Serious Mental Illness and the Continuum of Cancer Care

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Serious Mental Illness and the Continuum of Cancer Care

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Abstract

Background and Review of Literature: Cancer has been associated with up to a 30 percent higher case fatality rate among adults living with serious mental illness (SMI) although their incidence is similar to that of the general population. This disparity has been attributed to healthcare system, health care provider, community/policy, family caregiver and individual patient factors.

Purpose: To provide community mental health care clinicians with knowledge and skills to effectively function in the key role as care coordinators in the clinical-community relationship in efforts to assist persons with serious mental illness access effective, efficient, safe, timely, equitable and person-centered care across the continuum of cancer care.

Methods: This is quality improvement project in which the care coordination knowledge, attitude and practice of Adult Community Clinical Services (ACCS) team clinicians at a community mental health agency was assessed using a survey questionnaire. An educational intervention on the collaborative care model (coordinated or concurrent care) to improve practice was provided to this group of workers.

Implementation plan/Procedure: Two (2) 60-minute educational presentation on care coordination/collaboration were provided to community mental health clinicians mid-December 2019. The University of Massachusetts, Amherst (UMass) Internal Review Board (IRB) approval was obtained prior to the implementation of this DNP Project.

Implications/Conclusion: Care coordination efforts have the promise to solidify interdisciplinary collaboration in care delivery and in effect improve physical health outcomes by facilitating the attainment of cancer care goals for people living with SMI.

Keywords: Serious mental illness, collaborative care, cancer and mental illness, integrated care, and care coordination
Serious Mental Illness and the Continuum of Cancer Care

Introduction

Cancer continues to be a major public health concern in the United States and globally; imposing a significant burden to society. In the United States, The National Cancer Institute in 2018 estimated that between the years 2011 and 2015, the incidence of cancer in the country was 439.2 per 100,000 men and women while the cancer mortality rate within the same time period was 163.5 per 100,000 men and women. While cancer affects all population subgroups, people living with serious mental illness are disproportionately affected by cancer-related deaths compared to the general population. Because such disparity in cancer-related mortality can be attributed to several factors, it is important to continue to seek novel evidence-based strategies to addressing it.

Background

The National Institute of Mental Health (NIMH) defines a serious mental illness “as a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities” (2017, para 1). Between the years 2013 and 2014, an estimated 4.2 percent of the United States general population was made up of adults 18 years and older living with serious mental illness (SMI) (Substance Abuse and Mental Health Services Administration [SAMHSA], 2015). In Massachusetts, there was a total of 222,000 adults 18 years and older matching the national percentage of 4.2 percent living with SMI within that same time period (SAMHSA, 2015). This trend remained sustained at the 4.2 percent rate in the year 2016, which is the most current year with statistical records from the NIMH (NIMH, 2017). Unfortunately, despite having a significant proportion of the population living with serious mental illness, it is widely documented that these individuals have a shorter
life span, dying up to twenty years younger than the average general population with such excess mortality attributed to preventable physical conditions including chronic medical conditions, infectious disease, lifestyle and health risk behaviors (National Institute for Health and Care Excellence [NICE], 2018). Of the preventable physical conditions, cancer has been associated with up to a 30 percent higher case fatality rate among the seriously mentally ill even though their incidence is similar to that of the general population (Kisely, Crowe, & Lawrence, 2013). This regrettable case fatality rate has been attributed to several underpinning factors with suboptimal level of care at the epicenter (World Health Organization [WHO], 2015).

In recent years, researchers, health care organizations and health care systems have been investing resources in efforts aimed at addressing the extant disparity in physical health outcomes for individuals living with SMI compared to the general population. Cardiovascular diseases and cancer are areas of glaring disparity under scrutiny (Hwong & Mangurian, 2017). Research has shown that despite similar cancer incidence in both the general population and among people living with psychiatric disorders, the latter group has higher rates of metastatic disease at diagnosis and are less likely to receive specialized care. This is in large part due to a disconnect among their providers that eventually leads to loss to follow-up, thus, leading to higher cancer related mortality among the SMI population subgroup (Kisely, et al., 2013). It is therefore no secret that there is a dire need for increasing access to quality preventative and integrative health promotion care for patients with serious mental disorders along the continuum of cancer care, i.e. from early screening to survivorship. In lieu of a formal cancer care continuum, interventions fall into three main categories; health system-focused interventions, community-level and policy-focused interventions, and individual-focused interventions (WHO, 2015).
Problem Statement

Despite similar cancer incidence in the general population and among people living with serious mental illness (SMI), the latter group has higher mortality rates in large part due to care fragmentation. A collaborative approach to care holds the promise of bringing together all stakeholders to the table of shared responsibilities in pursuing optimal standard of care through the continuum of care for persons living with SMI in efforts to end the existing inequities in cancer mortality.

Organizational “Gap” Analysis of Project Site

The site of implementation is a community-based mental health care delivery organization at the frontline of addressing the complex healthcare needs of adults living with serious mental illnesses in the Metro Boston area. The age range of persons served is from 26 to early 80 years old. These individuals live in group living environments, supported housing or independent living situations but all receive care services from the Adult Clinical Community Services (ACCS) program of the Department of Mental Health (DMH). A significant majority of the persons served through the organization have multiple established or suspected risk factors for cancer. The most prevalent of these factors are advancing age, poor diet/nutrition, obesity and tobacco use.

As mentioned in the introduction section, the cancer incidence for adult men and women in the United States between 2011 and 2015 was 439.2 per 100,000. This translates in to 0.4% incidence rate. Unfortunately, a vast majority of the adults served by this community provider are aging with extensive cigarette smoking histories. Thankfully, the organization is committed to quality improvement and has partnered with other health care establishments to collaboratively work to expand access to optimal care through the continuum of cancer care for
adults with serious mental illness. New and evolving guidelines are being developed to form the basis for a more effective, partnership that provides for safe and person-centered care.

**Literature Review**

To begin the search for relevant evidence for analysis, a google search was conducted using the key words serious mental illness, collaborative care, cancer and mental illness, integrated care, and care coordination. This preliminary search was aimed to explore the range of available works and each search term yielded hundreds of millions of results. Moving to the University of Massachusetts E-Resources page, Public Medline (PubMed), Cumulative Index of Nursing and Allied Health (CINAHL) Complete, and Psychological Information (PsychINFO) databases were accessed and the same search terms used. Tens of thousands of articles were retrieved with broad terms. The inclusion criteria were then narrowed to include articles within the past 10 years, in English language and peer reviewed works. Applying these filters significantly narrowed the search to a manageable number of search results. Reviewer then screened titles and abstracts for relevance to the current project and 32 articles that met the inclusion criteria were selected for further analysis.

The evidence considered in this study was evaluated using the John Hopkins Nursing Evidence-based Practice Rating Scale (JHNEBP Rating Scale). Articles that were screened into consideration following the initial inclusion criteria (publication within 10 years, peer reviewed, and in English language) were subjected to the quality test. To be considered for final analysis, articles from the 32 selected had to fall within levels I to III in strength of evidence and be graded as an “A” or “B” quality evidence. Following these quality criteria, eight articles were selected to be included in the final analysis.
The eight selected studies included one literature review, one meta-analysis of randomized clinical trials (RCT), one meta-analysis of RCT and other study designs, one quasi-experimental study, three qualitative studies, and a mixed method empirical study. Three major themes were uncovered in this review.

**Excess Mortality Among the Serious Mentally Ill Population**

There is a general consensus among the authors that individuals with serious mental illness have excess mortality compared to the general population (Banfield & Forbes 2018; Barley, Borschmann, Walters, & Tylee, 2016; Clifton, 2016; Domino, Wells, & Morrissey, 2015; Gronholm, Onagbesan, & Gardner-Sood, 2017; Irwin, Henderson, Knight, & Pirl, 2014; Meepring, Chien, Gray & Bressington, 2018; Muliira, & D’Souza, 2016). The literature exposes disparities in mortality disproportionately affecting people with serious mental illness with cancer alone accounting for up to a 30 percent higher case fatality rate among adults living with serious mental illness (SMI) although their incidence is similar to that of the general population (Irwin, et al., 2014). On a global scale the literature reviewed paints a daunting image of society watching the most vulnerable population live shorter life span, dying up to twenty years younger than the average general population.

**The Culprit Hiding in Plain Sight: Preventable Underlying Physical Conditions**

Synthesis from the literature reviewed for this project reveals that the excess deaths experienced by people living with serious mental illness often stem from preventable physical conditions for which preventive health screenings and health promotion initiatives would have averted (Clifton, 2016; Irwin, et al., 2014; Muliira, & D’Souza, 2016). These authors agreed that aggressively addressing physical health problems among people living with serious mental illness would result in a reduction in the current mortality gap disproportionately affecting them.
Despite differing opinions on the strategies to employ in improving physical health for individuals with serious mental illness, there is strong advocacy from the literature urging all important stakeholders to invest in initiatives which hold promise to improving physical health outcomes for individuals with severe mental illness.

**A United Front Via Care Coordination (Collaborative Care)**

The articles reviewed for this project included one article focused on interdisciplinary team approach, one study advocated for providing supportive interventions for care givers, one study called for a nurse-led comprehensive health assessment and intervention strategy, two studies targeted care coordination, one explored primary care-based medical homes, and one study focused on patient navigator interventions.

Barley, et al. (2016) in a systematic review of interventions to encourage the uptake of cancer screening among individuals with severe mental illness however uncovered that there are no specific strategies recommended currently to encourage cancer screening in this population.

Banfield and Forbes (2018), using an empirical study (mixed method) evaluated the processes and outcomes of Partners in Recovery Initiative; a health and social care coordination program in Australia. They conclude that care coordination is key to care continuity especially when working with an interdisciplinary team of providers. The result was better physical health outcomes for patients receiving care at participating community mental health care practices for SMI and complex other conditions requiring care from multiple outside providers in the Australian Capital Territory (ACT). Similarly, Gronholm, et al. (2017) in their qualitative study demonstrate that there are strategies for successful integration of physical health monitoring in mental health settings with appropriate use of care coordinators. This study explores barriers to successfully attending to the physical health needs of individuals with SMI within a mental
health care setting. Clifton, (2016) also stresses the importance of integrated care delivery for individuals with SMI especially as it pertains to cancer screening and health promotion initiatives. These authors advocate for collaboration between primary and secondary care staff and policymakers developing an integrated approach to cancer screening for people living with mental illness.

In their quasi-experimental study, Meepring, et al. (2018) building on earlier works foster the course for collaborative care delivery for people with SMI by designing and implementing a health improvement profile intervention among 105 Thai adults with SMI. With a 100% follow through from intervention participants, the study shows that nurse-led physical health promotion programs have the potential to significantly improve the physical health outcomes for people living with SMI.

In a meta-synthesis, Irwin, et al. (2014) demonstrates that harnessing different models of integrated medical and psychiatric care for schizophrenia patients with cancer have the promise to meet their cancer care goals. They go a step further to highlight the importance of an interdisciplinary approach that includes community-based patient navigators and psychiatrists on the cancer treatment team. This premise is defended in a 2016 meta-analysis of RCT and other studies by Muliira, and D’Souza who found that minority patient groups benefit from patient navigator interventions. In lieu of cancer screening, utilizing such navigators leads to an enhanced uptake of colorectal cancer screening.

A retrospective study of primary care-based medical home model including 7,228 adult Medicaid enrollees with schizophrenia, 13,406 with bipolar disorder, and 45,000 with major depressive disorder show improved engagement in physical health care services according to Domino, et al. (2015).
This literature review of cancer care coordination or collaborative care interventions for people living with SMI revealed that there are several strategies for implementing such interventions. While the central theme in all the studies included in this review appears to pivot around interventions aimed at better care coordination effort, there seem to be no consensus on the definition of collaborative care (care coordination) and no evidence of a superior strategy of care coordination. The evidence suggests that interventions can be designed to target members of the healthcare team, healthcare system and policy, family caregivers, and individual patients. As pointed by Barley, et al. (2016), the lack of recommended strategy for interventions is due to lack of RCT studies on this subject. Nonetheless, there is evidence that care coordination is positively correlated with positive physical health outcomes for people living with SMI and improved likelihood of meeting their cancer care goals.

Evidence-based Practice: Verification of Chosen Option

Based on the evidence gathered in this review, a collaborative approach to the continuum of cancer care among people with SMI has proven useful in mental health care settings. Based on this finding, a quality improvement intervention project employing fidelity consistent modification on the patient navigator strategy weaved in an educational curriculum is proposed here. This educational intervention is aimed at encouraging community mental health clinicians to engage with mental and physical health providers in efforts to bridge the care gaps that may be contributing to suboptimal care to this vulnerable population. Such care coordination efforts have the promise to solidify interdisciplinary collaboration in care delivery and in effect improve physical health outcomes by facilitating the attainment of cancer care goals for people living with SMI.
Theoretical Framework: Nola Pender’s Health Promotion Model

Originally developed in 1982 by Dr. Nola Pender, the Health Promotion Model (HPM) was developed with a purpose “to assist nurses in understanding the major determinants of health behaviors as a basis for behavioral counseling to promote healthy lifestyles” (Pender, 2011 p.2). Since its development, the model was revised in 1987, 1996, 2002 and most recently in 2006 (See Appendix A). In a 2011 review of the HPM, Pender clearly defines the key concepts of the HPM (health, environment, nursing and person) while detailing how they relate to each other and in turn relate to her HPM theory. The HPM is based on the philosophical claim of a reciprocal interaction world view underpinned by seven basic assumptions. Specifically, relevant to this project are the assumptions that Health professionals, such as nurses, constitute a part of the interpersonal environment, which exerts influence on people through their life span and that self-initiated reconfiguration of person-environment interaction patterns underscores behavior change. Based on these assumptions, this project sought to draw ACCS clinical staff’s attention to the potential they have to initiate and/or foster collaboration between physical and mental health care teams involved in care for the people under their care. The core components of the HPM (individual characteristics and experience, cognition and feeling about health behavior and behavioral outcomes) provide logical adequacy for implementation in this project. For instance, using this model, this project will elicit information about participants prior care coordination knowledge, explore their perceived barriers and benefits of a collaborative approach to care as well as verify their commitment to implementing the proposed collaborative care model. The logical pathways embedded in the HPM which form the basis for effective application of the Knowledge Attitude and Practice (KAP) survey tool and educational intervention include the following
1. Individual characteristics and experiences influence a person’s cognition.

2. Individual’s competing demands would directly impact their health behavior.

3. Specific components of a person’s cognition and feeling about a given behavior could influence their commitment to an action plan.

4. Individual characteristics/experiences influence cognition and personal feelings about a behavior and then specific components of cognition and personal feelings interact to influence the person’s health-promoting behaviors.

The key point to remember with this theoretical framework is that the operational adequacy relies heavily on collaboration between important stakeholders.

**Methods**

**Goals, Objectives and Expected Outcomes**

The overarching goal of this project was to improve effectiveness of cancer-related care provided to people living with serious mental illness. The anticipated outcome was to improve on communication (interdisciplinary, intradisciplinary and information transfer) skills of community mental health care nurses so they are better equipped to advocate for the physical health needs of the mentally ill patient.

The expected objective in the short-term (by January 15th, 2019), was a change in the knowledge, attitude, and skills of community mental health nurses as it pertained to care coordination and inter/intra-disciplinary collaboration in care delivery.

In the intermediate term (by February 15th, 2019), the expected outcome was change in behavior and practice of community mental health nurses as they actively engage with intra/inter-disciplinary care teams in promoting optimal care for persons with serious mental illness.
Goal 1. Engage community mental health care workers in a 2-phased educational intervention on interdisciplinary communication within a two-month time frame.

Objective 1. Establish clear communication priorities for community mental health workers engaged in care coordination efforts for adults living with a serious mental illness.

Objective 2. Develop awareness of personal knowledge, attitude and practices regarding interdisciplinary communication by completing a Knowledge, Attitude and Practice (KAP) survey tool. This objective was measured by an evaluation of KAP surveys completed before and after the educational intervention.

Outcome. Improved knowledge, attitude and practice skills of community mental health clinical staff as recorded on post-intervention KAP survey in March 2020.

Goal 2. Through training on the collaborative care model, realize a 5% increase in collaboration efforts between mental health and physical health care providers within three months.

Objective 1. Introduce clinicians to one care coordination measurement tool and encourage maintenance of consistent use of a tracking system of care coordination efforts among community mental health care workers.

Objective 2. Connect and engage with external providers for each individual patient.

Outcome. A reported 5% increase in reconciling discrepancies in patients’ medical records among physical health and mental health care providers 3 months after the intervention.

Project Design

This quality improvement project saw the implementation of an educational intervention with frontline community mental health clinicians. The educational curriculum targeted the role of effective clinical coordination/collaboration with inter/intra-disciplinary teams on optimal cancer care for people living with a serious mental illness. Using a Knowledge, Attitude and
Practice (KAP) survey tool, quantitative data was obtained on the clinicians’ current knowledge, attitudes and practice regarding serious mental illness and cancer care. These surveys were conducted at 4 weeks prior to the educational intervention and repeated at 4 weeks and 8 weeks post intervention. The project’s pre-intervention survey was aimed at fielding whether community mental health nurses appreciated the extant inequities in cancer care for individuals with SMI and the need for action to address such care gaps.

**Project Site and Population**

This project was implemented at a community mental health care delivery organization dedicated to meeting the health needs of people living with serious mental illnesses in the Metro Boston area. The organization is a Massachusetts Department of Mental Health (DMH) community vendor, thus, operates under the Adult Community Clinical Services (ACCS) program designed by DMH. Under the DMH’s ACCS program, community vendors are mandated to deliver evidence-based interventions within the context of a standardized, clinically focused model. In view of this, the project site is committed to continuous quality improvement of clinical services provided to the over 450 adults diagnosed with serious and persistent mental illness it serves under the ACCS mandate.

In efforts to ensure that the persons served by the organization receive holistic care, the agency’s ACCS program is subdivided into four clinical care teams and four specialty programs. Each clinical team is assigned a registered nurse whose primary function is to coordinate care delivery efforts and ensure the persons served medical and psychiatric needs are met adequately. The specialty programs are also assigned clinical staff and two registered nurses especially assigned to the one program providing services to adults with co-occurring serious mental illness and serious medical conditions. The specialty programs are run by a Clinical Residential
Services Coordinator while the nurses are overseen by a nursing Director who is in turn supervised by a medical Director. Another arm of the organization; the Behavioral Health Community Partners (BHCP) provide added nursing and care coordinator support to ensure optimal care collaboration between community and other healthcare professionals. The Medical Director works in close collaboration with the ACCS Director for the agency as well as the Director of Residential Services. These are all important stakeholders for this project as their approval will be critical to execute the project with the ACCS clinical teams and specialty program nurses. Participants for this project included all the ACCS nurses and specialty programs clinical coordinators since these staff groups are tasked with care coordination efforts.

**Ethical Considerations/Protection of Human Subjects**

The University of Massachusetts, Amherst (UMass) Internal Review Board’s (IRB) waiver was obtained prior to initiating the DNP Project. North Suffolk Mental Health Association which is the site for implementation of this project does not have its own Institutional Board Review (IRB) given that research is not the scope of the organization. Therefore, the organization relied on the UMass Amherst IRB which served as the IRB of record for this project. Therefore, UMass Amherst’s IRB reviewed and approved the project proposal prior to implementation.

All project participants were nursing and social work staff at a community mental health care delivery, Adult Community Clinical Services. Participants were made aware that their participation was voluntary, and they reserved the right to choose to withdraw at any point during the project. There were no anticipated safety concerns implicated with participation in the study. All surveys were anonymous and void of any personal identifiers. In efforts to keep the risk of any information breach to minimum, only the DNP student had access to the completed
survey questionnaires and was careful to appropriately destroy them once the data analysis was completed. While still in use, survey questionnaires were secured at DNP student’s workstation. The office workstation had a locked filing cabinet and only the DNP student had access to it. For participants who choose to complete and email survey questionnaires rather than the paper questionnaire, password protection to DNP student’s account and all surveys were printed and then deleted.

**Cost-Benefit Analysis/Budget**

The implementation of this project involved minimal cost. To the project site, the cost was associated to the salaries of participants for training sessions. Nonetheless, the training sessions were held during normal work hours at a time designated for team meetings. The benefits are intangible in the form of skills acquired to foster collaboration and thereby improve the quality of care delivered by participants.

The DNP student incurred cost of approximately $200 providing snacks during training. Printing of presentation materials was done using the DNP student’s already existing supplies. See Appendix B for the cost-benefit analysis.

**Timeline**

The implementation phase of the project spanned over a 3-month time frame. After obtaining the UMass Amherst IRB waiver on October 2nd, 2019, participants were recruited for project implementation. After the participant recruitment phase, the ensuing key activities completed included:

1. Completion of pre-intervention knowledge, attitude and practice (KAP) survey of the participants (November 18th, 2019).
2. Educational intervention sessions on coordination/collaboration between November 18th and December 16th, 2019.


Table 1 in appendix C shows the specified project timeline.

Results

Project Site and Population

This project was implemented at a community mental health care delivery organization dedicated to meeting the health needs of people living with serious mental illnesses in the Metro Boston area. Project participants included a total of eleven (11) clinicians including all four social workers on one of the four adult community clinical services (ACCS) teams, all three registered nurses on the Behavioral Health Community Partners team, the nursing director, two ACCS team nurses and one nurse manager.

Measurement Instrument

In order to measure the outcome of this DNP project, the Knowledge, Attitude and Practice (KAP) survey tool (Appendix D) was used to obtain quantitative and qualitative data on attitude/perceptions and role of community mental health nurses regarding cancer screening for adults with severe mental illness. Participants included seven (7) community mental health nurses and four (4) clinical social workers staff at the agency’s Adult Community Clinical Services program. The same group was surveyed before the intervention and at 4 weeks and 8 weeks post intervention. The KAP survey tool is an extensively used tool globally and has been
proven to be both valid and reliable in measuring individual knowledge, attitude and practice habits in diverse fields.

A major advantage of the KAP survey is that it reveals the mindset of the target population concerning a subject of interest; in this case collaborative care (coordinated or concurrent care) model. This is particularly important to this DNP project as it is vital that community mental health workers understand and accept the key role they have as advocates for the person living with a serious mental illness. Conversely, a major disadvantage is that many people often ignore surveys, thus, the tendency for a low response rate. To manage this the survey was anonymous and made available electronically and respondents were advised not to include any personal identifiers on the survey on or before the training session dates. Participants were sent weekly email reminders for the 2 weeks leading to the training sessions. For those who failed to complete the survey before the training session, they were provided hard copy version to be completed before the training commenced.

Data Collection Procedure

Pre-intervention procedures. For this project, community mental health nurses and clinical staff at the epicenter of care coordination for adults living with a serious mental illness as defined by the National Institute of Mental health and the Substance Abuse and Mental Health Services Administration were identified. The administrative staff was contacted and agreed to the implementation of the project. With the assistance of the nursing director, eligible participants were contacted via email, phone calls, and in-person meetings and informed of the project as well as their roles. Using the knowledge, attitude and practice (KAP) survey tool information on the knowledge on extant inequities in cancer care for people living with serious mental illness, attitude towards ending such inequities and evidence-based practice to promote
optimal standard of care through the continuum of cancer care delivered to persons living with a serious mental illness was obtained 6 weeks prior to the educational intervention.

**Intervention.** Two 60-minutes long educational sessions were completed with the nursing staff while one 60-minute session was held with the social workers and then the second session was self-directed learning in which the DNP student provided the care coordination measurement tool and directions on its use to the staff. All educational sessions were completed between November and December of 2019. The curriculum was on the evidence-based practice of care coordination (collaborative care model) across the continuum of cancer care for adults living with serious mental illness. The emphasis was on the role of effective communication (including information transfer) with inter and intra-disciplinary care teams to ensure that recommended early screening for different types of cancers in at risk individuals are offered and completed as needed as well as appropriate follow-up care. The participants were also introduced to the Care Coordination Measurement Tool as an aid to guide their communication and care coordination efforts.

**Post-intervention procedures.** Using the KAP survey tool, two post intervention surveys were completed at 4 weeks post- and 8 weeks among the participants. The data of interest was to assess any change in knowledge, attitude and skills among participants at 4 weeks and to assess change in behavior and practice at 8 weeks post intervention.

**Data synthesis and Analysis**

Due to the small sample size (11 Adult Community Clinical Services team nurses and specialty programs clinical staff), the KAP survey data is presented using basic descriptive statistics to describe the structured-response items. Results of structured survey items are presented in frequency tables while themes uncovered in the qualitative portions of the surveys
will be presented in narrative form. All analyses were completed using 2018 Micro Soft Excel program.

**Preintervention survey findings.** There was a response rate of 81.82% response rate to the pre-intervention survey with nine of the 11 potential participants returned their completed knowledge, attitude and practice (KAP) surveys.

On the knowledge portion of the survey, seven participants noted that they knew the definition of serious mental illness, while one respondent indicated they did not know the definition, and another was unsure if their understanding of SMI was correct. Eight of the 9 respondents agreed that cancer poses a serious problem for people living with SMI while one respondent thought cancer was somewhat a serious problem for people with SMI. All respondents however agreed that an interdisciplinary team approach is ideal when managing people living with SMI with concurrent cancer diagnosis. While two respondents indicated that cancer related care is only important in the setting of an established cancer diagnosis, seven noted that cancer-related care extends from prevention through treatment. There was a unanimous agreement among participants that despite diagnosis of SMI, there are steps that can be taken to reduce the chances of people dying from cancers.

One item on the attitude measurement was an unstructured question inquiring of participants about the challenges of delivering optimal cancer-related care to people with SMI. Three themes were identified from the responses which included difficulty communicating with interdisciplinary care teams, a fragmented health care system that discourages collaboration between physical and mental health care providers and lack of appropriate/consistent psychosocial supports for the patients. As one respondent put it “people who struggle with the effects of schizophrenia depend heavily on the trusting relationships they’ve established with
direct care staff. Unfortunately, there is a high staff turnover so the client must continually adjust to newcomers who may not know them well enough or have had enough time for the trust to have been established.” The five structured items on the attitude survey are presented in table 1 below.

Table 1

*Pre-intervention Attitude of Community Mental Health Clinicians Regarding Collaborative Care (Coordinated Care) Model*

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Yes</th>
<th>No</th>
<th>Don’t Know</th>
<th>No Response*</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your opinion, can people living with serious mental illness commit to</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>undergoing the often-rigorous cancer-related treatments?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The length of time required to coordinate care for patients with complex needs</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>would frustrate me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is difficult to form working relationships with interdisciplinary work groups.</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Do you feel your organization has the necessary resources to support a</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>person with serious mental illness and cancer?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would you have any concerns about advocating for specific needs of the persons</td>
<td>3</td>
<td>6</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>with serious mental illness when the advance practitioners have differing views</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of the patient from you?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Total Number of participants (N)= 11

*Either respondent did not return survey or did not provide response to specific questions*
The practice portion of the survey had six items including one qualitative item. On the question “in your experience, how is a person with serious mental illness with a potential or actual cancer diagnosis managed?” two crucial themes were revealed; a heavy focus on the patient’s ability to adhere to appointment schedule and over-reliance on “outside” supports to ensure the patient follows through with care recommendations. While seven participants worked with people living with SMI and either a confirmed or presumed cancer diagnosis, all participants agreed that in the event the person living with a serious mental illness chooses not to follow recommended cancer-related care at any point on the care continuum, it is important that an interdisciplinary collaborative approach be implemented in continuing to work with the patient to determine their care goals. Four participants noted that they will use any means of communication possible to foster such collaboration including emails, phone calls and accompanying patients to appointments.

**Four-weeks post intervention findings.** Like with the pre-intervention surveys, 9 of the 11 clinicians who attended the educational sessions returned their completed surveys representing 81.82% response rate.

At the 4-week post intervention survey, eight of the nine respondents noted that they knew the definition of serious mental illness, while one respondent indicated they did not know the definition. All nine respondents agreed that cancer poses a serious problem for people living with SMI as well as agreeing an interdisciplinary team approach is ideal when managing people living with SMI with concurrent cancer diagnosis. Eight of the nine respondents noted that cancer-related care extends from prevention through treatment while one respondent thought such care is only appropriate in lieu of an established cancer diagnosis. There was consensus
among respondents that despite diagnosis of SMI, there are steps that can be taken to reduce the chances of people dying from cancers.

Table 2 below shows results of the structured items on the attitude survey four weeks post intervention.

Table 2

*Four-weeks post-intervention Attitude of Community Mental Health Clinicians Regarding Collaborative Care (Coordinated Care) Model*

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Yes</th>
<th>No</th>
<th>Don’t Know</th>
<th>No Response*</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your opinion, can people living with serious mental illness commit to undergoing the often-rigidorous cancer-related treatments?</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>The length of time required to coordinate care for patients with complex needs would frustrate me.</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>It is difficult to form working relationships with interdisciplinary work groups.</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Do you feel your organization has the necessary resources to support a person with serious mental illness and cancer?</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Would you have any concerns about advocating for specific needs of the persons with serious mental illness when the advance practitioners have differing views of the patient from you?</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

*Note: Total Number of participants (N)= 11
*Either respondent did not return survey or did not provide response to specific questions
Item six on the attitude survey asked, “what do you think are the challenges of delivering optimal cancer-related care to people living with serious mental illness?” Four themes emerged from the narrative responses provided by respondents. Lack of appropriate and consistent psychosocial supports, poor communications between providers especially across different facilities using different electronic health records systems, time constraints, and limited insight on the path of the patient. One respondent captured these themes in their response that read “many of our clients who are challenged with a serious mental illness need supportive services tailored to our population… EHR [electronic health records] differences/communication, communicating between agencies, ‘compliance’ with treatment recommendations/interference from symptoms with members’ overall goal”.

The practice portion of the survey had 6 items including one qualitative item. On the question “in your experience, how is a person with serious mental illness with a potential or actual cancer diagnosis managed?” one theme emerged in all responses. Respondents noted that while there is much room for improvement, significant strides are being made to foster a collaborative effort with patient needs at the center. One respondent wrote “a strong effort is made to work collaboratively with the members of all the member’s [patient] providers while keeping the member’s needs/goals in mind at all times.” Eight of the nine respondents noted their commitment to continue to work with patients to identify their care goals if they chose not pursue recommended treatment plans in the setting of a confirmed cancer diagnosis while one respondent noted they will respect whatever the patient’s wishes are. However, all respondents noted that an interdisciplinary collaboratives approach to care is ideal across the continuum of cancer-related care for people living with serious mental illness. In practice, respondents noted phone and email exchanges are good mediums for collaborating across disciplines while seven
respondents noted that attending specialty appointments with patients offers a unique opportunity to collaborate in a face-to-face meeting with other providers.

**Eight-weeks post intervention survey findings.** Ten out of the 11 participants returned the completed surveys at the 8-weeks post intervention data collection point accounting for a 90.91% response rate.

At the 8-weeks post-intervention point on the knowledge survey, 9 out of the 10 respondents noted they were confident they knew what serious mental illness (SMI) is with only one respondent still unable to define SMI. All respondents agreed that cancer poses a serious problem for people living with SMI and while nine of the 10 respondents pointed that a team approach to cancer-related care is ideal to providing optimal care to this population, one respondent indicated that the choice of care model should be person-specific. Nine respondents noted that cancer-related care should be a continuum from prevention through treatment while one respondent was uncertain of when cancer-related care should be initiated. Nine of the 10 respondents answered the last item on the knowledge portion of the survey, and all agreed that there are measures that could be put in place to reduce the chances of people dying from cancers.

On the attitude portion of the survey at the 8-week data collection point, four themes were uncovered as challenges clinicians perceived impeded optimal cancer-related care deliver for people with SMI. These included limited or even absent psychosocial support for the patient, limited and in some instances absent interdisciplinary communication between providers and across facilities, time constraints on the path of clinicians and limited insight and unwillingness to engage with physical health care providers on the path of the patients. These themes are wrapped in three statements from respondents. “Sometimes we just don’t have all the time we need to coordinating everything from top to bottom”, one respondent noted. Another wrote
“communication between providers, getting/sharing information/documentation especially with specific [information] releases required by different facilities, turf wars, who does what”.

Perhaps the most poignant statement is “support systems not being in place or fragmented family supports, providers focus on the disease and not the patient”. Table 3 above presents results of the structured questions on the attitude survey.

Table 3

Eight-weeks Post-intervention Attitude of Community Mental Health Clinicians Regarding Collaborative Care (Coordinated Care) Model

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Yes</th>
<th>No</th>
<th>Don’t Know</th>
<th>No Response*</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your opinion, can people living with serious mental illness commit to undergoing the often-rigorous cancer-related treatments?</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>The length of time required to coordinate care for patients with complex needs would frustrate me.</td>
<td>3</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>It is difficult to form working relationships with interdisciplinary work groups.</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Do you feel your organization has the necessary resources to support a person with serious mental illness and cancer?</td>
<td>6</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Would you have any concerns about advocating for specific needs of the persons with serious mental illness when the advance practitioners have differing views of the patient from you?</td>
<td>0</td>
<td>8</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

*Note: Total Number of participants (N)= 11

*Either respondent did not return survey or did not provide response to specific questions
On the practice survey, on the question “in your experience, how is a person with serious mental illness with a potential or actual cancer diagnosis managed?” two major themes became apparent; coordinated communication between interdisciplinary teams stressing good communication/information sharing and ensuring adequate psychosocial supports are in place to support a person-centered plan of care. One respondent summed this up by writing “the way in which they [patients] are managed heavily depends on the care team they already have. If they have someone that can advocate for them, they’ll receive better outcomes. If they’re someone that’s lacking resources or support, they’re [sic] outcome may be less favorable.” Eight of the 10 respondents currently work with individuals living with a SMI and a current cancer diagnosis. All 10 respondents are currently involved in care coordination efforts for patients with SMI and indicated that a collaborative approach to care-decision making is warranted for optimal care as well as noting their commitment to continuing to work with patients to identify their care goals and work towards meeting those goals especially when the patient chooses not to pursue medical treatment recommendations. All respondents indicated that phone and email exchanges are good mediums for collaborating across disciplines while eight respondents noted that attending specialty appointments with patients offers a unique opportunity to collaborate in a face-to-face meeting with other providers.

Comparing percentages of the structured item responses on the attitude survey at all three data collection time points showed shifts in participants overall change in attitude on each surveyed item. Tables 4 -Table 8 present these data.
Table 4

*Percentage Comparison of KAP survey on Attitude of Community Mental Health Clinicians on question 1*

<table>
<thead>
<tr>
<th>Time of Survey</th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Don’t Know (%)</th>
<th>No Response (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>54.55</td>
<td>18.18</td>
<td>9.09</td>
<td>18.18</td>
</tr>
<tr>
<td>4-weeks post intervention</td>
<td>54.55</td>
<td>9.09</td>
<td>9.09</td>
<td>27.27</td>
</tr>
<tr>
<td>8-weeks post intervention</td>
<td>72.73</td>
<td>9.09</td>
<td>9.09</td>
<td>9.09</td>
</tr>
</tbody>
</table>

*Note: Total Number of participants (N)= 11
Percentages may not add up to 100 due to rounding
*Either respondent did not return survey or did not provide a response to specific questions

While only 54.55% of participants reported they were confident people with SMI could follow-through with cancer-related treatments at the pre-intervention and 4-week post-intervention points, 72.73% believed people living with SMI could complete recommended treatment at the 8-weeks post-intervention data point (Table 4 above).

Question 2 on the attitude survey sought to assess clinicians’ attitude/perceptions about the time it requires to coordinate care. Table 5 below shows the comparison of findings at the pre-intervention, and subsequent post intervention data collection point.
Table 5

Percentage Comparison of KAP survey on Attitude of Community Mental Health Clinicians on question 2

<table>
<thead>
<tr>
<th>Time of Survey</th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Don’t Know (%)</th>
<th>No Response (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>9.09</td>
<td>63.64</td>
<td>9.09</td>
<td>18.18</td>
</tr>
<tr>
<td>4-weeks post intervention</td>
<td>27.27</td>
<td>45.45</td>
<td>9.09</td>
<td>18.18</td>
</tr>
<tr>
<td>8-weeks post intervention</td>
<td>27.27</td>
<td>54.55</td>
<td>9.09</td>
<td>9.09</td>
</tr>
</tbody>
</table>

Note: Total Number of participants (N)= 11
Percentages may not add up to 100 due to rounding
*Either respondent did not return survey or did not provide a response to specific questions

Table 6 looks at the clinicians’ attitude shifts regarding interdisciplinary work groups.

Table 6

Percentage Comparison of KAP survey on Attitude of Community Mental Health Clinicians on question 3

<table>
<thead>
<tr>
<th>Time of Survey</th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Don’t Know (%)</th>
<th>No Response (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>36.36</td>
<td>36.36</td>
<td>0.00</td>
<td>27.27</td>
</tr>
<tr>
<td>4-weeks post intervention</td>
<td>36.36</td>
<td>36.36</td>
<td>9.09</td>
<td>18.18</td>
</tr>
<tr>
<td>8-weeks post intervention</td>
<td>36.36</td>
<td>45.46</td>
<td>0.00</td>
<td>18.18</td>
</tr>
</tbody>
</table>

Note: Total Number of participants (N)= 11
Percentages may not add up to 100 due to rounding
*Either respondent did not return survey or did not provide a response to specific questions
The percentage of clinicians’ who believe forming interdisciplinary work groups is difficult remained stable at 36.36% across the three data collection time points. However, there was a shift from 36.36% at the pre-intervention and 4-weeks post-intervention points to 45.46% at the 8-weeks post intervention in percentage of participants who believed forming interdisciplinary work teams will not be difficulty.

Question 4 presented in Table 7 below assessed clinicians’ attitude regarding their agency’s ability to provide needed resources for effective support of people living with SMI and a concurrent cancer diagnosis.

Table 7

Percentage Comparison of KAP survey on Attitude of Community Mental Health Clinicians on question 4

<table>
<thead>
<tr>
<th>Time of Survey</th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Don’t Know (%)</th>
<th>No Response (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>36.36</td>
<td>18.18</td>
<td>27.27</td>
<td>18.18</td>
</tr>
<tr>
<td>4-weeks post intervention</td>
<td>45.46</td>
<td>18.18</td>
<td>0.00</td>
<td>36.36</td>
</tr>
<tr>
<td>8-weeks post intervention</td>
<td>54.55</td>
<td>36.36</td>
<td>0.00</td>
<td>9.09</td>
</tr>
</tbody>
</table>

*Note: Total Number of participants (N)= 11
Percentages may not add up to 100 due to rounding
*Either respondent did not return survey or did not provide a response to specific questions

There was a modest increase with each data set with only 36.36% of respondents who thought their agency had the needed resources. That rate increased to 45.46% and 54.55% at the 4-week post-intervention and 8-week post-intervention respectively.
Finally, question 5 shown in Table 8 below assessed clinicians’ attitude pertaining to patient advocacy especially when there are differing provider views.

Table 8

*Percentage Comparison of KAP survey on Attitude of Community Mental Health Clinicians on question 5*

<table>
<thead>
<tr>
<th>Time of Survey</th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Don’t Know (%)</th>
<th>No Response (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>27.27</td>
<td>54.55</td>
<td>0.00</td>
<td>18.18</td>
</tr>
<tr>
<td>4-weeks post intervention</td>
<td>18.18</td>
<td>54.55</td>
<td>0.00</td>
<td>27.27</td>
</tr>
<tr>
<td>8-weeks post intervention</td>
<td>0.00</td>
<td>72.73</td>
<td>9.09</td>
<td>18.18</td>
</tr>
</tbody>
</table>

*Note: Total Number of participants (N)= 11*

Percentages may not add up to 100 due to rounding

*Either respondent did not return survey or did not provide a response to specific questions*

Gleefully, most project participants noted they had no problems advocating for the patient. This was the item with the biggest right shift with 72.73% of participants noting their willingness to be the patient’s advocate in the face of differing views with the advanced practitioner.
**Discussion**

Cancer poses a serious problem to people living with serious mental illness (SMI) contributing significantly to poor quality of life for this vulnerable population subgroup. This was a major theme in the pre-intervention, 4-week and 8-week post intervention knowledge, attitude and practice (KAP) surveys of frontline clinical staff at a community mental health care delivery agency involved in this project. The general consensus, however, was that there are feasible steps that can be taken to bridge the extant gap in cancer-related care disparity negatively affecting people living with SMI compared to the general population. The results of the knowledge surveys uncover a resounding support for a collaborative model of care in which interdisciplinary care teams maintain open communication and sharing information vital to patient-centered care.

On the attitude survey portion, the frontline clinical staff revealed potential barriers to effective collaboration across disciplines and facilities despite the understanding that a collaborative/coordinated approach to care would be ideal for positive cancer-related outcomes for people living with SMI. Four major themes emerged from the attitude survey results at all three data collection points. These included limited or in some cases absent psychosocial support for the patient, limited and in some instances absent interdisciplinary communication between providers and across facilities, time constraints on the path of clinicians and limited insight and unwillingness to engage with physical health care providers on the path of the patients.

Clinicians involved in this project outlined challenges they face in practice attempting to implement a collaborative approach of care. At all data collection time points, participants noted searing communication breaches worsened by a fragmented health care system in which care providers attempt to treat the patient as a sum of parts rather than the whole person with an
inseparable mind and body. A further complicating factor is the absence of appropriate psychosocial supports in place for people with SMI. The current health care system though attempting a culture shift is still lacking and still failing these individuals by increasing their care demands without a proportionate increase in capabilities. The findings in this project call for a care model that brings all stakeholders to the table of decision-making with the ‘whole’ patient at the epicenter of all actions initiated. A model that is flexible to the care goals of the patient and not what the “experts” believe will be in the best interest of the patient.

Three themes were uncovered in the literature review for this project. These were that there is an excess mortality among the serious mentally ill population, preventable physical health conditions account for this excess mortality rates and that a united front through coordinated care/collaborative care holds the promise to mitigate the extant adverse physical health events disproportionately affecting people living with SMI. The literature exposed disparities in mortality disproportionately affecting people with serious mental illness with cancer alone accounting for up to a 30 percent higher case fatality rate among adults living with serious mental illness (SMI) although their incidence is similar to that of the general population (Irwin, et al., 2014). This premise was echoed by participants in this current project overwhelmingly agreed that cancer poses a serious issue to people living with a serious mental illness. Despite differing opinions on the strategies to employ in improving physical health for individuals with serious mental illness, there is strong advocacy from the literature urging all important stakeholders to invest in initiatives which hold promise to improving physical health outcomes for individuals with severe mental illness (Clifton, 2016; Irwin, et al., 2014; Muliira, & D’Souza, 2016). The results of the surveys align with the latter portion of the above literature findings as community clinicians indicated that it is high time to break systemic/facility barriers
and have all hands on deck for united front through a collaborative approach to improving physical health care delivery to one of community’s most vulnerable population subgroup.

While the central theme in all the studies reviewed for this project appeared to pivot around interventions aimed at better care coordination effort, there seemed to be no consensus on the definition of collaborative care (care coordination) and no evidence of a superior strategy of care coordination. The evidence suggests that interventions can be designed to target members of the healthcare team, healthcare system and policy, family caregivers, and individual patients (Barley, et al., 2016). Similarly, the findings in this project pointed to interventions targeting health care delivery system at large, individual health care providers, health care facilities, patients, and family/social systems vital for the much-needed psychosocial supports invaluable for an effective integrative approach to cancer-related care in the setting of a serious mental illness. Nonetheless, there is evidence that care coordination is positively correlated with positive physical health outcomes for people living with SMI and improved likelihood of meeting their cancer care goals.

The theoretical framework harnessed for this project was the health promotion model (HPM) which is based on the philosophical claim of a reciprocal interaction world view underpinned by seven basic assumptions (Pender, 2011). Specifically, relevant to this project are the assumptions that Health professionals constitute a part of the interpersonal environment, which exerts influence on people through their life span and that self-initiated reconfiguration of person-environment interaction patterns underscores behavior change (Pender, 2011). Based on these assumptions, this project sought to draw ACCS clinical staff’s attention to the potential they have to initiate and/or foster collaboration between physical and mental health care teams involved in care for persons living with serious mental illness. This was accomplished by having
frontline clinical staff complete self-assessments of their knowledge, attitude and practice regarding cancer-related care for people with SMI. Particularly important was the clinicians’ attitude survey as their practice will inevitably be influenced by their attitude. For instance, at the pre-intervention and 4-week post-intervention survey points only 54.55% of project participants thought people with SMI could commit to the often-rigorous cancer-related treatments. But at the 8-weeks post-intervention survey point 72.73% of participants believed people with SMI could engage with cancer-related treatment. Conversely, 63.64% of respondents believed they could invest the time required for coordinating care for people with SMI while only 45.45% were optimistic they could commit to the amount of time required for care coordination at the 4-weeks post intervention mark and 54.55% at the 8-weeks post intervention mark. While it is not clear why these variations, it is possible that prior to the intervention clinicians were not fully aware of the time requirement for effective care coordination but after learning more about this during the educational sessions re-evaluated their comfort levels and reflect subsequent survey responses. Perhaps the most compelling findings was the improvement in clinicians’ assertiveness to advocate for patients. Pre-intervention and 4-week post-intervention results revealed 54.55% of participants would advocate for people with SMI even in the face of challenging and differing views with higher level care providers across different systems. But at the 8-week post-intervention data point, 72.73% of participants were assertive of patient advocacy which is an 18.18% increase. Therefore, it can be extrapolated that these staff group after completing the educational intervention reconfigured their attitude towards collaborative/coordinated care, thus, stand at a new vantage point with improved capacity to initiate and/or foster collaboration between physical and mental health care teams involved in care for persons living with serious mental illness.
This project harnessed the strategic roles of the Adult Community Clinical Services (ACCS) team and behavioral health community partners (BHCP) clinicians for the educational intervention given their key roles in liaising between interdisciplinary and intra-disciplinary team care providers. A major barrier to a broader range of the project implementation was difficulty in delineating a suitable time for the target staff group to come together given the often hectic/conflicting work schedules. However, the support of the administrative staff came to the rescue, at least to get the project off the ground and running. It was important to have a buy-in from the nursing director, the medical director and the ACCS director as they were able to encourage participation by frontline clinical staff.

The strategic alliance between this community mental health care delivery agency and other local health care delivery facilities in the area served as a major project facilitator. Such an alliance eases inter-professional communication. For this project, it was helpful for the DNP student as the project administrator to be able to learn from both medical oncology and mental health providers what their perceptions about collaborative care are while developing the curriculum for the educational intervention. Furthermore, project site does not only specialize in mental health care but seeks to foster physical wellbeing of the population it serves.

The sample size of 11 participants is quite small which could potentially call into question the generalizability of project findings to the project site. Nonetheless, this was not a major issue as there are four ACCS teams throughout the agency that are mirror images in terms of structure and function. All the clinicians on one of the four teams participated in this project. Additionally, all three nurses with the specialty behavioral health community partners (BHCP) team participated representing the non-ACCS team staff. In essence, all clinical teams were represented. Furthermore, the clinical staff that participated in this project work with
approximately 200 of the 450 adults served by the community mental health delivery agency. Bearing this in mind, this project is representative of the population is set out to study and improve practice processes for.

**Conclusion**

Despite similar rates of cancer incidence in the general population and among people living with serious mental illness, the mentally ill patients are more likely to die from their cancer. Such disparity in cancer mortality has been attributed to often a later diagnosis resulting in metastatic disease at diagnosis and less likelihood for people living with SMI to receive specialized cancer interventions. Several studies have revealed that deficiencies in the healthcare system, policy/community and even at individual patient levels often underscore inequities in cancer mortality for people with SMI.

Care coordination is key to care continuity especially when working with an interdisciplinary team of providers. Employing innovative strategies for successful integration of physical health monitoring in mental health settings is feasible and holds the promise to reduce the cancer mortality injustice against people living with SMI. Care coordinators, however, have to continually work at exploring potential barriers to successfully attending to the physical health needs of individuals with SMI within a mental health care setting. Interpersonal communication (interdisciplinary and intra-disciplinary) and information transfer underpin collaboration between primary care staff, secondary care staff and policymakers in developing an integrated approach to cancer care for people living with mental illness.

Care coordination interventions can be designed to target members of the healthcare team, healthcare system and policy, family caregivers, and individual patients. For this DNP Project, a quality improvement intervention employing fidelity consistent modification on the
patient navigator strategy weaved in an educational curriculum was implemented. At the core of the project was an educational intervention targeting community mental health care nurses. This staff group occupy the key position in liaising between physical health care providers, mental health care providers and patient/proxies in efforts to bridge the care gaps that may be contributing to suboptimal care for this vulnerable population subgroup. Such care coordination efforts have the promise to solidify interdisciplinary collaboration in care delivery and in effect improve physical health outcomes by facilitating the attainment of cancer care goals for people living with SMI.
References


Gronholm, P. C., Onagbesan, O., & Gardner-Sood, P. (2017). Care coordinator views and


Appendix A

Theoretical Framework: Nola Pender’s Health Promotion Model
Appendix B

Cost-Benefit Analysis

<table>
<thead>
<tr>
<th>Cost Analysis</th>
<th>Resources and Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Functional cost</strong></td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td>Personnel</td>
</tr>
<tr>
<td>Training/education</td>
<td>ACCS clinical staff</td>
</tr>
<tr>
<td>Preparation</td>
<td>DNP Student</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

| **Financial cost** |                      |
| Item              | Incurer | Cost   |
| Staff salaries ($33 x20) | NSMHA   | $660   |
| Snacks during training | DNP student | $200 |

<table>
<thead>
<tr>
<th>Benefits Assessment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCS clinical staff</td>
<td>Improved knowledge, attitude and practice pertaining to care of people living with serious mental illness</td>
</tr>
<tr>
<td>and organization</td>
<td>Improved productivity of clinical staff</td>
</tr>
<tr>
<td>DNP student</td>
<td>Knowledge acquisition and professional development</td>
</tr>
</tbody>
</table>
Appendix C

Project Timeline

Table 1

*Project Timeline*

<table>
<thead>
<tr>
<th>Tasks</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant recruitment: ACCS team nurses and specialty programs clinical staff</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email notification of upcoming KAP survey</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email KAP survey to participants with notice of when it is expected to be completed and sent back. In addition notification of upcoming training session.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collecting completed KAP survey tools from participants.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training Session 1</td>
<td></td>
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<td></td>
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<td>Presentation of projet results to mentor and NSMHA.</td>
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Appendix D

Knowledge, Attitude and Practice (KAP) Survey

**General:** Select the best response from the options provided

1. What is your highest level of education?
   a. Associate’s degree
   b. Bachelor’s degree
   c. Master’s degree or higher
2. How many years of work experience do you have?
   a. Less than 3 years
   b. 3-5 years
   c. 5-10 years
   d. More than 10 years
3. Have you ever received training on care coordination/collaboration?
   a. Yes
   b. No
4. Is care coordination part of your current job responsibilities?
   a. Yes
   b. No
5. Do you work with people who could benefit from recommended cancer screening or with a current cancer diagnosis?
   a. Yes
   b. No

**Knowledge**

1. Do you know the definition of a serious mental illness?
   a. Yes
   b. No
   c. Don’t know
2. How serious a problem do you think cancer poses to people living with a serious mental illness diagnosis?
   a. Very serious
   b. Same as for everyone else
   c. Somewhat serious
   d. Don’t know
3. Once diagnosed with cancer, a person with a serious mental illness should be managed by an interdisciplinary team of medical and psychiatric providers
   a. No, oncologists should focus on cancer care while psychiatric providers focus on mental stability/wellbeing
   b. Yes, a team approach is ideal
   c. It depends on the individual patient
   d. Don’t know
4. Cancer-related care is only appropriate when a person has an established cancer diagnosis
   a. Yes
   b. No
   c. Don’t know
5. Are there any steps that can be taken to reduce the chances of an individual dying from cancer?
   a. Yes
   b. No
   c. Don’t know

Attitude

1. In your opinion, can people living with serious mental illness commit to undergoing the often-rigorous cancer-related treatments?
   a. Yes
   b. No
   c. Don’t know
2. The length of time required to coordinate care for patients with complex needs would frustrate me
   a. Yes
   b. No
   c. Don’t know
3. It is difficult to form working relationships with interdisciplinary work groups
   a. Yes
   b. No
   c. Don’t know
4. Do you feel your organization has the necessary resources to support a person with serious mental illness and cancer?
   a. Yes
   b. No
   c. Don’t know
5. Would you have any concerns about advocating for specific needs of the persons with serious mental illness when the advance practitioners have differing views of the patient from you?
   a. Yes
   b. No
   c. Don’t know
6. What do you think are the challenges to delivering optimal cancer-related care to people living with serious mental illness?

Practice

1. In your experience, how is a person with a serious mental illness with a potential or actual cancer diagnosis managed?
2. What would you do if a person with SMI was unwilling to pursue recommended cancer-related care?
   a. Don’t know
   b. Seek legal pathways for treatment
   c. Respect their decision not to treat
   d. Continue to work with them to determine their care goals
3. Do you currently support persons with a current or suspected cancer diagnosis?
   a. Yes
   b. No
4. Whom do you involve in decision-making?
   a. Other healthcare professionals
   b. Patient/proxies/legal representatives
   c. Family caregivers
   d. All of the above
5. In your current role how often do you communicate with other providers regarding patient care needs?
   a. Daily
   b. 2-3 times per week
   c. Seldom
   d. I don’t have to
6. What is your preferred way of exchanging information with other providers?
   a. Telephone calls
   b. Emails
   c. Calls and emails
   d. Accompanying patients to their appointments and attending in-person meetings
   e. All of the above
   f. Other (please specify)
Appendix E

Support Letter

North Suffolk Mental Health Association

September 13, 2019

Terrie Black DNP, MBA, CRRN, FAHA, FAAN
University of Massachusetts - School of Nursing
651 North Pleasant Street, Amherst MA 01003

Dear Dr. Black:

I am writing this letter on behalf of Beriline Akwe, Doctor of Nursing Practice student at your School of Nursing student in her final year. My name is Manjola Ujkaj, MD, PhD, MBA and I am the Chief Medical Officer of North Suffolk Mental Health Association. I am excited to support Ms. Akwe’s quality improvement project entitled “Serious Mental Illness and the Continuum of Cancer Care”. Ms. Akwe’s project proposal to both assess and enhance our community mental health clinicians’ care coordination abilities in assisting persons with serious mental illness is ever more relevant as we enter a value-based care system. This quality improvement project is fully aligned with North Suffolk’s mission and vision and our specific strategic goal of delivering high-value high-quality care to our communities.

Our organization does not have its own Institutional Board Review given that research is not the scope of our organization. We typically rely on the sponsoring institution’s IRB and their judgement as far as the need for IRB approval or waiver. This IRB will be asked to serve as the IRB of record for this specific project. Therefore, your institution’s IRB is expected to review and approve the project proposal prior to implementation. Our organization will collaborate and support Ms. Akwe in the implementation of her project in order to meet the high standards of our community healthcare setting.

The site supervisor to this project will be myself, Manjola Ujkaj, MD, PhD, MBA. We have identified clinicians who will be able to participate in the educational intervention incorporated in the proposed QI project.

Sincerely,

Manjola Ujkaj, MD, PhD, MBA
Chief Medical Officer
Medical Director, Division of Ambulatory Services
North Suffolk Mental Health Association, Inc.
Appendix F

Institutional Review Board Human Subject Determination Form

UMassAmherst
Human Research Protection Office

Mass Venture Center
100 Venture Way, Suite 116
Hadley, MA 01035
Telephone: 413-545-3428
Email: humansubjects@ora.umass.edu

<table>
<thead>
<tr>
<th>OFFICE USE ONLY:</th>
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<tbody>
<tr>
<td>Received:</td>
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</table>

### Determination Form

_Determination of whether an activity constitutes Human Subjects Research as per the federal regulation (45CFR46)._

### INSTRUCTIONS:

1. **Faculty** should complete this form and submit with any applicable attachments to the Human Research Protection Office (HRPO) at humansubjects@ora.umass.edu.
2. **Students** should provide the completed application to their Faculty Sponsor for review and approval. The Faculty Sponsor should submit the form along with endorsement of the project or activity to the HRPO.
3. The HRPO will send you a notice of determination or will contact you, if needed, within three business days.

### 1. PROTOCOL DIRECTOR(S) (PD) INFORMATION:

<table>
<thead>
<tr>
<th>PD Name: Beriline Akwe</th>
<th>Faculty Sponsor Name: Terri Black, DNP, MBA, CRRN, FAHA, FAAN</th>
</tr>
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<tbody>
<tr>
<td>Department: Nursing</td>
<td>Department: Nursing</td>
</tr>
<tr>
<td>Affiliation: University of Massachusetts Amherst</td>
<td>Affiliation: University of Massachusetts</td>
</tr>
<tr>
<td>Email: <a href="mailto:bakwe@umass.edu">bakwe@umass.edu</a></td>
<td>Email: <a href="mailto:tblack@umass.edu">tblack@umass.edu</a></td>
</tr>
</tbody>
</table>

### 2. LOCATION:

**Please state the location where this study will take place (i.e., online study, UMass Amherst, etc.):** North Suffolk Mental Health Association, Chelsea MA- 02150

### 3. COLLABORATION:

**Please list collaborating institutions, if any, and describe their role:** North Suffolk Mental Health Association. This will be the site for implementation of the project.

### 4. PROJECT FUNDING:
Does external funding support this project?:

- No
  - Pending  * Please identify your anticipated funding source:
  - Yes  * Please identify your funding source:

* If funded, please attach a copy of any associated grant proposal(s).

5. PROJECT INFORMATION:

Project Title: Serious Mental Illness and the Continuum of Cancer Care
Project Purpose: To equip community mental health care clinicians with knowledge and skills to effectively function in the key role as care coordinators in the clinical-community relationship for adults living with serious mental illness.

Project Procedures:

Data collection: Participants will be contacted via email, phone calls, and in-person meetings and informed of the project as well as their roles. Using the knowledge, attitude and practice (KAP) survey tool information on the knowledge on extant inequities in cancer care for people living with serious mental illness, attitude towards ending such inequities and evidence-based practice to promote optimal standard of care through the continuum of cancer care delivered to persons living with a serious mental illness will be obtained 8 weeks before intervention.

Using the KAP survey tool, two post intervention surveys will be completed at 4 weeks post- and 8 weeks among the participants. The data of interest will be to assess any change in knowledge, attitude and skills among participants at 8 weeks and to assess change in behavior and practice at 8 weeks post intervention.

Methodological design: Quality improvement project employing an educational intervention. This will be a qualitative project design.

Data analysis: Due to the small size of the potential participant pool (currently less than 15 Adult Community Clinical Services team nurses and specialty programs clinical staff), the KAP survey data will be presented using basic descriptive statistics to describe the structured-response items. Corresponding pie charts and histograms will be generated from frequency table of participant responses. All analyses will be completed using 2018 Microsoft Excel program.
Please describe how you plan to use the study results (overall intent i.e., publication, presentation at conferences, etc.): This is a quality improvement (QI) project and the results of such a project are not intended for any publication. The information synthesized from the implementation of this project will be presented to the project site’s management team and at the University of Massachusetts Amherst’s scholarship day presentation.

Please describe the participant population (e.g., age range, gender, ethnic background, type of participant such as student, faculty, health care professionals, etc.), and approximate number of participants: This project will be implemented at the North Suffolk Mental Health Association (NSMHA), a community mental health care delivery organization dedicated to meeting the health needs of people living with serious mental illnesses in the Metro Boston area.

Participants: Approximately 13 participants including 8 nurses and 5 clinical Coordinators within NSMHA whose duties include care coordination for adults living with serious mental illness. The project will take place in one of the conference rooms either at the agency’s administrative building located at 301 Broadway Chelsea, MA or the agency’s training center located at 37 Hawthorne Street Chelsea, MA.

Please describe your recruitment procedures: All eligible potential participants will be contacted initially via email and informed of this project and their potential roles. Follow-up email and in-person contacts will be made to enlist participants. All potential participants will be made aware of the fact that their participation is voluntary during the recruitment process.

6. ATTACHMENTS
   ✓ I have included copies of any project proposals (e.g., Honors or MA Theses, DNP projects, Dissertation Prospectus, etc.), as well as surveys/questionnaires, interview questions, etc. with this form OR this is Not Applicable to this project.
7. PD RESPONSIBILITIES AND ASSURANCES:

- ✓ I certify that the information provided in this determination form and all attachments is complete and accurate.
- ✓ I certify that the proposed project has not yet been done, is not currently underway, and will not begin until IRB determination and/or approval has been obtained.

8. PD SIGNATURE(S):

| Name: Beriline Akwe | Date: 9/15/2019 |

OFFICE USE ONLY:

<table>
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<tr>
<th>The project does NOT need IRB review.</th>
<th>Project DOES need IRB review.</th>
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<td>Date: ___________</td>
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<tr>
<td>Initials: ___________</td>
<td>Initials: ___________</td>
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- ☐ Not Human Subjects Research (NHSR)
  
  Determination based on the following rationale:
  
  1. ☐ The proposed project does not involve research that obtains information about living individuals [45 CFR 46.102(f)].
  2. ☐ The proposed project does not involve intervention or interaction with individuals OR does not use identifiable private information [45 CFR 46.102(f) (1), (2)].
  3. ☐ The proposed project does not meet the definition of human subject research under federal regulations [45 CFR 46.102(d)].

<table>
<thead>
<tr>
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<tbody>
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<td>Review Type:</td>
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<td>1. ☐ Full Board</td>
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<tr>
<td>2. ☐ Expedited</td>
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<tr>
<td>3. ☐ Exempt</td>
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<tr>
<td>University of Massachusetts, Amherst (UMA) Faculty/staff/students NOT engaged in Human Subjects Research.</td>
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<tr>
<td>Determination based on all criteria below being met:</td>
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<tr>
<td>- UMass Amherst faculty/staff/students will not be involved in a direct intervention or interaction with human subjects of research.</td>
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<tr>
<td>- UMass Amherst faculty/staff/students will not obtain identifiable private information for the research.</td>
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<tr>
<td>- UMass Amherst faculty/staff/students will not be involved in the consent process.</td>
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<tr>
<td>- All data will either be de-identified (no-one is able to link the information back to identifiers) OR coded (key linking participant data/specimen exists but the key to the code will never be released to UMass Amherst Faculty/Staff).</td>
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**NOTES:**
Appendix G

PowerPoint Presentation on Care Coordination

Serious Mental Illness and Continuum of Cancer Care coordination

Berilne Akwe
University of Massachusetts Amherst

Serious Mental Illness and Continuum of Cancer Care coordination

Berilne Akwe
University of Massachusetts Amherst
Objectives

- For community mental health nursing and clinical staff to develop awareness of personal knowledge, attitude and practices regarding interdisciplinary communication.
- To establish clear communication priorities for community mental health workers engaged in care coordination efforts for adults living with a serious mental illness.
- To introduce and maintain consistent use of a care coordination measurement tool
- To learn skills on how to connect and engage with external providers for each individual patient.

Introduction

- Background
  - Definition of serious mental illness (SMI)
  - 4.2% or 10.4 million adults 18 years and older lived with SMI in 2016 in the U.S.
  - Excess mortality among individuals living with SMI, dying up to 20 years younger than the general population
  - Excess mortality has been attributed to preventable physical conditions: cancer is the second leading cause of death
  - There is evidence of suboptimal care in the areas of health promotion and physical health care among the SMI population subgroup

National Institute for Health and Care Excellence ([NICE], 2018)
Why worry?

- Despite similar cancer incidence in the general population and among people living with serious mental illness (SMI), the latter group has higher mortality rates in large part due to care fragmentation.
- Brainstorming exercise
  - What are some barriers to taking on an interdisciplinary team approach to care?
  - How can we change this narrative?

Evidence-Based Practice

- Systematic review of collaborative care approaches for people with severe mental illness – 2013, Conchrane report available at https://www.cochranelibrary.com/cdissr/doi/10.1002/14651858.CD009531.pub2/full?highlight=Abstract%7Ccollaborative%7Ccollaborat%7Cmodel%7Ccollaborative%7Ccare
Intervention

- A collaborative approach to the continuum of cancer care
  - Interdisciplinary and intra-disciplinary team approach
- Fidelity consistent modification of patient navigator strategy in care delivery
  - Community-based patient care navigators/care coordinators
- Communication
  - Interpersonal communication (interdisciplinary and intra-disciplinary communication)
  - Information transfer
- Care Coordination Measurement Tool (CCMT)

What?
Collaborative Care Model

- Patient-Centered Team Care: Collaboration between interdisciplinary providers and shared care plans
- Population-Based Care: Jointly track every patient to ensure no one falls through the cracks
- Measurement-Based Treatment to Target: Treatment plans should clearly state clinical and personal treatment goals and plan should be adjusted to meet newly identified needs
- Evidence-Based Care: Treatments should be backed by credible research evidence
- Accountable Care: Quality of care and clinical outcomes should be the basis for compensation and not merely volume of care

(University of Washington, Psychiatry & Behavioral Sciences Division of Population Health, 2019)
How?
Navigate

- Be a fierce patient care navigator
  - What do we mean by being a navigator? An individual who provides guidance to patients as they go through the health care system.
  - Be flexible in your role yet be ready to connect patient to other needed resources
  - Navigator roles are diverse including but not limited to explaining treatment and care options, accompanying patients to appointments, communicating with their health care teams, assisting caregivers, managing medical paperwork, education, schedule screening tests, address barriers to accessing care, providing follow-up education, etc.

  American Cancer Society, 2019

How?
Communicate

- Be intentional in your communications
  - Communication is essential in informing and influencing health care decisions and actions
  - Be careful, don’t be the boy who cried wolf!
  - Interdisciplinary and intra-disciplinary communication
  - Information sharing and information transfer
How?
Communicate

- Interdisciplinary and interdisciplinary communication
  - Know who you want to reach and the purpose of the communication
- Messenger, message, channel, receiver, and feedback model
- Information sharing and information transfer
  - Treatment plans, discharge/visit summaries, medication lists, laboratory/imaging results
- Keep all stakeholders informed to avoid duplication of services and encourage reinforcement of treatment plan

Care Coordination Measurement Tool
References


References

# Appendix H

## Care Coordination Measurement Tool (CCMT)

**CCMT 2017 Version 1.1**

<table>
<thead>
<tr>
<th>Patient Level</th>
<th>Care Coordination Needs</th>
<th>Activity to Fulfill Needs</th>
<th>Outcomes Occurred</th>
<th>Outcomes Prevented</th>
<th>Time Spent</th>
<th>Staff</th>
<th>Clinical Competence</th>
</tr>
</thead>
</table>
| 1             | 1. Child/Youth with Special Health Care Needs - with complicating family/social issues  
2. Child/Youth without Special Health Care Needs - with complicating family/social issues  
3. Child/Youth with Special Health Care Needs - without complicating family/social issues  
4. Child/Youth without Special Health Care Needs - without complicating family/social issues  
5. Interpreter needed  
6. Interpreter not needed | 1a. Pre-vist review  
2a. Patient education/anticipatory guidance  
3a. Communication with family (via telephone/email)  
4a. Communication with an internal clinic team member (via telephone/email/in-person)  
5a. Communication with an external health care provider, hospital, or care team member (via telephone/email)  
6a. Telehealth encounter  
7a. Update of clinical chart (electronic medical record system)  
8a. Communication with a community agency/educational facility/school (via telephone/email)  
9a. Reviewed labs, diagnostic tests, notes, IEP  
10a. Form processing (school, camp, etc.)  
11a. Research of clinical/medical question  
12a. Development/modification of care plan  
13a. Referral management or appointment scheduling  
14a. Prescription/Supplies in order placement  
15a. Secured prior authorization for patient  
16a. Connection to family navigator/family support group | 4a. Medication-related discrepancies recognized  
5a. Medication treatment adherence  
6a. Non-medication-related discrepancies resolved, adherence to care plan  
7a. Ability for family to better manage at home care and treatment due to education/guidance provided virtually  
8a. Modification of medical care plan (testing, medication, etc.)  
9a. Modification of care plan (non-medication component) to reduce unnecessary family burden/stress; increase adherence to care plan  
10a. Scheduled necessary clinic visit (for THS clinic)  
11a. Specialty referral  
12a. Necessary OK referral  
13a. Referral to community agency  
14a. Prior Authorization completed  
15a. Prescription/medicinal supplies ordered | 5a. Abrupt discontinuation of medication by family/caregiver due to prior authorization requirement  
6a. Non-adherence to treatment plan due to misunderstanding between care team and family  
7a. Medication error  
8a. Presence of adverse medication side effects unnoticed by family/caregiver  
9a. Unnecessary clinic visit [for THS clinic]  
10a. Unnecessary specialist visit  
11a. Missed clinic visit  
12a. MD/IP call to the family  
13a. Unnecessary lab/test [prevent or duplicative testing] | 6a. less than 5 minutes  
7a. 5-9 minutes  
8a. 10-15 minutes  
9a. 15-20 minutes  
10a. 20-30 minutes  
11a. 30-45 minutes  
12a. 45-60 minutes (please note actual time) | 7a. RN  
7b. NP  
7c. PA  
7d. MA  
7e. Administrative  
7f. Care Coordinator  
7g. Social Worker  
7h. Physician | 8a. CC required  
8b. CC not required |

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