Study Protocol and Statistical Analysis Plan

Facilitating Emerging Adult Engagement in Evidence-Based Treatment for Early Psychosis through Peer-Delivered Decision Support

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Study Protocol

1) Abstract of the study

The purpose of this research is to conduct a pilot study of a decision support intervention for young adults with early psychosis who are participating in early intervention services, also known as coordinated specialty care (CSC).

We will utilize a single-group, pre-post, convergent mixed methods design to explore whether and how the intervention addresses decision-making needs. The impact of the intervention on secondary outcomes (e.g., engagement in the program) will also be assessed. Additionally, we will evaluate the feasibility of research and intervention procedures, and the acceptability of information and support from the interventionist.

2) Protocol Title

Facilitating Emerging Adult Engagement in Evidence-Based Treatment for Early Psychosis through Peer-Delivered Decision Support Part 2

3) Sponsor / Funding

This study is funded by the National Institute of Mental Health under award number K08MH116101

4) IRB Review History

This study is a follow-up study to another protocol previously reviewed by the Temple IRB (protocol # 25075).

5) Investigator

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6) Objectives

The purpose of this study is to evaluate a decision support intervention with emerging adults participating in CSC services. A peer specialist (i.e., trained mental health provider with lived experience of a mental health

condition) or other staff person at the participating CSC programs will serve as “decision coaches” to participants to help them make decisions about their care. It is hypothesized that participants will experience a reduction in decision-making needs after participating in the intervention, and that study and intervention procedures will demonstrate feasibility and acceptability.

7) Background

Service disengagement among emerging adults with early psychosis (i.e., premature treatment drop-out) is a prevalent problem, with recent estimates between 20-40%. This is particularly concerning given that service disengagement during early psychosis is a risk factor for relapse, persistent symptoms, and poorer prognosis. Further, as emerging adulthood is characterized by key developmental milestones, young people who do not receive appropriate services during this time are at greater risk for health problems and poorer functional outcomes as they age. As such, service disengagement is a performance indicator for evaluating the quality of early psychosis care. While some CSC programs demonstrate relatively low rates of disengagement, others using similar approaches have had more retention difficulties, suggesting that current strategies are not sufficient to address disengagement in all contexts. Especially needed are interventions that promote early engagement (i.e., help-seeking, appointment attendance, engagement in treatment processes) to foster long-term retention and, thus, better outcomes.

Research suggests that decision support may be a particularly efficacious approach for increasing service engagement. First, a number of modifiable treatment decision-making needs (e.g., knowledge deficiencies, lack of social support) contribute to decisional conflict, which, in turn, is associated with discontinuance of chosen options and decisional regret. Second, studies demonstrate that decision support interventions that address these decision-making needs are associated with increased service engagement.

The effectiveness of decision support sets the stage for the development and preliminary analysis of a decision support intervention to facilitate treatment decision-making and enhance early CSC engagement.

8) Setting of the Human Research

Recruitment will occur at Horizon House, Inc., CMSU Behavioral Health and Developmental Services (CMSU), and On My Way CSC programs (i.e., PEACE, CMSU, On My Way) that serve emerging adults with early psychosis. Participants will receive the study intervention at the CSC program from which they were recruited. Research interviews will occur at Temple University, in a conference

room at 1700 N. Broad, or at an agreed upon location at the CSC programs.

In the event that in-person interactions with participants are prohibited due to COVID-19, recruitment, research interviews, and intervention meetings will be conducted remotely via telephone or videoconference (depending on participants' preferences). We will use a HIPAA-compliant version of Zoom for all videoconference meetings.

9) Resources Available to Conduct the Human Research

We will recruit and collect data from 20 individuals enrolled in the CSC programs who will participate in the intervention. Given that this study's purpose is to collect preliminary data about the intervention's impact on decision-making needs, the sample size is based on pragmatics rather than power, consistent with recommendations for pilot studies. We used the current rate of enrollment at the CSC program and a conservative estimate of study enrollment of 40% to arrive at the projected N.

Research staff for this study include the research assistant, the decision coaches at each of the CSC programs, and PI. The research assistant will dedicate at least 20 hours per week to recruitment and data collection during the study period. The decision coaches are also expected to dedicate at least 10 hours per week delivering the intervention, documenting contacts with participants, and participating in supervision via videoconference with the PI. The PI will dedicate at least 10 hours per week overseeing and managing the implementation of the study, supervising project staff, analyzing data, and completing other project tasks as needed.

Research staff for this study have received extensive training, including completion of the CITI social and behavioral health human subjects training. During weekly staff meetings, the research team will discuss ongoing issues regarding the research to ensure procedures are followed and issues are addressed appropriately.

Research staff have private, furnished office spaces at Temple University with access to Internet jacks, telephones, lockable file cabinets, teleconference equipment, and standard office equipment and supplies to facilitate research-related activities.

The CSC programs are equipped with a large workspace for employees that includes Internet jacks, telephones, lockable file cabinets, and standard office equipment and supplies. They have conference areas with teleconference capability that will be available for recruitment as well as private rooms that will be available for intervention meetings, telephone calls, and research interviews with participants.

10) Prior Approvals

Review of this research is also required by the IRB for the City of Philadelphia.

11) Study Design

a) Recruitment Methods

Recruitment will occur at Horizon House, Inc., CMSU Behavioral Health and Developmental Services, and On My Way's programs (i.e., PEACE, CMSU, On My Way) that serve emerging adults with early psychosis. Recruitment strategies that will be utilized to enroll participants in the study include distributing recruitment materials (e.g., study flyers, recruitment video), and completing site presentations. Recruitment materials will be provided to study sites for distribution to potential participants, and will be posted to our lab website and social media platforms. Additionally, we will also collaborate with CSC staff members who will provide information about the study to potentially eligible individuals, and the research assistant will conduct follow ups with those interested in participation for screening.

b) Inclusion and Exclusion Criteria

The research assistant will determine eligibility in person at the CSC programs or over the telephone/videoconference by using a screening questionnaire with study criteria questions. Screenings conducted at the CSC programs will be conducted in a private room. Screen failures will be notified that they are ineligible for the study, but that this will not have an impact on their ability to continue to access CSC services. All information/materials collected during screening will be stored in a locked office in a locked filing cabinet and within password-protected and encrypted electronic files.

Inclusion criteria are: 1) 18-30 years of age; 2) experiencing early psychosis, defined as psychosis lasting 18 months or less between the time when threshold symptom criteria were reached (as determined by the admitting CSC program assessor) and the date of CSC program enrollment; 3) able to speak/understand English; 4) able to provide informed consent as assessed by research staff; and 5) enrolled in the CSC program for any period of time.
Exclusion criteria are: having a legal guardian or diagnosis of dementia, delirium, or intellectual disability as determined by the admitting CSC program psychiatrist. No individuals from special populations will be included.

c) Local Number of Subjects

The research assistant will recruit 20 individuals enrolled in the CSC programs to participate in the decision support intervention.

d) Study Timelines

Participants will complete two research interviews (approximately 1.5 hours for the baseline assessment and 2 hours for the post-intervention assessment). Between these two research interviews, they will participate in the study intervention on a weekly or biweekly basis for approximately 1-3 months, and repeat one of the measures that was completed during the baseline assessment (which is expected to take about 10 minutes) (see Procedures section below). Intervention meetings are expected to last 45-60 minutes each. We expect to enroll 2-3 participants per month, and estimate that recruitment and data collection will end in January 2022. Data analysis and reporting is expected to be completed by April 2023.

e) Study Endpoints

The primary endpoint is participants' treatment decision-making needs, as assessed by the Decisional Conflict Scale (DCS) and a qualitative measure designed to parallel items from the DCS.

We will also assess feasibility of study and intervention procedures by tracking data pertaining to recruitment, retention, and assessment procedures using CONSORT guidelines, and data related to implementation of the intervention (e.g., fidelity, number and duration of intervention meetings by participant, implementation barriers and facilitators). These data will be collected from fidelity checklists and contact notes completed by the decision coach.

Acceptability of the study intervention will be assessed via quantitative and qualitative questions about participants' level of satisfaction and experiences with the intervention. Exploratory, secondary outcomes/measures include:

Multidimensional Scale of Perceived Social Support: This scale assesses perceived adequacy of support in the following areas: family, friends, and significant other.

Control Preference Scale: This measure assesses patients' preferences for participation in treatment decision-making.

Perceived Involvement in Care Scale: This scale measures perceived clinician facilitation of patient involvement in decision-making, perceived level of information exchange between patient and provider, and perceived level of the patient's own involvement in medical decision-making.

Birchwood Insight Scale: A scale that measures dimensions of insight in the following areas: ability to re-label symptoms, awareness of mental illness, and recognition of a need for treatment.

Recovery Assessment Scale: This scale measures personal recovery and consists of 5 factors: personal confidence and hope, willingness to ask for help, goal and success orientation, reliance on others, and not being dominated by symptoms.

Internalized Stigma of Mental Illness Scale (ISMI): This measure is designed to assess individuals' experience of stigma related to mental illness.

Empowerment Scale: A scale that measures empowerment, control, self-determination, and decision making in the recovery process.

Decision-Self-Efficacy Scale: This measure assesses confidence in making an informed treatment choice.

Service Use and Resources Form (SURF-M): SURF-M is a self-report measure that assesses service use over the past month from diverse sources of inpatient and outpatient care including antipsychotic medication with daily doses, and other psychotropic and non-psychotropic medication.

Brief Adherence Rating Scale (BARS): This scale assesses antipsychotic medication adherence of patients in outpatient settings.

Intent to Attend Measure: A measure that assesses participants' intention to engage in the coordinate specialty care program.

Service Engagement Scale: A clinician-rated scale that measures engagement in community mental health services.

Working Alliance Inventory: This 36-item scale assesses the strength of the therapeutic alliance with participants' therapists in three domains: agreement on goals, assignment of tasks, and the development of bonds.

Intentional Peer Support Scale: A scale designed to measure the relationship between the decision coach and patient.

Satisfaction with Decision Scale: This scale assesses a patient's satisfaction with a health care decision.

Procedures Involved in the Human Research

Screening and recruitment will be ongoing through January 2023. Participants will complete a baseline assessment with the research assistant prior to engaging in the decision support intervention. During the study period, participants will engage in the experimental decision support intervention and will maintain access to other services and supports normally available to them through the CSC program (e.g., medication, therapy). The PI will assess when the participant has determined what

decision they would like to work on with the decision coach via contact notes and supervision sessions. The PI will notify the research assistant when this determination has been made, and the research assistant will contact the participant at that time to have them complete the Decisional Conflict Scale a second time. Participants will not be offered additional payment for completing this measure at this time point. Upon completion of the intervention, participants will complete a post-intervention assessment with the research assistant. At post-intervention, participants will be asked to provide permission to audio-record responses to qualitative questions that are part of the qualitative assessment of decision-making needs and acceptability measure. Participants must provide permission to audio-record these portions of the research interview in order to participate in the study. At baseline and post-intervention, the study team will reach out to participants' psychiatrists/therapists in order to have them complete a questionnaire (Service Engagement Scale). A schedule of assessments collected at each time point is presented in Table 1.

	Table 1. Assessment Schedule		
	Baseline	During Intervention	Post-Intervention
Demographics/Clinical characteristics	X		
Multi-dimensional Scale of Perceived Social Support	X		X
Control Preference Scale	X		X
Perceived Involvement in Care Scale	X		X
Birchwood Insight Scale	X		X
Recovery Assessment Scale	X		X
Internalized Stigma of Mental Illness Scale	X		X
Empowerment Scale	X		X
Decision Self-Efficacy Scale	X		X
Service Use and Resource Form for Monthly Items	X		X

Brief Adherence Rating Scale	X		X
Intent to Attend Measure	X		X
Service Engagement Scale	X		X
Decisional Conflict Scale	X	X	X
Working Alliance Inventory	X		X
Intentional Peer Support Scale			X
Satisfaction with Decision Scale			X
Qualitative Measure of Decision-Making Needs			X
Acceptability Measure			X

Decision coaching, a process of non-directive support by a trained but neutral individual, is used to facilitate treatment decision-making through assessment of decision-making needs and delivery of specific intervention components to address them. These components may include facilitating access to information, clarifying values, helping a person obtain the needed support to make a decision, and screening for implementation barriers. Following standards of practice for decision coaching, the decision coach will evaluate individuals' decision-making needs and provide coaching tailored to these needs via telephone/videoconference or in face-to-face meetings. Individuals will be invited to speak with the decision coach as long and as many times as are necessary to make a treatment decision; however, it is expected that participation in the intervention will last approximately 3 months and it is suggested that individuals participate in the intervention on a weekly or biweekly basis. Participants will be asked to provide permission to audio record intervention meetings so that fidelity may be assessed. Participants may opt out of audio recording of intervention sessions and will still be able to participate in the intervention.

The research assistant will routinely administer an adverse events checklist at each study visit, and the decision coach will monitor for adverse events during each intervention meeting. If an adverse event occurs during a participant's participation in the study, the interventionist or research assistant will facilitate participants' access to prompt medical or professional care as appropriate, document the event on an adverse event reporting log, and immediately submit documentation of the event to the IRB and NIMH as appropriate.

f) Data Management

Continuous and normally distributed variables will be summarized with means and standard deviations. Dichotomous variables will be summarized with frequencies and percentages.

To examine within-group differences in quantitative measures pre- and post-intervention, we will conduct paired samples t-tests.

Audio-recorded responses to qualitative questions about decision-making needs will be professionally transcribed verbatim. The research assistant and PI will analyze transcripts using the Constant Comparison Method. The parallel structure of the qualitative interview to the Decisional Conflict Scale will enable quantitative and qualitative data to be merged and reported through narrative weaving. Integration of these data will provide a more nuanced understanding of whether and how the intervention addresses decision-making needs than use of either type of data alone, and will be most informative for intervention refinement. Should quantitative and qualitative analyses yield discrepant findings, we will assess reasons for conflicting results (e.g., low power, question structure/content) and revise procedures accordingly.

Audio-recorded responses to qualitative acceptability questions will also be professionally transcribed verbatim. The research assistant and PI will analyze transcripts using the Constant Comparison Method. As open-ended questions do not parallel quantitative acceptability questions, acceptability data will be interpreted and reported contiguously.

Steps that will be taken to secure the data are described in the Privacy and Confidentiality section.

g) Withdrawal of Subjects

Participation is voluntary and there is no penalty if an individual chooses not to join the research study; their services will not be affected. If an individual enrolls in the study and later chooses to withdraw from the study, they may do so at any time without any penalty to them. They can simply withdraw from the study by telling the research staff in person when they are at study sites, or by contacting research staff by telephone or email.

Participants will be withdrawn from the study if they appear to be under the influence of alcohol or illegal drugs or are hostile to research staff. In such cases, they will not be paid for their time.

12) Risks to Subjects

During the research interviews and participation in the study intervention, topics may come up that are distressing or triggering, including diagnoses, symptoms, and negative treatment experiences. We will attempt to

minimize this risk by detailing what topics will be covered before participants begin the interview and intervention.

Participants may become fatigued or uncomfortable during research interviews. We will attempt to minimize these risks by allowing participants to schedule the remainder of the interview/assessment for another time, and by informing them that they may omit questions, or simply discontinue the interview/assessment, at any time.

In the event that a participant has been harmed by the research, we will facilitate prompt receipt of their psychiatric or medical care. However, participants will be responsible for the costs of such psychiatric or medical treatment, directly or through medical insurance and/or other forms of medical coverage. Temple University and research staff will not be responsible for the cost of this treatment. This has been made explicit on the informed consent forms.

13) Potential Benefits to Subjects

There is no direct benefit from taking part in the research other than expanding knowledge that may inform policies and practices at the societal level.

14) Privacy and Confidentiality

PHI collected during the study is limited to participant's self-reported contact information (e.g., name, address) and psychiatric diagnosis. PHI will not be disclosed, except as may be required by law. Any information about child abuse or intent to harm self or others will be reported to authorities, as required by law. Research staff will be the only people with access to this data, with the exception of authorized representatives of the Temple University or Philadelphia Institutional Review Board (IRB), the National Institute of Mental Health (the study sponsor), and the Office of Human Research Protections (OHRP).

Completed interviews will contain a coded identification number to prevent loss of confidentiality, and any identifying information will be removed from interview transcripts. Confidentiality of data files will be achieved by separating code numbers from individual identifying information. Information taken about participants will only be kept electronically in encrypted, password protected files and hard copies will be stored in locked cabinets in a locked office. Data sources containing identifiers (i.e., regulatory documents such as the eligibility screener and contact information form, clinical characteristic form) will always be kept separate from other research data in encrypted, password-protected files. Participant files will only be made available to personnel involved in the study through the use of access privileges and passwords. All published reports will contain data reported either in aggregate form (where no individual responses

can be identified), or in composite individual examples that are constructed so that identification is impossible. Individual examples or quotations that may be presented in published reports will use pseudonyms, so that participants' identity will be protected. Audio recordings will be secure and confidential per the transcription service provider's non-disclosure agreement and encryption software. Audio-recordings will be immediately deleted from the recorder after successful uploading to the transcription provider's secure site. All other data collected from this study will be kept for 7 years after the last publication.

In accordance with study sponsor guidelines, this study will be registered and de-identified results information (including participant flow, demographic and baseline characteristics, outcomes and statistical analyses, adverse events, the protocol and statistical analysis plan, and administrative information) will be submitted to ClinicalTrials.gov.

15) Economic Burden to Subjects

There are no costs to participants associated with participation in this research study.

16) Subject Compensation

Participants will receive $20 for completing the baseline assessment and an additional $30 for completing the post-intervention assessment. Participants will be paid via electronic gift cards. Upon each payment, they will sign a receipt form to document that they were paid.

17) Consent Process

A particular issue related to our studies is that the research literature has long suggested that persons diagnosed with schizophrenia have cognitive impairments and that this is associated with impaired ability to make informed consent decisions. This has led some to conclude that people with psychiatric impairments cannot provide informed consent and therefore should not participate in research. Peer advocates have criticized this perspective as taking away their rights to participate in research. Carpenter et al. (2000) also found evidence, however, that more exhaustive consent procedures could enhance ability to consent. This educational remediation approach included multiple sessions where information was provided multiple times, questions were asked, and potential participants were prompted to help them fully understand the protocol. Our consent procedures will utilize these methods in addition to the INVESTIGATOR GUIDANACE: Informed Consent (HRP-802).

Our process for ensuring that all study participants provide fully informed consent will involve the following steps -- The first line of screening will be through contact between the research assistant or PI and the potential

participants. The research assistant or PI will meet with potential participants in a private room at Temple University or at the CSC programs, or via telephone or videoconference. The research assistant or PI provides a brief overview of the study and makes an initial assessment of their ability to understand and recall the following issues: what participants are asked to do, the voluntary nature of the study, data collection procedures, and nature of confidentiality. An interview is scheduled with those who are able to recall the information provided and demonstrate an understanding of all areas. Those who have problems with the initial assessment are asked if they can be contacted at a later time to discuss the project. A second assessment is conducted with the research assistant or PI. This assessment will assess recall from the previous conversation. Perfect recall is not expected. Poorly recalled information will be targeted during the review of the informed consent form and study procedures. The research assistant or PI will spend up to an hour with potential participants reviewing the consent forms. All forms are read aloud with the potential participant and they are again asked to recall information about the study. Prompts are given to facilitate recall. If the potential participant is able to recall pertinent information about the study without prompts, they are viewed as being able to give informed consent and will proceed with signing the consent form. If the research assistant or PI obtains informed consent from participants via telephone/videoconference, the participant will electronically sign the consent form in RedCap. All consent forms will be maintained in the case file along with all identifying information in a locked cabinet that is kept in a secure office.

18) Sharing of Results or Incidental Findings with Subjects

After qualitative interview transcription, participants will be offered the opportunity to review their interview transcripts in order to ensure that meaning and ideas are accurately represented. Transcript copies will be emailed to participants via TUSafesend (a Temple University resource that provides a secure method for transferring files containing confidential information) or mailed to participants in opaque envelopes marked “confidential” (depending on the participant’s preference). On a separate page, participants will be asked to provide written feedback regarding whether the transcripts match their experience, and will be invited to make changes or additions to their statements. Participants will be provided with instructions for how to return comments via TUSafesend. Pre-paid return postage for mailed transcripts will be provided for participants to return comments to the researchers if they so choose. The contact information of the research assistant will also be provided in case participants have questions or prefer to offer their feedback verbally. We will allow two weeks for participants to return feedback before proceeding with further analysis. Participants will not receive additional compensation for providing this feedback.

Statistical Analysis Plan

Demographic and clinical variables will be summarized with means and standard deviations. Dichotomous variables will be summarized with frequencies and percentages. Parameter estimates will be bound by 95% confidence intervals. Analyses will be conducted using SPSS Version 24. Feasibility data will also be reported using descriptive statistics.

Mixed Methods Analysis. Quantitative acceptability data will be reported using descriptive statistics. Per qualitative analysis recommendations,[71] open-ended acceptability questions will be audio-recorded and professionally transcribed verbatim. The research assistant will proofread transcripts, making notes regarding participants' experiences with the intervention in each interview. The research assistant and PI will then use notes to create an initial draft of coding categories. Then, using the Constant Comparison Method,[72] the research assistant and PI will independently code each transcript and discuss differences in coding to consensus, which could involve creating new codes or collapsing existing ones. After refining the code list, the final coding of each interview will be double-checked for accuracy. Data analysis will be facilitated using NVivo software. Member checking will be accomplished by inviting participants to review and provide feedback on their interview transcripts and on the codes developed. Initial analysis from the first three interviews will be conducted to inform subsequent data collection. As open-ended questions do not parallel survey questions, acceptability data will be interpreted and reported contiguously.[103] Findings will inform intervention refinement for the R01.

To examine within-group differences in quantitative decision-making targets pre- and post-intervention, we will conduct a paired samples t-test using DCS Factors Contributing to Uncertainty subscale scores. Responses to open-ended questions about decision-making targets will be analyzed qualitatively using the same procedure described previously. The parallel structure of the qualitative interview to the DCS will enable quantitative and qualitative data to be merged and reported through narrative weaving.[103] Integration of these data will provide a more nuanced understanding of whether and how the intervention engages decision-making targets than use of either type of data alone, and will be most informative for intervention refinement. Should quantitative and qualitative analyses yield discrepant findings, we will assess reasons for conflicting results (e.g., low power, question structure/content) and revise procedures accordingly for the R01 study.[103]