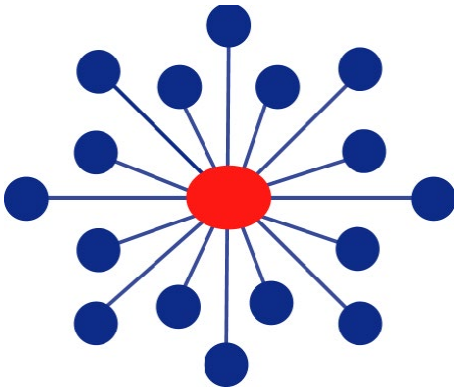

Suicide Prediction and Prevention for People at Risk for Opioid Use Disorder Protocol

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Supplement to COMPUTE 2.0

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A. List of Abbreviations

Abbreviation	Definition
BPA	Best Practice Advisory
CDS	Clinical Decision Support
CSSRS	Columbia Suicide Severity Risk Scale
CTN	Clinical Trials Network of NIDA
DSMB	Data Safety Monitoring Board
ED	Emergency Department
EHR	Electronic health record
IRB	Institutional Review Board
MHRN	Mental Health Research Network
NIDA	National Institute on Drug Abuse
NIH	National Institutes of Health
OUD	Opioid use disorder
PCC	Primary care clinician

B. Summary

This study integrates the Mental Health Research Network (MHRN) suicide risk models into Opioid Wizard, an electronic health record (EHR) clinical decision support (CDS) to identify and treat patients at high risk of opioid use disorder (OUD)/overdose or diagnosed with OUD, to alert primary care clinicians (PCCs) to patients at elevated risk for suicide and guide them through structured suicide risk assessment. In both intervention and control clinics, suicide risk scores will be calculated for all Opioid Wizard-eligible patients and relevant EHR data to inform analyses will be archived. In intervention clinics, Opioid Wizard will alert PCCs to Opioid Wizard-eligible patients who are at increased risk of suicide and coach them through use of the Columbia Suicide Severity Risk Scale (CSSRS), a structured tool in the EHR that will help PCCs assess immediate suicide risk. Based on the resulting CSSRS score, Opioid Wizard will provide EHR links for risk- based referrals and follow-up recommendations, including care as usual, routine or emergent referral to behavioral health, or transportation to the emergency department (ED) for further assessment. Primary outcome measures include completion of CSSRS assessments for at-risk patients and patient engagement in outpatient mental health care.

C. Background and Rationale

Two public health issues of paramount importance -- suicide and opioid overdose -- have substantial overlap. Depression and other mental health conditions increase the risk of both opioid use disorder (OUD) and suicide, and people with OUD are more likely to have depression and other mental health conditions. In fact, the risk of both suicide and opioid overdose is likely highest in those with both OUD and mental health diagnoses.[1] More than 48,000 people died of suicide and 46,000 of an opioid overdose in the US in 2018, and over 40% of suicide and overdose deaths involved opioids.[2,3] Ultimately, people with OUD are 13 times more likely to die by suicide than the general population.[4]

OUD and opioid misuse are associated with suicidal ideation and suicide attempts,[5,6] but distinguishing intentional and unintentional overdoses is complicated. The proportion of opioid-overdose deaths that are suicides is likely considerable and underestimated, as it is challenging

to classify overdoses according to intent.[7,8] Furthermore, intentionality of overdose is likely dimensional, rather than categorical, with many overdoses not fully intentional or unintentional.[9] Suicide deaths and overdose deaths share common risk factors,[6,10-17] and while historically most overdoses have been thought to be unintentional, more recent evidence suggests that a significant proportion – estimated to be 20 to 30% - are intentional.[18]

The US Preventative Services Task Force found insufficient evidence to support universal screening for suicide risk, but this is not to discourage screening at-risk populations, such as people with or at high risk for OUD or opioid overdose.[19] A recent commentary in the New England Journal of Medicine states that improved screening for suicide risk along with rapid access to treatment is critical to prevent opioid-related suicide deaths in patients with OUD.[20] Ultimately, people with OUD should be targeted for prevention of both suicide and opioid overdose, recognizing that mental health conditions in this population will further increase risk.[16,21] To that end, this ancillary study, which will help primary care clinicians (PCCs) both identify people at risk for OUD/opioid overdose and a subset at increased risk of suicide, is particularly timely and important. In addition to guiding PCCs through structured assessment of suicide risk and providing decision support for recognition and treatment of depression, our study's potential to improve access to medications for OUD is also thought to reduce rates of intentional (and unintentional) overdose.[22]

D. Specific Aims & Hypotheses

People with OUD are at increased risk of depression and other mental health conditions, and a significant proportion of opioid-related deaths are likely suicides.[23,24] Yet systematic screening of patients with OUD for suicide risk is rarely done.[25] Nearly 50% of patients who die by suicide make a healthcare visit in the prior month, most often to primary care.[26] Primary care has an important role to play in suicide prevention.

In the NIMH-funded Mental Health Research Network (MHRN; 1U19MH121738), research team members developed and validated electronic health record (EHR)-based suicide risk prediction models that substantially outperform previous such tools.[27] These validated suicide risk models were developing using machine learning with a large number of EHR and administrative database variables to estimate risk of suicide, with an area under the curves (AUC) of 0.83 to 0.86.[27] The team is now updating this tool to add predictors specific to a population of people with OUD to the model, including prescription opioid use, opioid dose reduction, opioid discontinuation, and medications to treat OUD (R01DA047724). To date, this risk prediction tool has not been integrated into routine care processes in large healthcare delivery systems.

In the NIDA Clinical Trials Network-funded study COMPUTE 2.0 (CTN-0095), our research team has developed a clinical decision support (CDS) system that is integrated with the EHR and is designed to guide primary care clinicians (PCCs) in the identification, diagnosis and treatment of OUD. This non-proprietary tool, coined Opioid Wizard, uses a proven point-of-care CDS platform to guide PCCs in screening for OUD and common comorbid conditions, including depression and anxiety. Opioid Wizard includes an EHR-based tool that calculates risk of opioid overdose or OUD and alerts PCCs to patients at increased risk. It also algorithmically identifies and alerts PCCs to patients with OUD diagnoses or a history of opioid overdose.

In both intervention and control clinics, suicide risk scores will be calculated for all Opioid Wizard-eligible patients (at high risk of OUD/overdose or diagnosed with OUD) and archive relevant EHR data to inform analyses. In intervention clinics, Opioid Wizard will alert PCCs to Opioid Wizard-eligible patients who are at increased risk of suicide and coach them through use of the Columbia Suicide Severity Risk Scale (CSSRS), a structured tool in the EHR that will help PCCs assess immediate suicide risk. Based on the resulting CSSRS score, Opioid Wizard will provide EHR

links for risk-based referrals and follow-up recommendations, including care as usual, routine or emergent referral to behavioral health, or transportation to the emergency department for further assessment.

Specific Aims:

Aim 1. Evaluate the impact of Opioid Wizard + Suicide Risk Prediction on suicide assessment process measures.

H1: Opioid Wizard-eligible patients (patients with OUD or at elevated risk of OUD/overdose) with elevated suicide risk in intervention clinics will have higher rates of completed CSSRS assessments than similar patients in control clinics.

Aim 2. Examine the impact of Opioid Wizard + Suicide Risk Prediction on patient engagement in mental health care.

H2: Opioid Wizard-eligible patients with elevated suicide risk in intervention clinics will have higher rates of engagement in their outpatient mental health care than similar patients in control clinics.

E. Study Design

1. Overview of Study Design. When a patient is at elevated risk of suicide, the PCC will be prompted by Opioid Wizard to complete the CSSRS, easily available to all PCCs in the EHR and saved as discrete data elements. Risk-based (depending on CSSRS score) referral and follow-up recommendations for suicide prevention will be given, with specific care recommendations ranging from care as usual (very low risk) to referral to behavioral health for evaluation and safety planning (moderate to high risk) to immediate evaluation in the emergency department and potential inpatient admission (very high risk), building on workflows developed for use by care managers in in our recently completed suicide prevention trial of over 19,000 people at elevated risk of suicide.[28]

The MHRN suicide risk models will be programmed into the EHR, a rigorous process that will take approximately 6 months. This process includes building the model in a testing environment in the EHR, testing the model with fictitious patients in a EHR testing environment and conducting chart audits, revising as needed, testing the model in a different EHR testing environment with real patient data, revising as needed, testing the model by running it silently in the EHR production environment and conducting chart audits, and revising as needed. This is followed by testing in the EHR production environment with 5-15 physicians in 1-2 pilot clinics. Prior to the go-live date for the suicide risk calculator, training on use and interpretation of the suicide risk model and the CSSRS will be provided to all PCCs and their rooming staff in intervention clinics. Training for control clinics will be separate and will provide training on the use of the CSSRS.

2. Duration of Study and Visit Schedule. In the parent trial, HealthPartners primary care clinics (n=30) will be randomized to receive or not receive access to the OUD-CDS. In this supplemental study, the clinics receiving access to the OUD-CDS (n=15) will be further randomized (1:1) to receive or not receive access to the MHRN suicide risk models and associated CDS. PCCs in HealthPartners clinics with CDS access will have access to the main OUD-CDS intervention for up to 30 months from date of implementation. PCCs in HealthPartners clinics randomized to the suicide model intervention will have access to the suicide supplement intervention for up to 12 months from date of implementation.

In Suicide Supplement control clinics, the OUD- CDS will run silently in the background over the same time periods, collecting data without displaying. There is no study-determined visit

schedule; rather, patient visits will be jointly determined by the patient and PCC. Having the OUD-CDS run from implementation through the end of the observation period in all randomized clinics in each health care system ensures that identical methods are used to identify study-eligible patients and track patterns of OUD-related care so that we may quantify the impact of the OUD-CDS on OUD identification and care.

Table 1. Summary of Clinic Access & Training	
Suicide Supplement Intervention Clinics	Suicide Supplement Control Clinics
EHR alerts to patients at elevated risk of suicide per the MHRN suicide risk models	No EHR alerts
EHR access to the CSSRS that includes risk-based referral and follow-up recommendations for care based on CSSRS score	
Training on use of the CSSRS via live and recorded webinars and follow-up handouts	

F. Study Population

1. Primary Care Clinics: For this supplemental study, study clinics will include all 15 HealthPartners primary care clinics randomized to the intervention in the parent study (COMPUTE 2.0); half of these clinics will be randomized to receive access to the suicide risk models and alerts, and half will not. Each primary care clinic has at least 3 eligible PCCs and 50 adult patients who meet inclusion criteria for the parent study (see Section C.6 in the COMPUTE 2.0 Protocol).

2. Primary Care Clinicians (PCC): To be eligible for inclusion in the parent study (and therefore also this supplemental study), a PCC must practice at least 0.5 full-time equivalent at a study- eligible primary care clinic and be a family physician, general internist or adult-care non-obstetric nurse practitioner or physician assistant. PCCs are study-eligible regardless of whether they are waivered to prescribe buprenorphine. PCCs in the intervention clinics will be encouraged but not required to use Opioid Wizard with eligible patients; the decision to use or not use the CDS at a given clinical encounter is up the PCC at each clinical encounter.

> **Consent**: We will request a waiver of written informed consent from the IRB for PCCs for the intervention, because the CDS is based on current national standards of care and does not make treatment recommendations that are not accepted as community standards of care, and because consenting PCCs would compromise the external validity of the study by introducing selection effects. Our IRB has granted such waivers for similar studies, including the parent study.

3. Patients: To be eligible for inclusion in the parent study (and therefore also this supplemental study), a patient must: (a) be aged 18-75 years, inclusive; (b) have an OUD diagnosis, be prescribed an active MOUD, or be identified by the opioid risk models as being at high risk of OUD or overdose; and (c) be identified at high risk of suicide by the suicide risk models. There are no exclusions for pregnancy, lactation, or mental health or behavioral health diagnoses. The first visit at which all eligibility criteria are met will be the index visit. Patients who meet the following criteria at their index visit will be excluded and not be exposed to the intervention: (a) active parenteral chemotherapy within the last year; (b) stage 4 or equivalent cancer diagnoses; or (c) enrolled in hospice or palliative care programs. Patients will accrue in the first 9 months of the 12 month intervention period to allow for at least 3 months of data collection for every patient. All PCCs and eligible patients will be attributed to the clinic at which they practice (PCC) or their index visit took place (patients) and to the arm to which their clinic is randomly assigned.

> **Consent:** We will request and anticipate receiving a waiver of written informed consent from the IRB for patient participation because the study is minimal or less than minimal

risk compared to the risk associated with any primary care encounter, and because the study could not practically be conducted if written informed consent were required to be obtained in the context of busy community-based primary care clinics. We have requested and received such waivers in several similar prior studies, including the parent study. Patients who have requested non-participation in research studies will be excluded from all analyses.

Definition of High Risk: Algorithms determine when a patient is identified as being at high risk for OUD or opioid overdose or for suicide attempts or deaths, and, in intervention clinics, this will trigger a best practice alert to be displayed for a particular patient at a particular clinic encounter. These algorithms are housed on a web platform that interacts with the EHR to pull data elements to run risk equations and determine patient eligibility. Separate risk models for OUD/overdose and suicide attempt/death will be used.

G. Study Procedures

4. Index Visit

There is no study-determined visit schedule. Patient visits with their PCCs in the randomized clinics will take place without any interference or involvement from the study team. The first visit at which the OUD-CDS algorithms determine that a patient is eligible for the intervention will be denoted as the index visit.

5. Treatment/Intervention

The intervention is the availability of the suicide prevention CDS in approximately half of the parent study's intervention primary care clinics.

6. Premature Withdrawal of Participants

Once randomized, all primary care clinics are anticipated to remain enrolled for the duration of the study. All PCCs in randomized clinics will be followed for the duration of the study unless they die or leave the employment of the clinic. All study-eligible patients with OUD or identified by the algorithms as being at high risk of OUD in randomized clinics will be followed for the duration of the study unless they die or leave the care system. Patients who have opted out of research will be excluded from all analyses.

7. Follow-Up

There is no study-determined visit schedule. Patient visits with their PCCs in the randomized clinics will take place without any interference or involvement from the study team. Primary care visits that take place after the index visit and prior to the end of the observation period will be denoted as post-index visits. The OUD-CDS will flag the occurrence of all index and post-index visits so that EHR data documented from each may be extracted and assembled into an analytic dataset.

H. Data Collection and Management

1. Measures of Primary and Secondary Outcomes

Primary and secondary outcomes will be assessed using the data collected from the EHR via the OUD-CDS and from EHR (Clarity) data pulls.

Primary outcome measures include:

a) Columbia Suicide Severity Rating Scale (CSSRS): frequency of completion, distribution of CSSRS scores, and Behavioral Health or ED referrals due to CSSRS scores
b) Frequency and continuity of primary care and mental health visits (post-index visit)
c) Identification of fatal and non-fatal suicide attempts, using ICD-10 codes
d) Identification of Opioid overdose, using ICD-10 codes

2. **Demographics Form**

We will collect age, gender, race/ethnicity, years of practice and medical specialty (primary care vs. internal medicine) for PCC participants. Patient-level data required to assess study objectives will be collected from the EHR by the OUD-CDS and stored in a secure analytic database. Data will be collected from the EHR via the OUD-CDS tool itself, with data stored in a secure server located behind multiple HealthPartners firewalls.

3. **Contact Information**

We will keep a list of participating primary care clinics, their administrative leaders and their PCCs on a secure server at HealthPartners. This list will include the PCC name, primary care clinic name, phone number of the clinic and provider email address.

4. **Clinical and Safety Assessments**

This intervention is being delivered by way of CDS prompts to influence provider actions to incorporate evidence-based best practice standards related to both OUD and suicide prevention. Prior to implementation, we will train all intervention PCCs and their rooming staff on the importance of helping us identify any clinician-identified safety events or near-misses that may be related to the EHR or CDS. We will systematically educate them in identification of potential safety events and near-misses and informing us of these events via use of the Feedback Tab in the CDS or email. We will also ask PCCs to notify us of any clinical situations where their clinical judgment differs from the CDS.

Use of the Feedback Tab will automatically generate an email that is sent to study team members, including PIs and programmers. The study team will then discuss this feedback and any necessary actions, and reply to the PCC to answer the question, discuss steps taken to address the issue, or gather additional information if needed to further trouble-shoot. PCCs will be asked to submit feedback any time their clinical judgment is inconsistent with the CDS tool. Additionally, the emails of study investigators will be listed on the CDS interface for providers, and PCCs will be encouraged to contact us directly with any questions or concerns if they'd rather not use the Feedback Tab in the OUD-CDS. This feedback will be provided to the DSMB twice per year or at the frequency determined by the DSMB.

I. Randomization

In the parent trial, HealthPartners primary care clinics (n=30) will be randomized to receive or not receive the intervention. In this supplemental study, simple randomization will allocate the intervention clinics (n=15) approximately evenly to receive or not receive access to the MHRN suicide risk models and associated CDS.

Each patient will be considered to belong to the clinic in which his or her first visit that is eligible for the OUD-CDS intervention (i.e., index visit) takes place, and as such will be in the treatment group to which their clinic was randomly assigned. Post-index visits may take place in the same or different clinics or treatment groups relative to the index visit and may or may not be eligible for the OUD-CDS to offer treatment recommendations. In keeping with an intent-to-treat principle, all index and post-index visits and outcome measures for each patient will be attributed to the treatment group assignment of the clinic where the index visit took place.

J. Analysis

1. Study Hypotheses

H1: Opioid Wizard-eligible patients (patients with OUD or at elevated risk of OUD/overdose) with elevated suicide risk in intervention clinics will have higher rates of completed CSSRS assessments than similar patients in control clinics.

H2: Opioid Wizard-eligible patients with elevated suicide risk in intervention clinics will have higher rates of engagement in their outpatient mental health care than similar patients in control clinics.

The hypotheses for this supplemental study predict that the Opioid Wizard + Suicide Risk Prediction intervention will increase (a) the likelihood that Opioid Wizard-eligible patients with elevated suicide risk are assessed at the index visit for immediate suicide risk using the CSSRS (H1); and (b) the rate of post-index primary care visits with a mental health diagnosis or with a behavioral health clinician (H2). These hypotheses will be tested using generalized linear mixed models so that each outcome may be estimated among intervention relative to control clinics while accounting for patient outcomes clustered within randomized clinics via a random clinic intercept. Both outcomes will likely be normalized with a Poisson-Normal link function, although the distribution of visits may warrant using a Negative Binomial- Normal link.

2. Projected Number of Clinics

We anticipate that the 15 intervention clinics from the parent study will be included in this study and will be randomized to receive or not receive the suicide prevention module.

3. Statistical Power

Based on preliminary data, 1619 diagnosed (median=89, range=39-267 per clinic) and 3349 at-risk (median=41, range=19-129) patients were seen in the clinics eligible for the parent study over the course of one year for a total of 4968 (median=130, range=66-387) OUD- CDS-eligible patients. Assuming that 5%, 10% or 20% of approximately 2500 patients are evaluated and considered at high risk for suicide, we estimate that 125 (2500 * 5%), 250 or 500 patients will be eligible for this study over one year of accrual.

A power analysis estimated the minimum detectable risk ratio for CSSRS and visit rates in intervention relative to control clinics. It relied on data-informed assumptions regarding the number of randomized clinics (n=15) and eligible patients per clinic (pts/clin =8, 16, 33); a range of clinic intraclass correlations consistent with those observed for other process measures at HealthPartners (ICCclin = 0.01, 0.03, 0.05); and outcome likelihood estimates in control clinics (screening=1%, 3%, 5%; visit rate=2, 3, 4/year).

Assuming 3% of control clinic patents are screened for suicide risk, the analysis will be powered (power=0.80, $\alpha 2$=0.05) to detect an outcome should at least 14.2% (ICCclin=0.01, 33 pts/clin, risk ratio = 4.72) to 65.0% (ICCclin=0.05, 8 pts/clin, RR=21.66) of intervention clinic patients be screened. The comparable range of detectable differences for outcomes with a 5% screening rate among control clinic patients is 16.8% (RR=3.36) to 54.8% (RR=5.80).

Power for Aim 2 analyses is not as sensitive to sample size assumptions. Under the most generous assumptions (ICCclin= 0.01, 33 pts/clin), small increases in visits rates (2.4 vs. 2.0, RR=1.22; 4.6 vs. 4.0, RR=1.15) will be detectable. Larger but still attainable increases (3.0 vs. 2.0, RR=1.49; 5.3 vs. 4.0, RR=1.33) will be detectable under the most conservative of assumptions (ICCclin=0.05, 8 pts/clin).

4. Exploratory Analyses

In exploratory analyses, we will also examine (a) intervention effects on outcomes such as depression screening via the Patient Health Questionnaire (PHQ9), suicide attempt, opioid overdose, emergency department visits and hospitalizations, and continuity of care; and (b) treatment effect heterogeneity among patients with OUD who are vs. are not

prescribed OUD medications, and patients with vs. without diagnosed comorbid mental health conditions. Results of this work will provide a workable prototype for timely provision of critically important suicide prevention for patients at risk for or diagnosed with OUD or opioid overdose.

K. Missing Data and Dropouts

We expect person-based missingness to be extremely rare. Patients are unlikely to be aware that their data are being used for this research. They will not be consented and are unlikely to request that their data be excluded from analyses. Only patients who have requested that their data not be used for research and appear on site-maintained opt out lists will be excluded.

L. Potential Risks and Benefits

There is a small but important risk that the OUD-CDS could provide the wrong treatment advice at the wrong time. As with other clinical decision tools, the OUD-CDS makes suggestions for patient care that are meant to supplement but not supersede clinical judgment. PCCs can choose to follow or not follow the guidance of the CDS at any given time in any given patient encounter. PCCs will be trained to let the research team know via the Feedback Tab in the CDS when their clinical judgment leads them to a different action than that suggested by the CDS. These events will be monitored in real time by the research team and the CDS algorithms adjusted if there are found to be errors. Every clinical encounter requires medical judgment and poses some element of risk to patients. In the situation of a PCC who is unfamiliar or uncomfortable with OUD or suicide risk assessment, use of the CDS will likely make care safer by providing suggestions to screen and assess patients using validated tools, and by encouraging referrals when patients are classified as high risk.

M. Participant and Data Confidentiality

Participant confidentiality and privacy is strictly held in trust by the participating investigators, their staff, and the funding agency, and will be maintained in accordance with all applicable federal and/or state regulations and laws. This confidentiality is extended to the data being collected as part of this study. Data that could be used to identify a specific study participant will be held in strict confidence within the research team. No personally-identifiable information from the study will be released to any unauthorized third party without prior written approval of the sponsor/funding agency and the participant. All research activities will be conducted in as private a setting as possible. The study monitor, other authorized representatives of the sponsor or funding agency, representatives of the Institutional Review Board (IRB), or regulatory agencies may inspect all documents and records required to be maintained by the investigator.

Participant records will be held confidential by the use of study codes for identifying participants, secure storage of any documents that have participant identifiers, and secure computing procedures for entering and transferring electronic data. The study participant's contact information will be securely stored at each clinical site for internal use during the study. At the end of the study, all records will continue to be kept in a secure location for at least three years after database lock or longer if required by the IRB.

N. Safety Reporting

We do not anticipate that a Data and Safety Monitoring Board (DSMB) will monitor this study. We will report any unanticipated safety events to the HealthPartners IRB, as required. This study will randomize clinics to receive or not receive a CDS tool to facilitate the provision or accepted standards of care. With this work, we are not attempting to change the standard of care for OUD treatment or mental health treatment in primary care, but rather are attempting to help PCCs achieve this standard of care. PCCs will be trained that, as with other clinical decision tools, the OUD-CDS

and the suicide risk module are meant to supplement but not supersede clinical judgment. PCCs will be able to choose to follow or to not follow the guidance of the CDS at any given time for any given patient. PCCs will be asked to use the Feedback Tab within the tool to let the team know of questions, potential errors, or when their clinical judgment is inconsistent with the CDS. This feedback will be monitored by the treatment team and the CDS algorithms adjusted if indicated.

O. Study Timeline

The study timeline began on October 1, 2020. Trial preparation will include obtaining Institutional Review Board (IRB) approval, building and testing the Suicide Risk Models, and training clinicians. Active intervention and data collection will continue for 12 months, including at least 3 months follow-up per patient.

Study Timeline	**2020-2021**				**2021-2022**			
Quarter	**Oct-Dec**	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep
Phase 1: Development, Testing, Training								
Finalize protocol, obtain IRB approval								
Build, install and test the MHRN suicide risk calculator in the EHR								
Clinic trainings								
Phase 2: Active Intervention								
Go live & primary data collection								
Patient recruitment (allowing for ≥3 months follow-up per patient)								
Monitor use rates, provide clinic- and PCC-level use reports								
Update, troubleshoot algorithms as needed								
Phase 3: Analysis and Reporting								
Preliminary reports of available data to funder								
Consolidate/analyze final data								
Dissemination activities, submit manuscript for publication								

P. Trial Registration, Publication, Dissemination and Data Sharing

1. Trial Registration. In keeping with NIH policy, this trial will be registered at ClinicalTrials.gov, and results information from this trial will be submitted to ClinicalTrials.gov.

2. Publication policy. We will publish results in peer-reviewed journals. The planning, preparation and submission of publications will follow the policies of the Publications Committee of the CTN.

3. Disseminating results to the public. As a result of our previous and ongoing OUD and mental health research, we have established communication channels with key stakeholders in our health system, as well as with external stakeholders, including the NIDA CTN, MHRN, the Midwest Research Network, and the Health Care Systems Research Network. We anticipate that our findings will be of significant interest to these groups, and we will disseminate our findings, methods and resources. We will share our findings immediately through presentations at local and national meetings. We will publish our findings in peer-reviewed journals and communicate our findings to public media outlets.

4. Data Sharing. The study investigators will share a limited de-identified data set used for primary outcome analysis with NIDA for NIDA's Data Share website. The CTN's Data and

Statistics Center (DSC) can assist study investigators with providing the data set to the designated party to ensure de-identification, and for posting, storing, and archiving on NIDA's Data Share website. Data Share is an online repository of data from studies funded by the NIDA and is located at: https://datashare.nida.nih.gov/.

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