enforced in the mandatory annual training. The second initiative for future projects was for the PM design and create an educational module on MCT services. The MCT educational module was added to current mandatory annual training with the goal to increase the knowledge base of multi-disciplinary staff and other hospital personnel on Mobile Crisis Team Services. A projected timeline to initiate the mandatory annual MCT training is June 2020.

The third future project was an option to offer workshops on MCT services and referral protocols. The PM should participate in nursing events throughout the selected site to educate staff on an ongoing basis about MCT services. The goal would be to disseminate information about MCT services as immediate access to mental healthcare in the community. The fourth and final initiative for future projects related to this QI project was to advocate for change in mental health policy at the state level by contacting the New York Mayor's office and share the QI project outcomes on the effectiveness of Mobile Crisis Teams in New York City, specifically MCT from CD8. The goal was to provide specific information on the effectiveness of MCTs immediate access to mental health care in the community (Mazurek Melnyk & Fineout-Overholt, 2019, Chapter 20).

Implications for Policy and Advocacy at All Levels

Healthcare policy and advocacy are critical to the role of DNP-prepared nurse leaders. By becoming involved in healthcare policy and advocacy DNP prepared nurses secure that positive changes in current healthcare practices come to fruition and that delivery of healthcare is equitable for all patients under their care. For DNP prepared nurses, there is a direct and robust relationship between health policy and clinical practice initiatives. The American Association of Colleges of Nursing [AACN] in their *Essentials of Doctoral Education for Advanced Nursing Practice* (2006): "Essential V: Healthcare Policy for Advocacy in Healthcare"

(https://www.aacnnursing.org, 2006, p. 14; Chism, 2019, p. 15) state that DNP prepared nurse graduates must have the knowledge and skills related to healthcare policy to be able to effect any practice change. Issues such as health disparities, care of vulnerable populations, and equitable access to care are critical to mentally ill individuals and must be addressed by strong advocacy from DNP prepared nurses. Due to their clinical expertise and knowledge DNP prepared nurses are considered the most powerful advocates for patient care (Chism, 2019, p.16).

DNP prepared nurses are also involved in strong advocacy efforts that push forward patient-centered care initiatives designed to improve patient outcomes. DNP prepared nurses have an advantageous place in clinical practice and can use their expertise to develop policy (Goudreau & Smolenski, 2018, p. 211). DNP prepared nurses can develop healthcare policies at various levels for example at the local, state level and national level. DNP prepared nurses participate in activities leading to advocacy and education of other healthcare professionals regarding healthcare policy (Chism, 2019, p. 16). DNP prepared nurses must acquire the knowledge about health policy and legislation processes and be actively involved in professional organizations that support quality improvement nursing initiatives (Zaccagnini & White, 2017, p. 202). DNP prepared nurses should be involved not only in patient advocacy, but also in policy advocacy.

As a result of the QI project outcomes, healthcare policy at the selected site reflected a change at the institutional level of current MCT protocols. In addition, a policy change was created at the institutional level to include mandatory MCT training for all healthcare professionals employed at the selected site. These institutional-level policy changes impacted healthcare policy at the local area. The potential implication in healthcare advocacy at the local level was the impact of improved access to immediate mental healthcare services for mentally ill

individuals residing in the catchment area (Goudreau & Smolenski, 2018, p. 208). Mobile Crisis Teams respond to individuals in the community having a mental health crisis by conducting psychiatric assessments, engaging patients in mental health care, and providing access to mental health services in the community. Mobile crisis teams contribute to the enforcement of healthcare initiatives by improving access to immediate mental healthcare in the community. This is an important local implication of the QI project outcomes. The QI project demonstrates nurse-led quality improvement projects that promote mental health services to target specific vulnerable populations.

The third and final implication for mental health policy derived from this QI project relates to impacting a broader network of professionals in MCT services in the Metropolitan New York City area. As an invitee to the Mobile Crisis Regional meeting the PM will contribute as a MCT lead clinician and participate in quarterly held meetings with other MCT clinicians. The significance of participation in this regional meeting is that it allows clinical exchanges of knowledge about MCT initiatives and provides information on changed practices at other MCT sites. By attending and participating in the Mobile Crisis regional meeting the PM had the opportunity to meet the Director of the New York Department of Health and Mental Hygiene who oversees the Mobile Crisis Team NYC-Well services. Another advocacy outcome of this participation was a policy change concerning how New York City's NYC-Well system screens and distributes their referrals to the 24 mobile crisis teams.

Summary

This chapter discussed practice change recommendations related to the quality improvement project at the selected site. The EBP practice change was sustained and supported by the QI project results and recommendations for change in current MCT protocols. The

recommendations included initiatives to sustain the clinical change in current practice of clinical social workers. The elements of this discussion included: the plan for dissemination of QI project outcomes, the links to health promotion and population health, the important role of the DNP prepared nurse leader, future projects related to mobile crisis team services, and implications for mental health policy change and advocacy.

The PM applied knowledge on integrating nursing science, nursing theory and an EBP framework model to implement a change in nursing clinical protocols on MCT services at the selected site. The PM followed AACN tenets during the QI project plan, pre-implementation, implementation and evaluation stages. The implications for policy change and advocacy were comprehensive where the PM had the opportunity to cross-collaborate and share QI project outcomes. The PM presented at a National Psychiatric Conference on the QI project. As a result of the QI project outcomes, the PM nurse leader gained the opportunity to impact current NYC-Well campaign and outreach that provides MCT services in the community.

Chapter Eight: Final Conclusions

According to 2013, United States data on estimated health costs, the healthcare costs of mental illness was at the top of the list with an estimate of 201 billion dollars (Roehrig, 2016, table 1). It is projected that the costs of mental illness will increase to 16.3 trillion dollars by 2030 (Trautman, Rehm, & Wittchen, 2016, p. 1246). Mobile crisis programs can decrease hospitalization rates for persons experiencing a mental health crisis and can provide cost-effective psychiatric emergency services (Scott, 2000).

Mobile Crisis Teams [MCTs] were created to assist mentally ill individuals during episodes of mental health crises by providing immediate response and access to mental healthcare services in the community. MCTs work in conjunction with other healthcare providers to ensure continuity of patient care, assist with re-linking patients to mental health services and thus avert a more severe mental health crisis. MCTs perform this important role by completing psychiatric assessments and counseling for patients outside the standard care of the hospital or emergency room. MCTs, specifically clinical social workers [CSWs] are on the front line as clinicians to engage mentally ill individuals in crisis at their residence or in their home.

The purpose of this quality improvement [QI] project was to improve mental health patients' access to immediate mental health services through greater utilization of MCT services and referral process for residents in the community. The purpose of this chapter is to discuss the final conclusions of this QI project on underutilization of mobile crisis team services from lack of referrals. The chapter will cover a brief description of the clinical problem, discuss the evidence that support this QI project, describe the theory behind the QI project, discuss the selected model for evidence-based practice, a description of the QI project management, discuss the project implementation steps, the review of the QI project outcome findings, and provide a

summary and final conclusions of QI project. This chapter also discusses the implications for health promotion, population health and healthcare policy and advocacy that were derived from this QI practice change project.

Clinical Problem

The clinical problem of this QI project is the underutilization of MCT services from lack of referrals. This clinical problem in the MCT referral process limits patients' immediate access to mental health services in the community. Mental health services in the community is currently managed by a referral process where CSWs determine inpatient and outpatient psychiatric care of a person experiencing a mental health crisis. The current problem of underutilization of MCT services was from a lack of CSWs referrals which hinders patients' access to immediate mental health services in the community.

MCTs are available to intervene immediately in the community and to assist individuals in mental health crisis, however, the utilization of MCT services are directly related to a MCT referral process by CSWs which needs to be active and fluid. A lack of MCT referrals intrinsically affects the patient's access to immediate mental healthcare services in the community and this compounds the identified problem. In order to address this problem, it was critical for CSWs who are in active contact with patients and families in the community to initiate MCT referrals that promote mentally ill individuals receiving mental health help during acute episodes of crisis. Many CSWs employed at the selected site are the primary care providers and/or care managers and have access to vital patient information regarding medical and social histories and are the instrumental in appropriately initiating MCT referrals in the catchment area.

Evidence Base

A comprehensive literature search on mental health interventions, specifically the use of mobile crisis programs, yielded research findings that supported the use of MCTs. The evidence to support this project had a common thread and revealed that MCTs are evaluated based on the type of intervention, sample size and clinical outcomes. The findings from a systematic literature review (Murphy et al., 2015, p.5) and selected research studies supported this QI project. These findings demonstrated improved clinical outcomes for patients in the community receiving clinical treatment through MCT services. The evidence also supported the importance of MCTs to decrease rehospitalization of severe mentally ill individuals during a crisis and reduced costs for immediate mental health services for patients in the community (Murphy et al., 2015, p.21) compared to emergency cost (Scott, 2000). The evidence also revealed advantages for the utilization of MCT services as an optimal mental healthcare intervention in the community. Another advantage is the utilizing of MCTs to increase patient satisfaction and patient's willingness to engage in mental health treatment that is provided in the community.

Theory and Model for Evidence-Based Practice

The middle range nursing theory selected to guide the QI project was the Interaction Model of Client Health Behavior (ICMHB) (Cox, 1982). The EBP framework selected to guide the development of the QI project was the PEACE framework (Tahan, el al., 2016). The ICMHB middle range theory was specifically created for advanced practice nurses to incorporate into clinical practice. The PEACE framework also guided the development of the QI project and was an optimal fit for nurse-led quality improvement projects.

The middle range theory of Interaction Model of Client Health Behavior emphasizes the importance of treating patients as unique individuals. In this model all interactions between the

patient with the healthcare provider are initiated by the patient and should support patient-centered care initiatives. Any patient care plan is personalized with specific interventions for the patient (Cox, 1982, Figure 1). An important tenet of this middle range nursing theory is that the patient has the capability to make informed decisions about his/her healthcare and this behavior is the reflection of how the patient uses personal qualities to make those decisions (Cox, 1982, p.47). This middle range theory provided a clinical guideline of the importance of MCT clinicians' interactions with patients in the community. Also, this middle range theory highlighted the importance of patient centered care for MCT services.

The EBP concept model selected for this QI project was a five-step PEACE framework (Tahan, et al., 2016). Each letter in the PEACE framework describes a systematic EBP process and provides a five-step acronym for recall during nursing practice. The PEACE framework represents a mnemonic that describes evidence-based practice [EBP] process. The five-steps of the PEACE framework are: (P) problem identification, (E) evidence review, (A) appraisal of the evidence, (C) change in practice, and (E) evaluation of the practice change or to evaluate the research findings (Zakhari & Sterrett, 2016, figure 1).

The purpose of the PEACE framework is to provide guidelines for improved patient centered care in QI projects. This PEACE-framework bridges actual clinical protocols with evidence-based nursing practice. It allows for the integration of collaborative efforts between interdisciplinary teams and it fits with the current MCT structure which is also interdisciplinary. This framework impacts change in nursing MCT practices that is evidence-based (Tahan et al., 2016). This EBP concept model was selected because it was the optimal fit to MCT services at the selected site in order to improve patients' access to immediate mental healthcare services in the community. The PEACE framework guided the process of identification of the barriers to

utilization of MCT services from lack of referrals and helped bridge the gap between community-based mental health services and individuals in mental health crisis residing in the community.

Project Management

The clear identification of the clinical problem of underutilization of MCT services from lack of referrals drove the application of knowledge, skills, tools, and techniques to design a quality improvement project (Harris, Roussel, Dearman, & Thomas, 2020, p.4). Quality improvement project management was executed following a systematic approach to include planning, monitoring and reviewing all elements of the QI implementation (Harris et al., 2020, p. 5). The PM designed the QI project using interdisciplinary collaboration and stakeholder's input to promote successful project patient outcomes. Critical steps of project management for this QI project required an assessment of the selected site readiness for change as well as a risk management assessment. QI project management at the selected site also required organizational approval to include Collaborative Institutional Training Initiative [CITI] and internal review board [IRB] approval. This approval process and the plan for QI project evaluation is included in the project management. The final step in project management was the plan for QI project data management.

The QI project of underutilization of MCT services from lack of referrals was implemented at a large urban hospital in metropolitan New York City. The selected site for this QI project was a Level I Adult and Level II Pediatric Trauma Medical Center located in Metropolitan New York City. Project management required a review of the selected site readiness for change. The selected site demonstrated the need for change in nursing practice to improve the knowledge base about MCT services and corresponding referral process. The need

was supported by the opening of the new Comprehensive Psychiatric Evaluation Program [CPEP] and applying for the American Nurses Credentialing Center [ANCC] Magnet designation.

A risk management assessment was also included in the project management. The risk management assessment for the selected site provided information on the strengths, weaknesses, opportunities and threats that must be considered before implementation of a QI practice change project. The strengths included a strong internal support from stakeholders, strong inter-professional collaboration and strong EBP nurse committee that supported and guided nurse-led QI projects. The identified weakness was MCTs limited hours of operation and no on-call service coverage outside of regular day office hours. The identified opportunities included, increase access to MCT services in an urban area by providing immediate access to mental healthcare services on close geographical proximity and finally, the identified threats included, a resistance to change in nursing practice by CSWs.

Another critical element of this QI project management was the process of successfully completing IRB approval from the selected site's institutional review board. This process of gaining IRB approval included mandatory CITI training and IRB application for QI project. Both of these were completed by the PM to proceed in the QI project management. Another critical element of the project management was the development of the MCT intervention tool. The MCT intervention tool was the principal method that contributed to change CSWs knowledge on MCT services and referral process. The plan for project evaluation included questions in the intervention tool on demographic data and project outcomes. The final step for project management included developing steps for data collection and measurement. The data

collection and measurement plans included systematic steps and ensured participants confidentiality.

Project Implementation

The quality improvement (QI) implementation an in-service educational session. This educational in-service session was the QI project intervention and entailed a 30-minute PowerPoint visual presentation that was developed by the PM. As part of the QI project intervention the PM also developed a nine-item questionnaire that was given to each participant before the in-service presentation and after the in-service presentation. The before and after intervals are referred to in this QI project as pre-intervention and post-intervention.

Specifically, the implementation of this QI project commenced with participants completing the pre-intervention questionnaire. Subsequently participants watched the visual presentation on MCT services and a detailed description of the MCT referral process. After the visual presentation and pre-intervention questionnaire, participants were asked to complete a post-intervention questionnaire. The PM disclosed that the QI project was not original research and that the data for the project was collected without identifiers to safeguard participants' personal information. The completed pre-intervention and post-intervention questionnaires were collected by the PM and safeguarded for data coding and analysis.

The QI project participants were recruited via email invitations using an email list of all CSWs employed at the selected site as of April 2019. The project participants included male and female clinical social workers employed at the selected site with various levels of clinical experience who worked both in the inpatient and outpatient departments. The email list of project participants was obtained by the PM from the Director of Social Work at the selected

site. The email invitation requested participation and included information on the length of time for the in-service and included how to notify the PM of their intention to voluntarily participate.

Project implementation included a post-intervention stage which encompassed QI project data entry, data coding, data evaluation and data analysis. All data collected was coded and entered into an Excel Spreadsheet and was analyzed using Excel 2016 ToolPak. The data for questions assessing CSWs knowledge of MCT services was tabulated and analyzed. The QI project results were presented in percentages for correct answers. The percentages were used to demonstrate the QI project efficacy. Two conservative benchmarks were selected by the PM and were a 10% increase in the knowledge base of CSWs on MCT services and a 10% increase in MCT referral rates post-intervention compared to pre-intervention.

A project plan variation was made as the PM met challenges to gain improved CSWs participation in the educational in-service intervention. A decision was made to expand the dates and times of educational intervention to include every day of the week including weekends. The expanded schedule for MCT in-services was included in the last two email invitations to participants. The project implementation timeline was also extended to the first two weeks in July. All stages of the project implementation were completed by the project manager.

Outcome Findings

For this QI project a total of 35 CSWs completed the intervention educational in-service session, and the corresponding pre-intervention and post-intervention questionnaires. Female participants comprised of 89% of total participants and males made 11% of project participants. Over half 57% of participants ranged in ages from 22 – 45 years of age, were primarily CSWs who worked in the outpatient department (52%), inpatient department (17%) and both inpatient and outpatient departments (31%). Nearly half of the participants or CSWs (49%) had a

minimum of 10 years of clinical experience. These results showed that the participants in this QI project were experienced CSWs with 14% of total participants having more than 11 years of clinical experience and a 38% with 15 or more years of clinical experience.

For this QI project there were two primary outcomes. The first outcome was an increase in the knowledge base of CSWs about MCT services and the MCT referral process. The first outcome was measured by comparing post-intervention to pre-intervention values. Questionnaire items 6, 7, and 8 specifically asked questions related to each CSWs knowledge on MCT services, awareness of consult and liaison services and familiarity with 911 protocols. The data on questions 6, 7 and 8 was coded and entered into an Excel spreadsheet and subsequently analyzed using Excel 2016 ToolPak. The statistical analysis yielded mean score percentages and the differences were compared from pre-intervention to post-intervention values. The resulted difference was compared to the set benchmark of 10% for outcome one. After performing a statistical analysis on question 6, the result (33%) demonstrated an outcome that is equal to and above the set benchmark of 10%. This finding confirms that the QI project intervention increased the knowledge base of CSWs at the selected site on MCT services.

The second outcome of this QI project was directly related to greater utilization of MCT services demonstrated by an increased number of MCT referrals by CSWs post-intervention compared to pre-intervention. MCT referral data was obtained by the PM from the selected site before and after the QI project intervention. The pre-intervention data on the total number of MCT referrals received by April 30, 2019 was compared to the total number of MCT referrals received by July 30, 2019. The total MCT referrals April 30, 2019 (6) was compared to the total number of MCT referrals received through July 30, 2019 (17). A percentage was calculated and the result was compared with the set benchmark of 10% for the second outcome. An increase of

183% in the total number of MCT referrals occurred as a result of the QI project intervention. This second finding confirms that the QI project intervention significantly increased the referral process of MCT services at the selected site.

Discussion Summary

The quality improvement project on underutilization of mobile crisis team services aimed at increasing the knowledge base of clinical social workers and enhancing the referral process at the selected site leading to increased utilization of MCT services for individuals in the community. The two outcomes of this QI project clearly demonstrated that an EBP practice change nurse-led QI project improves greater utilization of MCT services at the selected site. The first goal of the QI project increased CSWs knowledge about MCT services and the second goal increased the total number of MCT referrals at the selected site. Both outcomes met the 10% benchmark and the success of this QI project led to nursing practice change. This practice change was achieved by the impact the QI project had on the promotion of mental health and the major implications the project had to mental health policy and advocacy.

Regarding the promotion of mental health, the QI project increased CSWs competency on the knowledge base about MCT services and the MCT referral process. A major implication of this QI project was the impact on health policy change for mental health services through NYC-Well. The nurse-led QI project supported policy change at the institutional level as well. The policy change instituted mandatory MCT training for all CSWs upon hire at the selected site. Another policy change as a result of this QI project was the commencement of the MCT Champion program. The MCT Champion program promotes mentoring in all educational departments through MCT educational sessions.

Another important implication for this QI project was the inter-professional clinical practice. The PM submitted papers to a peer-reviewed professional journal and presented at a National Psychiatric Conference. The dissemination of the QI project findings served to share the information on the QI project finding with colleagues, gathered support for other QI projects in mental health, and specifically improved the support for the use of MCT services in other geographical areas. The dissemination of the QI project results supported the critical aspect of patient centered mental health care, potentially increased access to mental healthcare in the community, and demonstrated that MCTs are a positive alternative to standard mental health services in the community. These policy implications served to sustain the practice change at the selected site and beyond.

Final Conclusions

The QI project outcomes met the set benchmark and reflected the importance of QI projects to improve mental health services in the community. Improved access to mental healthcare services in the community and improved patient-centered care revealed the important role of MCT services to provide mental healthcare in the community. The EBP systematic process used to guide this QI project guided the EBP practice change in MCT protocols at the selected site.

MCTs were created to address the gap between community based mental health services and individuals experiencing mental health crises in the community. Greater utilization of MCT services maximizes patient centered care by providing immediate response to patients experiencing a mental health crisis. This QI project increased CSWs knowledge on MCT services and the MCT referral process. The PM developed a nurse-led project plan to implement this QI project at a leading urban hospital in Metropolitan New York City. The QI project results

demonstrated remarkable improved outcomes and significantly greater utilization of MCT services.

Mental illness and the immediate treatment of the mentally ill is a public necessity in the community. Treating mental illness by greater utilization of MCT services directly impacts improved access to care and improved patient-centered outcomes in the community. By using EBP protocols this DNP prepared nurse gained the knowledge, skills and experience to improve clinical practice that ensured QI project sustainability.

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Appendix A

List of Acronyms

CD8 –	Community District 8
CI –	Confidence interval
C&L –	Consult and Liaison Services
CPEP –	Comprehensive psychiatric evaluation program
CSWs –	Clinical Social Workers
DNP –	Doctor of Nursing Practice
EBP –	Evidence-based practice
MCTs –	Mobile Crisis Teams
n=	Sample size
NYC –	New York City
PM –	Project Manager
QI –	Quality Improvement
RCT –	Randomized controlled trial
RR –	Relative risk

Appendix B

Institutional Review Board (IRB) Approval Letter

Institutional Review Board

Not Human Subjects Research

Date: 19-Apr-2019

PI: Rosa Landinez

Submission Type:	Intake
Protocol Number	19-04020214
Protocol Title:	Underutilization of Mobile Crisis Team Services from Lack of Referrals

Dear Ms. Landinez:

The Office of Research Integrity has conducted a review of the abovementioned submission and determined that the activities described in this protocol do not constitute human subjects research as this is not considered a systematic investigation designed to contribute to generalizable knowledge, nor does it involve the use of private identifiable information. This is considered a quality improvement / quality assurance project. The project team will evaluate the current knowledge of a [redacted] program, implement strategies / education to enhance that knowledge, and evaluate if the strategies / education were successful. As a result, 45 CFR part 46 does not apply. Therefore, neither IRB approval nor a notice of exemption are required for you to proceed with your project.

Sincerely,

Institutional Review Board

Appendix C

Participant Invitation Letter

chatham
UNIVERSITY

Dear Participant:

My name is Rosa Landinez, NP and I currently work for the Department of Psychiatry at [redacted]. I am currently pursuing my doctorate at Chatham University in Pittsburgh, PA. I am studying increased knowledge-based of hospital employed Social Workers about Psychiatric Mobile Crisis services and utilization.

The purpose of this study is to educate hospital social workers about mobile crisis team services to help people in the community who are having a psychiatric crisis and are in need of interim mental health care in the community. Voluntary participants are asked to attend an educational in-service session for 20 minutes, consisting of a PowerPoint presentation, and a nine-item questionnaire before and after the presentation. Participants will receive an educational cue card at the end of the session to remind of how and when to refer to the psychiatric mobile crisis team. The educational sessions will take place at various times of the day starting in May 2019. This educational session does not pose a risk to the participants.

If you choose to participate in this study, please send me a reply to this email which serves as your consent, and I will schedule you for the in-service session. If you have any questions or concerns, the best way to reach me is via email at [redacted]

Thank you for your time and consideration.

Rosa Landinez, NP
Project Manager (Student)

Appendix D

Questionnaire

Questionnaire on [redacted] Mobile Crisis Team Services
In-service Educational Session pre-intervention

Please select one answer.

1. **Please indicate your gender.**
   Male □ Female □ Other □
2. **Please select your age.**
   22 - 29 □
   30 - 37 □
   38 - 45 □
   46 - 53 □
   54 - 61 □
   62 or older □
3. **Where do you work within the hospital setting?**
   Inpatient □ Outpatient □ Both □
4. **How many years have you been a social worker?**
   1 year or less □
   2-5 years □
   6- 10 years □
   11- 15 years □
   15 or more □
5. **Please rate your knowledge about the availability of the [redacted] Mobile Crisis Team (MCT) services?**

0	1	2	3	4
No Knowledge	Rarely or never used mobile crisis team services	I heard about it but have not made referrals	I heard about it and have made 1-3 referrals	I heard about it and have made more than 4 referrals

6. **Please check in the items below which scenarios are applicable to [redacted] Mobile Crisis team services?**
   a. Serves patients in all boroughs _____
   b. Can take cases of patients that are hospitalized _____
   c. Can assist in mental health emergencies _____
   d. Is used as a last resort before calling 911 _____
   e. Will respond to calls within 48 hours _____
   f. Can decrease the likelihood of mental health hospitalizations _____
   g. A patient needs an immediate psychiatric evaluation before discharge ___
   h. A patient is delirious and at risk for a fall ___
   i. Patient needs a medication refill _____
   j. Patient needs medication adjustments _____

7. **Please check in the items below which scenarios are applicable to consult and liaison services?**
   a. Serves patients in all boroughs _____
   b. Can take cases of patients that are hospitalized _____
   c. Can assist in mental health emergencies _____
   d. Is used as a last resort before calling 911 _____
   e. Will respond to calls within 48 hours _____
   f. Can decrease the likelihood of mental health hospitalizations _____
   g. A patient needs an immediate psychiatric evaluation before discharge ___
   h. A patient is delirious and at risk for a fall ___
   i. Patient needs a medication refill _____
   j. Patient needs medication adjustments _____
8. **Please check in the items below which scenarios are applicable to 911?**
   a. Serves patients in all boroughs _____
   b. Can take cases of patients that are hospitalized _____
   c. Can assist in mental health emergencies _____
   d. Is used as a last resort before calling 911 _____
   e. Will respond to calls within 48 hours _____
   f. Can decrease the likelihood of mental health hospitalizations _____
   g. A patient needs an immediate psychiatric evaluation before discharge ___
   h. A patient is delirious and at risk for a fall ___
   i. Patient run needs a medication refill _____
   j. Patient needs medication adjustments _____
9. **How confident are you that you can make a referral to [redacted] MCTs today? Circle your answer.**

0	**1**	**2**	**3**
Not confident	**Slightly Confident**	**Moderately Confident**	**Very Confident**

Thank you for your participation. Rosa Landinez, Nurse Practitioner [redacted]

Appendix E

Mobile Crisis Team Demographic Questionnaire Coding

Question – Variable	**Coding**
Participants Gender	Male = 1
	Female = 2
	Other = 3
Participants age range	22 – 29 = 1
	30 – 37 = 2
	38 – 45 = 3
	46 – 53 = 4
	54 – 61 = 5
	62+ = 6
Area in which participant worked	Inpatient = 1
	Outpatient = 2
	Both = 3
Years of clinical experience range	<1 year = 1
	2 - 5 years = 2
	6 - 10 years = 3
	11 - 15 years = 4
	15+ years = 5

Appendix F

Coded Questionnaire Demographic Data, n=35

Statistic	*Gender*	*Age of Participants*	*Place where they work*	*Years of experience*
Mean	2	3	2	4
Median	2	3	2	4
Mode	2	1	2	5
Standard Deviation	0	2	1	1
Sample Variance	0	3	0	2
Kurtosis	5	-1	-1	2
Skewness	--3	0	0	0
Range	1	5	2	4
Minimum	1	1	1	1
Maximum	2	6	3	5
Count	35	35	35	35
Confidence Level (95.0%)	0.11	0.60	0.24	0.47