RESEARCH PROTOCOL

Protocol Title:	Collaborative Care for alcohol use disorders in the patient-centered medical home (short title: Project ReDUCE)
Principal Investigator:	Jon Morgenstern, Ph.D.
Primary Contact Name:	Svetlana Levak, Ph.D.
Primary Contact Phone:	(516) 837-1675
Primary Contact Email:	slevak@northwell.edu
Date Revised:	3/30/2018
IRB Number:	15-0743

1) PREVIOUS STUDY HISTORY

Has this study ever been reviewed and rejected/disapproved by another IRB prior to submission to this IRB?

☒NO ☐YES—if yes, please explain: N/A

2) BRIEF SUMMARY OF RESEARCH

Excessive drinking (ED) and Alcohol Use Disorders (AUDs) remain one of the nation's leading public health problems, yet this problem is largely under-recognized and undertreated. Although many people with ED/AUD see a primary care physician annually, there has been limited research and implementation of models to treat ED/AUD in primary care. Important changes in the healthcare system and advances in alcohol research offer new and potentially transformative opportunities to integrate ED/AUD treatment into primary care practices. In particular, these changes have led to the development of new patient-centered, integrated care models that facilitate the treatment of behavioral health issues in primary care. Experts have repeatedly called for the development of a chronic care model to treat alcohol problems in primary care, similar to models now used to treat other chronic illnesses, including depression. Yet, research to develop and test such models has been surprisingly limited. The primary aim of this proposal is to develop and test a chronic care model to treat ED/AUD in the patient-centered model home (PCMH) using the National Institutes of Health (NIH) stage model of intervention development. Specifically, using a mixed methods approach, this study proposes to adapt and test the collaborative care (CC) model for depression to treat ED/AUD in a high volume PCMH. Importantly, we will build the CC model onto a Screening, Brief Intervention, and Referral to Treatment (SBIRT) program that is already in place in the PCMH. Notably, this SBIRT model currently refers those with ED/AUD out to specialty treatment providers.

The purpose of the study is to develop and test a collaborative care model to treat ED and AUDs in a primary care practice. We plan to conduct this study in two phases using the NIH stage model. A third stage that includes a randomized controlled trial will be conducted later and will be submitted as a separate IRB protocol after we adapt protocols based on what is learned in the first 2 phases

The proposed study will be conducted in two phases. Phase I will involve initial adaptation of the CC model for depression. During this phase, relevant depression CC protocols and measures will be adapted for ED/AUD and pilot tested on participants (n = 25) recruited in a PCMH. Phase

II will involve model refinement based on iterative cycles of patient and PCMH staff feedback and examination of drinking outcome data. During this phase, participants (n = 60) will be assessed and followed for three months. Iterative development will focus on: 1) utilizing a stepped-care model of treatment which will include outpatient detoxification, behavioral interventions, and medication intervention and management, 2) maximizing patient engagement, and 3) balancing the resource and expertise constraints of treating ED/AUD in a PCMH. Participants in Phases I and II will be assessed at weeks 1, 4, 8, and 12 and primary outcome data on drinking outcomes will be examined.

3) INTRODUCTION/BACKGROUND MATERIAL/PRELIMINARY STUDIES AND SIGNIFICANCE

Public Health and Excessive Drinking. ED and Alcohol Use Disorders (AUD) remain one of the nation's leading public health problems. One in six Americans exceeds recommended guidelines for healthy drinking (Center for Disease Control & Prevention, 2014) and about one in twelve (8.45%) meet criteria for AUD (Grant, et al., 2004). Annual costs to society related to alcohol problems are estimated to be $223.50 billion (Bouchery, Harwood, Sacks, Simon & Brewer, 2006), a figure similar to that of other major diseases like diabetes ($245 billion) and cancer ($216 billion). Despite the magnitude of the problem, ED/AUD are under- recognized and undertreated. For example, studies indicate that only 12% of those with an AUD ever received treatment (Cohen, Feinn, Arias, & Kranzler, 2007). Barriers to treatment include stigma, impaired motivation among those with alcohol dependence (AD), inadequate insurance coverage, and the delivery of AUD treatment in specialty care settings that exist outside of mainstream medicine. The alcohol research community has long recognized this problem (Institute of Medicine, 1990). Progress has certainly been made in the last 25 years, but the problem of delivering care to the vast majority of those with ED/AUD remains unresolved.

New Opportunities to Integrate Treatment of ED/AUD into Mainstream Healthcare: Improved understanding of alcohol problems and changes in the healthcare system offer new and potentially transformative opportunities to expand access to alcohol treatment. AD is now widely understood as a chronic illness, similar to that of other chronic medical conditions (McLellan, et al,, 2014). Effective treatments have been developed that can be feasibly delivered in primary care settings including brief advice (Center for Substance Abuse Treatment, 1999), time-limited behavioral interventions (Babor, et al., 2007), and pharmacotherapies (Park, et al., 2015). Epidemiology studies provide new support for the public health argument that alcohol treatments should be made accessible to those with mild to moderate alcohol problems, in part as a strategy to avert the development of chronic illness (Town, Naimi, Mokdad, & Brewer, 2006). For example, an analysis of NESARC data found that over half of those diagnosed with AD reported relatively intact psychosocial functioning and low rates of mental health comorbidities. These subgroups appeared to have a less severe course of AD and had the lowest rates of treatment seeking (<5%). Study findings support the argument that primary care might be a more suitable setting to treat a large segment of those with AD who currently remain untreated, if such treatment was widely available (Lenaerts, et al., 2014; Willenbring, 2007). Similarly, studies indicate about 16% of Americans binge drink four or more times a month, most binge drinkers are not alcohol dependent, and binge drinking accounts for 75% of alcohol's estimated costs to society (Town, et al., 2006; Centers for Disease Control and Prevention, 2012). These findings highlight the population health and economic benefits of screening and intervention in primary care. Overall, recent research findings substantially strengthen the argument for expanding ED/AUD treatment to primary care settings. Evidence supports the treatment of AUD as a chronic illness similar to other chronic conditions; the effectiveness of interventions that can be feasibly delivered in primary care settings; and the public health benefits of widespread access to alcohol treatment, especially early intervention, as an important strategy to reduce healthcare costs.

Changes in Healthcare Delivery: The last decade has witnessed a dramatic and accelerating transformation of the healthcare delivery system driven by the twin goals of improving quality of care and reducing costs (Mechanic, 2012). Two developments of special import for the integration of alcohol treatment into mainstream healthcare are: 1) the paradigm shift from a focus on acute to chronic illness and 2) the passage of healthcare reform legislation that when fully implemented will greatly increase insurance coverage for treating alcohol problems (McLellan, et al., 2014; Ghitza & Tai, 2014). (Lewis, et al., 2014)

As noted above, ED/AUD substantially contributes to the burden of chronic illness. Alcohol screening and early intervention has been shown to be one of the most cost effective preventative medicine strategies for use in primary care (Solberg, Maciosek, & Edwards, 2008), and effective interventions exist that can feasibly be implemented to treat a wide spectrum of alcohol problems from at-risk drinking to uncomplicated AD within the primary care setting. There is reason to anticipate that identification and access to treatment in primary care will lead to greater engagement and reduced drinking for problem drinkers and those with uncomplicated AD; groups who rarely receive care in the current system. These developments present a new and exciting window of opportunity to address a longstanding, seemingly intractable public health challenge: integration of alcohol treatment into mainstream medicine as a way to reduce the number of untreated or undertreated Americans who drink excessively or are afflicted with AUD.

Gap in Model Development and Testing: Wagner's Chronic Care Model (CCM) has been an influential template for designing and implementing most of the above mentioned integrated care models. Addiction experts have repeatedly called for the development of a CCM to treat AUD (McLellan, et al., 2014; Lenaerts, et al., 2014; Butler, et al., 2008; Saitz, Larson, Labelle, Richardson, & Samet, 2008; Saitz, 2013). CCM features as implemented in primary care include: patient-centeredness, multi-professional teamwork, continuity of care, evidence-based practice, and continuous quality improvement (Lenaerts, et al., 2014; Ouwens, Wollersheim, Hermens, Hulscher, & Grol, 2005). A review published in 2014 by a NIDA Consensus panel concluded that despite the clear clinical need for a CCM model and the extraordinary opportunity for integration created by ACA, implementation of such a model would prove difficult for two reasons (McLellan, et al., 2014). First, few practical models exist to provide guidance. Second, there is a striking absence of empirical evidence comparing CCM to other SUD treatment models. Thus, there is a consensus among experts that a CCM model of ED/AUD is needed to capitalize on the dramatic changes in healthcare, but such a model and evidence to support its efficacy does not yet exist.

Research on Models that Integrate AUD Treatment into Primary Care Settings: Screening, Brief Intervention and Referral to Treatment (SBIRT) has been extensively studied as a model for treating alcohol problems in primary care. Reviews have found that SBI is effective for at-risk drinkers, that multi-component brief interventions (BI) are more effective than single encounters, but that SBIRT appears ineffective among harmful drinkers and those with mild to moderate AD (Jonas, et al., 2012; McCambridge & Rollnick, 2014; Saitz, 2010). These widely accepted results (i.e., modest effects on consumption for at-risk drinkers and an absence of evidence of efficacy for heavier drinkers) have led a number of senior alcohol scientists to call for new research to test the efficacy of behavioral interventions and medication in primary care for those with mild to moderate AD as well as harmful drinkers as an important next step in building a stronger evidence-base for treating AUD in primary care (McCambridge & Rollnick, 2014; Heather, 2014; Saitz, 2014).

Two recent studies examined integrated treatment of AD in primary care. First, Oslin et al. (2014) compared treating veterans with AD using naltrexone plus medical management in primary care versus referring them to specialty care. The study found superior outcomes for the group treated in primary care. Saitz and colleagues (2013) tested a CCM for SUD in a

primary care clinic. The study focused on one important subgroup of patients: those with SUD dependence who had significant social, medical, and mental health problems. The majority of participants (75%) were recruited following residential drug detoxification. The study found no significant differences between CCM and a referral to primary care but did find a small positive effect for a subgroup with AD only. In commenting on the negative findings, the authors note that the efficacy of treatments for multi- problem individuals with chronic SUD may be limited. Thus, delivering such treatments in primary care may not improve outcomes.

Overall, with the exception of the Saitz and colleagues (2013), no study has rigorously examined a CCM for AUD in primary care. As noted above, research supports the use of screening as a strategy to identify those with alcohol problems in primary care and the efficacy of brief interventions to treat at-risk drinkers. Findings from Oslin et al. (2014) support the use of naltrexone to treat AD in primary care, but findings may be limited to the VA. For example, half of participants in the Oslin et al. study (2014) already had a prior episode of alcohol treatment. In addition, a number of experts have suggested that future research in primary care should focus on testing treatments for harmful drinkers and those with mild to moderate AD.

Model and Setting Considerations: We propose to develop our model in the context of a Patient Centered Medical Home (PCMH) and to adapt model features from the Collaborative Care (CC) model for the treatment of depression in primary care (Unutzer, Harbin, & Druss, 2013). The PCMH (also referred to as medical homes) is at the center of efforts to reinvent primary care to address the burden of chronic illness. Among the key features of PMCH are: a comprehensive approach to care, a personal relationship with a physician-led team that has collective responsibility for the patient in a manner that is coordinated and continuous, and a reimbursement approach that pays for the cost of these systems. Since 2008, the National Committee for Quality Assurance (NCQA) has been evaluating and certifying practices' ability to function as a PCMH. NCQA PCMH Recognition is the most widely-used way to transform primary care practices into medical homes. More than 10 percent of U.S. primary care practices (almost 7,000) are recognized as NCQA PCMHs (National Committee for Quality Assurance, 2014). A recent study found that the transition of primary care practices to PCMHs is rapidly accelerating. PCMH projects are now found in 44 states and are strongly supported by commercial, state, and federal funders (Neilsen, Buelt, Patel, Nichols, & Fund, 2014). In 2014, the American Academy of Family Physicians and other leading medical societies issued a statement that integrated behavioral health is a core principle of PCMH (Baird, et al., 2014). Subsequently, NCQA joined this movement by issuing a new set of PCMH standards that include integration of behavioral health. Thus, PCMHs have been identified by leading medical groups as a setting where the integration of medical and behavioral health care should occur.

There is a strong rationale to develop a CCM for ED/AUD in a PCMH setting. PCMHs already have many of the critical organizational, technology, practice, and staffing features needed to develop CCM for alcohol. The newly developed model can capitalize on those features, rather than seek to create them. PCMHs do vary across a wide range of dimensions, but NCQA requirements provide a core set of features that will facilitate adoption of the model. In addition, because PCMHs are designed to address chronic illness, there will be increasing pressure on them to expand coverage of behavioral health issues, including alcohol. Thus, PCMHs represent an important stakeholder constituency who over time will be motivated to include CCM for alcohol problems, if such an intervention proves effective.

Collaborative Care (CC) Model: CC is an evidence–based approach for integrating depression treatment as part of routine medical care. CC was developed using the Wagner model and contains the five CCM core principles (Ouwens, et al., 2005). CC has been widely recommended for adoption by state Medicaid agencies as part of ACA in the context of the expansion of medical and health home programs (Unutzer, et al, 2013). CC includes: care

coordination, regular proactive monitoring and treatment- to-target using validated clinical rating scales, and regular systematic caseload reviews for patients not showing improvement. A number of reviews have found that CC for depression consistently demonstrated greater effectiveness relative to usual care (Gilbody, Bower, Fletcher, Richards, & Sutton, 2006; Bower, Gilbody, Richards, Fletcher, & Sutton, 2006).

There are several reasons for our decision to adapt CC to ED/AUD. First, features of the model provide a good fit for adaptation to existing evidence-based alcohol interventions (cf. section below). Second, CC has a strong evidence base. One attractive feature is that the CC attempts to treat problems in primary care rather than referring out. As stated above, provisional evidence supports intervening for alcohol problems within the PCMH, rather than referral out, as a first-line approach. Second, CC appears likely to become the dominant model for the treatment of mental health problems in the PCMH. Developing a parallel model for alcohol could greatly facilitate dissemination to PCMHs.

Core Features of CC and their Adaptation for Excessive Drinking/AUD: Knowns and Unknowns: CC has four core features: 1) standardized assessment to enable identification, diagnosis, and risk stratification. In addition, protocols are required for pro-active ongoing monitoring, tracking, and support to assess treatment response and adjust treatment as needed; 2) risk stratification of patients and use of treatment algorithms for selection of the initial evidence-based treatment; 3) Stepped care and treatment-to-target (TTT) protocols are needed to respond in a timely manner to treatment non-response and modify or step-up treatment; 4)Teamcare (described below) consisting primarily of Primary Care Practitioners (PCPs), a non-physician care manager/behavioral health clinician, and easy access to a consultative specialist(s) to advise the PCP on care issues. In the following sections, we describe the issues related to adapting CC for ED/AUD. We identify known elements in alcohol assessment/treatment that can be easily adapted as well as unknown factors that require exploration and development:

(1) Standard Assessment and Ongoing Monitoring and Support to Assess Treatment Response: There is a well-established literature on screening and assessment for alcohol problems in primary care using validated self-report measures (Fiellin, Reid, & O'Connor, 2000). Unknowns: Self-report measures fail to detect a portion of those with alcohol problems. It is not clear whether other methods such as biological assays (e.g., liver enzyme tests) or medical record reviews in combination with standard screening would substantially increase the number of patients identified and whether such individuals would engage in alcohol treatment. Extended care interventions have developed protocols for pro-active monitoring and intervention but these have largely been limited to aftercare (McKay et al., 2005). Unknowns: We have limited knowledge about how best to structure pro-active monitoring, education, and support for patients and families or the development of a patient registry to track care in the PCMH.

(2) Risk Stratification & Treatment Algorithms (cf. Approach for a more detailed description of four mutually exclusive risk groups): Evidence supports stratification and treatment assignment based on severity of alcohol problems and the presence of co-occurring problems (United States Department of Health and Human Services, 2005; Cavacuiti, 2012; Harris, Kivlahan, Bowe, Finney, & Humphreys, 2009). As noted above, brief interventions in primary care have proven effective for at-risk drinkers, but not for those with more severe problems (Saitz, 2010; Kaner, et al., 2009). A number of brief behavioral interventions including Motivational Enhancement Therapy (MET) (Morgenstern & McKay, 2007; Morgenstern, et al., 2012; Walters, 2000) have proven effective for problem drinkers (i.e., heavy drinkers including those with mild to moderate AD seeking drink reduction rather than abstinence goals). In addition, several medications including naltrexone and topiramate have also proven effective (Morgenstern, et al., 2012a; Kranzler, et al., 2009; Kranzler, et al., 2014) to treat problem

drinkers. General clinical research guidelines tend to exclude participants with severe AD (often defined as evidence of physiological withdrawal) from problem drinker studies (Morgenstern, et al., 2012b; Kranzler, et al., 2014). Numerous clinical trials of patients with moderate-to-severe AD, but without significant co-occurring problems, support the efficacy of a similar set of behavioral and pharmacological treatments as those listed above, but in the context of abstinence goals (Miller & Longabaugh, 1995; Anton, et al., 2006; Johnson, et al., 2007). Notably, trials such as Project MATCH (Project MATCH Research Group, 1998) or COMBINE (Anton et al., 2006) have tended to exclude individuals with current other Axis I or II disorders or significant social instability and clinical practice guidelines tend to recommend more intensive treatments such as intensive outpatient care for this group (Cavacuiti, 2012; Harris, et al., 2009). Unknowns: With very few exceptions (Oslin, et al., 2014), evidence for the efficacy of treatment for problem drinkers and AD is based on treatment seeking samples. Thus, we have limited knowledge about whether such patients will engage or benefit from AUD treatment delivered in primary care.

(3) Stepped Care and TTT: Stepped care in the CC model refers to pro-active monitoring of the patient during the initial care episode to assess adherence and response to the initial treatment. Patients who fail to respond are offered a stepped-up care option. Typically, stepped care involves consultation with a specialist consultant (e.g., psychiatrist) and provision of an alternative evidence-based treatment that may be more intensive than the initial treatment. Patients who fail to respond to this treatment are offered a third option, typically a referral to specialty care treatment (e.g., mental health care setting). In CC models, evidence-based treatments are organized in a hierarchy with interventions that involve the least burden to the patient and staff being the first option. In the case of CC for depression, use of treatment algorithms allows the primary care team to initiate treatment without involving specialty mental health consultants. If the initial treatment fails, then the specialist consultant gets involved and a second treatment option is implemented. If the patient continues to be symptomatic, a third option is offered and so on. At each step-up, more specialized treatments and specialized expertise become involved. Unknowns: There is an evolving literature on stepped care in AUD in the context of AUD clinical trials (Kranzler & McKay, 2012). However, we are not aware of peer-reviewed literature on treatment of AUD in primary care using stepped care/TTT options.

Teamcare: Teamcare refers to the realignment of roles of the PCPs, specialists, and allied health professionals, so that they function more as a team and less as independent and uncoordinated sources of patient care (Katon, et al., 2010). Teamcare can be characterized by the professionals on the team, their defined roles, and the workflow of the program (Advanced Integrated Mental Health Solutions Center, 2015). Typically, the team is comprised of PCPs, care managers, and specialists (e.g., psychiatrists). Care managers typically help screen and identify patients and work closely with the PCP on engaging the patient in care. Care managers provide education, support and monitoring and are responsible for developing a registry that tracks patients. In CC for depression, a consulting psychiatrist is available to provide as-needed advice to the PCP and conduct regular case supervision for complex patients. Teams have been used in prior studies of CC for SUD in primary care (Saitz, et al., 2013; Alford, et al., 2011) and the broad features are clearly applicable to AUD treatment. Unknowns: The appropriate team composition, their respective roles, and workflow have to be developed and tested for feasibility. In addition, estimated resource allocation for staff time to operate the model is unknown.

Summary of Significance: ED/AUD is a major public health problem but remains under-recognized and undertreated in the healthcare system. While progress has been made, the problem of integrating ED/AUD treatment into mainstream healthcare remains largely unresolved. Legislative mandates for SUD treatment reimbursement and ongoing initiatives to

transform primary care provide a new climate and unprecedented opportunity to address this problem (McLellan, et al., 2014) . Experts have repeatedly called for the development of a CCM to treat ED/AUD in primary care, but (as reviewed above) research in this area has been limited. This study builds on the new understanding about the strengths and limitations of SBIRT (Saitz, 2010), the development of effective interventions for PD and AD that could be delivered in primary care (Oslin, et al., 2014; Morgenstern, et al., 2012a, 2012b), and the success of the CC model for integration of depression treatment into primary care. If study aims are achieved, important and necessary first steps – development of the model and provisional support for its efficacy – towards establishing an evidence-based, workable model to treat ED/AUD in the PCMH will be taken.

4) OBJECTIVE(S)/SPECIFIC AIMS AND HYPOTHESES

We conducted an extensive review of the published literature and currently funded NIH studies but found surprisingly limited research on development of a CCM model to treat ED/AUD in PCMHs. Thus, to the best of our knowledge, this would be among the first studies in this area. In addition, while the general assumption is that early intervention in primary care can be effective, there is very limited knowledge about whether patients will engage in more than a brief intervention or how best to accommodate important aspects of patient-centered care such as patient preferences. Finally, little is known about non- response to ED/AUD treatment in primary care and what stepped care approaches can feasibly be implemented in PCMHs using a team-care approach.

The primary aim of this proposal is to develop and test a chronic care model (CCM) to treat excessive drinking and Alcohol Use Disorders (ED/AUD) in a patient centered medical home (PCMH) setting using the stage model of intervention development. The study proposes to adapt the collaborative care model (CC) for treating depression in primary care to use with ED/AUD and then test the adapted model for feasibility, acceptability, and clinical utility. If evidence supports the model, the long-term aim of the study is to develop the necessary protocols, site preparation, and design specifications to proceed to submitting an RO1 application.

The study will be conducted in two phases using a mixed methods approach. Phase I (5 months) will involve initial adaptation of the CC model for depression to ED/AUD (referred to hereafter as CC-AUD). During this phase, relevant CC for depression protocols, measures, and procedures will be adapted for ED/AUD and piloted test on 15-20 participants recruited in a PCMH. Phase II (6 months) will involve model refinement based on iterative cycles of patient and PCMH staff feedback. During this phase, participants (n=60) will be recruited, assessed, and followed for three months. Iterative development will focus on two themes: 1) maximizing patient engagement while balancing this feature with 2) the resource and expertise constraints of treating ED/AUD in a PCMH. Study results will be analyzed and lessons learned will be used to develop a refined model. a small randomized controlled trial (RCT) of the model..

Aim I. Adapt the CC model for depression to treat ED/AUD and implement the model (CC-AUD)

in a PCMH.

Aims II. Use iterative, recursive, and bidirectional features of the stage model to refine CC-AUD

using a mixed methods approach.

Specific hypotheses are not provided for Phases I and II of the study as we are exploring and refining possible model options. For Phase III of the study, which is the randomized controlled trial and will be submitted as a separate IRB protocol, will provide specific hypotheses on what we expect to see from the models.

5) RESOURCES AVAILABLE TO CONDUCT THE HUMAN RESEARCH

Subjects will be recruited as part of normal SBIRT procedures already being conducted at the 865 Northern Boulevard General Internal Medicine site in Great Neck, NY. Normal SBIRT procedures include the pre-screening of all scheduled patients by medical assistants to identify initial substance use risks, and then further assessment to identify risk classification of the patient based on their substance use patterns and counseling by an SBIRT Health Coach for patients as needed based on this assessment. Patients identified as excessive drinkers during the standard SBIRT procedures will be asked by the SBIRT Health Coaches (HCs) about their interest in a study on treatment for problematic alcohol use in the primary care setting. As all clinic patients are being routinely screened for alcohol, we will have a large pool of patients screened from which to identify excessive drinkers. Based on SBIRT data collected, we estimate that 75% of the patients or about 33 per month have a primary alcohol problem and would not be excluded for other reasons. We estimate that about 2/3 of eligible participants would be classified as at-risk drinkers with the remainder in the other categories (i.e., Problem Drinkers, Alcohol Use Disorder with Physiological Withdrawal, and Alcohol Use Disorder with Chronic or Complex Presentation). Thus, assuming that 50% consent to participate, we estimate n=24 participants per month would be available to enroll in the study and about eight of these would meet problem drinking criteria. We note that of the 526 participants screening positive and offered a brief intervention at the 865 Northern Boulevard site, only 3 refused. Thus, we anticipate a positive response from participants and consider our recruitment projections as conservative estimates.

6) RECRUITMENT METHODS

Participants will be recruited via the SBIRT program at the 865 Northern Boulevard General Internal Medicine Clinic. In addition, patients of other Northwell Health Department of General Internal Medicine (DGIM) sites may be referred to the 865 Northern Boulevard practice to participate in this study. All patients receive SBIRT screening, conducted by the Health Coaches (HCs). During the screening, HCs will identify potential participants for this study based on study eligibility criteria. For individuals who screen positive and meet study criteria, the HC will offer the opportunity to participate in the study and conduct further assessment if the individual is interested. In cases where individuals are ambivalent about participation, they will be handed an informational card about the study with a way to contact study staff. This card will be submitted to the IRB for approval prior to distribution to patients.

7) ELIGIBILITY CRITERIA

We expect to recruit a total of 85 participants for Phase I and II of this study based on the following inclusion/exclusion criteria:

Inclusion Criteria: Participants must: 1) receive care at the 865 Northern Boulevard General Internal Medicine clinic and/or other Northwell Health DGIM sites; 2) have an estimated weekly consumption of greater than 14 drinks for men and 7 drinks for women or experience

at least one binge drinking day (i.e., 5 or more drinks for men and 4 or more drinks for women) per week; 3) demonstrate observable fluency in English language; 4) have no recognizable cognitive impairment.

Exclusion Criteria: Participants will be excluded from the study if they: 1) report substance use other than cannabis, nicotine, or caffeine in the last year; 2) report using cannabis "daily or almost daily" and that this use is problematic and the primary concern compared to their alcohol use, as indicated in the SBIRT screening; 3) present with a serious psychiatric illness or substantial suicide or violence risk, as assessed via a chart review, reported by the primary care treatment team (e.g., the Primary Care Physician [PCP]), and/or reported by the potential participant in the initial screen; 4) are on probation or parole as reported in the initial screen; 4) have an organic mood/mental disorder; 5) is pregnant, breastfeeding, or trying to become pregnant as reported in the initial screen; 6) report being enrolled in current substance use treatment in the initial screen.

8) NUMBER OF SUBJECTS

In the 865 Northern Boulevard primary care setting from where participants will be recruited and seen, approximately 526 patients are pre-screened per week for alcohol use problems. Of these patients, approximately eight receive alcohol use brief interventions. It is estimated that all 526 patients will be pre-screened for our study and the eight who receive brief interventions will be offered to participate, if they meet initial eligibility criteria. We expect that 50% of these patients or 4 individuals per week will be consented into our study. Other DGIM sites from where staff can refer patients to the study, the number of pre-screens for alcohol use problems are comparable. As a result, we expect to enroll a total of 85 participants, which includes 25 for Phase I of the trial and 60 for Phase II.

9) STUDY TIMELINES

Enrollment for the proposed study is expected to last for approximately one year. Each participant will be in the study for 12 weeks. We expect to complete this study (Phases I and II) in Fall 2017.

10) ENDPOINTS

Over the 12 weeks of the study, there will be five assessment points at weeks 0, 1, 4, 8, and 12, which all participants will receive. Participant response and safety will be assessed at each assessment point. In addition, participants will be monitored daily via Ecological Momentary Assessment data (EMA) comprising a brief questionnaire about their drinking. The HC will monitor participants' adherence to these surveys and their study visits and make outreach as needed. Notably, participant response to treatment will be assessed at week 4 and a stepped-care approach will be applied in the case that the participant has not responded to the initial treatment that he or she chose. For instance, participants who chose to receive a behavioral intervention will be offered medication (i.e., naltrexone) if they have not shown progress in their treatment as evident by a significant reduction in drinking.

Some participants will also attend treatment appointments in the 12 weeks of this study, some of which will overlap with the assessment appointments. Participants will have biweekly medication management appointments and/or potentially 4 to 12 sessions of behavioral treatment.

11) RESEARCH PROCEDURES

During Phase I (Initial Model Implementation), we will prepare all relevant new materials, adapt existing treatment and assessment protocols, fine-tune all new procedures, and train the primary care treatment team (including HCs, Medical Doctors [MDs], Nurse Practitioners [NPs], Registered Nurses [RNs], and Behavioral Health Specialists [BHSs]) on the new intervention protocols. Because all staff are currently either working as part of SBIRT or in other roles in Psychiatry and Medicine, we anticipate a rapid start-up. In addition, the BHSs are already trained in the delivery of the proposed interventions.

During Phase II (Iteration and Model Refinement), we will iterate and refine the model that was tested in Phase I. We will focus on key issues of patient engagement, balancing treating patients within the PCMH versus need to refer complex cases to specialty care as well as issues related to staff burden, workflow and resources. We will focus on examining the utility of medical record screening, refining the content and methods to deliver personalized feedback on alcohol consumption and health and assessing their impact of increasing patient motivation as well as PCP receptivity to including alcohol interventions as part of PCMH care. We will pay special attention to tracking non-adherence, and adjusting interventions for non-responders. We will also carefully examine workflow and resources required to manage patients. For example, how much time is required from specialist consultants and what types of consultation (e.g., caseload supervision, patient consults) are most informative. We will use these data to generate an estimate of staff resources required to treat eligible participants.

Below we describe the procedures to be conducted at each endpoint in both phases of the study, in addition to specific procedures related to our stepped-care approach and risk/safety monitoring.

Week 0: Pre-enrollment: Participants will be recruited through the Screening, Brief Intervention, and Referral to Treatment (SBIRT) program that is already a standard practice in the primary care site, where they are patients or to which they are referred to from other Northwell DGIM sites. As part of SBIRT standard practice in this setting, all patients are systematically screened for risky alcohol use by a medical assistant and a health coach, using the Alcohol Use Disorders Identification Test (AUDIT), a self-report validated screening tool. In addition, for patients who screen positive for risky alcohol use, the HC provides a brief intervention, which includes feedback about their drinking, a discussion about motivation to reduce use, and planning around reducing or stopping alcohol use. During this interaction, HCs will assess if patients are eligible for the study based on the criteria. The HC will provide a brief explanation of the study to patients who appear initially eligible to participate. Further eligibility screening will be provided either that day or another day when the patient is available, if he or she expresses interest in participating.

Week 0: Eligibility Screening: Participants will be recruited for this study based on our inclusion/exclusion criteria described above. Those participants who are interested in the study will be initially consented (General Consent) by the HC and will complete further measures (i.e., the Timeline Follow Back [TLFB] for the past 60 days and the Composite International Diagnostic Interview-Alcohol Module [CIDI-Alcohol]), assessing for drinking criteria and establishing risk classification for treatment options. Other inclusion/exclusion criteria (i.e., drug use, mental/organic disorders, suicide/violence risk, legal involvement, and pregnancy) will be evaluated at this point via self-report, chart review, and/or in consultation with the primary care clinical team (e.g., the primary care physician). Patients who endorse withdrawal criteria on the

CIDI-Alcohol (i.e., endorse experiencing at least two withdrawal symptoms in the last year after not drinking for a few hours or days, if any of those symptoms include hallucinations or seizures, or if they report drinking to reduce withdrawal symptoms in the last year) will also meet with a Registered Nurse (RN; supervised by an MD), Nurse Practitioner (NP), or a Medical Doctor (MD) to assess active withdrawal symptoms and appropriateness of outpatient detoxification treatment. In such cases, the RN/NP/MD will complete the Clinical Institute Withdrawal of Alcohol Scale, Revised (CIWA-Ar) and assess for medical (e.g., brittle diabetes, unstable heart failure, advanced liver disease) and compliance (e.g., no family support at home to assist) issues with which outpatient detoxification would be contraindicated. Those participants who do not have medical or social contraindications and score below 15 on the CIWA-Ar will be offered outpatient detoxification as part of standard care at the 865 Northern Boulevard Internal Medicine Clinic. These participants will be grouped in the AD-W group and offered treatment as per the description below. Participants' insurance will cover the cost of the detoxification treatment. Participants who score above15 on the CIWA-Ar or experience medical and/or social contraindications for outpatient detoxification will be referred for inpatient detoxification or other warranted treatment and classified into the AD-CMPLX group, as described below.

Eligible participants will be classified (i.e., random assignment will not be used) into one of four groups by the HC after the above assessment is completed:

At-Risk Drinkers (AR). AR will include individuals who exceed NIAAA guidelines for weekly consumption (>14 standard drinks [SD] for men or 7 drinks for women), those who exceed NIAAA daily limits (>5 SD for men or >4 SD for women), or those whose medical conditions contraindicate any alcohol consumption. AR will be followed up at week 4, 8, and 12 assessments and will not be offered additional treatment after the brief advice they receive as part of SBIRT.

Problem Drinkers (PD). PD will be defined based on weekly consumption (> or = 24 SD for men or > or = 14 SD for women) or a pattern of regular binge drinking (>3 times per month). PD will be offered a choice of either four sessions of Motivational Enhancement Therapy (MET) or 12 weeks of daily naltrexone with medication management.

Alcohol Use Disorder with Physiological Withdrawal Drinkers (AD-W): Participants meeting criteria for DSM-5 Alcohol Use Disorder with physiological withdrawal will receive outpatient detoxification as part of standard care, unless medically or socially contraindicated (described above). Upon completion of outpatient detoxification, participants will be offered 12 weeks of daily naltrexone plus medication management or 12, weekly sessions of Modified Behavioral Self-Control Therapy (MBSCT).

Alcohol Use Disorder with Chronic or Complex Presentation Drinkers (AD-CMPLX): Participants in this group will include those who meet criteria for DSM-5 Alcohol Use Disorder, report inpatient treatment for alcohol use and/or other mental health issues within the last five years, experience social problems (i.e., unstable housing) that would suggest the need for more intensive psychosocial treatment, or are deemed not appropriate for outpatient detoxification treatment and in need higher-level of care as assessed by the NP/MD performing the CIWA-Ar assessment. Participants classified at *AD-CMPLX* will be referred to specialty substance use treatment based on the SBIRT protocol, where participants are referred to an outpatient treatment program that best fits their needs. In the case that these participants refuse a referral to speciality care, a second attempt will be made to do so at week 1. In the case that the second attempt is not successful, they will be offered MBSCT, abstinence-based treatment, focused on connecting them with specialty care, as part of the study.

Once participants are grouped and offered treatment options for their risk classification, they will choose a preferred treatment course and be scheduled for their next appointment with an RN/NP/MD to administer naltrexone or a Behavioral Health Specialist (BHS) to conduct the behavioral interventions. Each respective clinician will complete either the Medication Intervention Consent or the Behavioral Intervention Consent with the participant at their next appointment. Notably, participants are free to change their treatment choice during the consent process (described below) with the clinician. If they do so, they will be scheduled for another appointment with the appropriate clinician. All participants will be informed that they are being asked not to pursue any other formal substance use treatment until after the week 12 assessment of the study, unless they are in the AD-CMPLX group and referred to treatment as part of this study. If they decide to pursue alternative treatment, study staff will facilitate referrals. The participant will continue to be followed in the study via follow up assessments in order to learn about the progress of the participant which is valuable in our effort to test a feasible treatment model.

Weeks 1-12: During this period, participants in the PD and AD-W groups will receive treatment (see procedure as follows) and assessments, while the AR and AD-CMPLX groups will be followed in assessments only. All groups will be assessed for appropriateness of stepped-care at week 4.

Participants, who choose the medication intervention, will attend medication management in-person at the primary care clinic. Appointments would be conducted by a NP, an MD, or an RN, who is supervised by an MD,. These appointments will occur weeks 1, 2, 4, 6, 8, 10, and 12. At their week 1 appointment after consent has been signed, the medical professional will assess the participant for appropriateness to take medications. They will conduct a medical exam, review the participant's chart, and may consult with his/her primary care clinical team.

Participants who choose behavioral interventions will have appointments conducted at the primary care clinic or via televideo, based on the preference of the participant. Behavioral Health Specialists (BHSs), who are licensed therapists or therapists supervised by licensed clinicians, will conduct the treatment. Participants receiving MET will have four sessions at weeks 1, 2, 4, and 8. Participants receiving MBSCT will receive weekly sessions from week 1 to 12.

In addition to regular treatment appointments, follow up assessment appointments will occur with the HC at weeks 4, 8, and 12. Each assessment appointment will occur after the treatment session scheduled for that day. These appointments can occur in-person or via televideo based on each participant's preference and will be conducted by the HC. At each appointment, the participant will complete the Timeline Follow Back (TLFB), a treatment addendum, and patient satisfaction measures. Participants will be monitored for risk and safety at each of these appointments as described below.

Furthermore, at week 1, participants will meet with a HC to complete a demographics questionnaire and receive training and instruction on the Ecological Momentary Assessment (EMA; described below). Because participants will be using smartphones, we will show them how to use their phones in a way that increases the security and confidentiality of the online surveys and the texts they receive. Based on our experience in previous studies, participants complete about 80% of the required surveys, which is significantly higher than expected. Note that EMA data is in electronic format and available in real-time to the HC. We will monitor EMA diary completion continuously to increase compliance and will have the required data available

for safety monitoring. Participants will have the option to participate in the study even if they do not have a smartphone or refuse to use it to complete EMA. In such cases, participants will not complete EMA.

At week 4, participants will be assessed for response to the treatment intervention that they chose and offered an alternative treatment via the stepped care procedure below in the case that they do not respond. Response will be defined as drinking below study drinking inclusion criteria and demonstrating adequate progress in treatment without adverse response (based on clinician's assessment of participants' drinking, attendance, engagement, and effort and/or possible side effects if receiving naltrexone). A participant will be deemed a non-responder if his or her drinking exceeds NIAAA guidelines for weekly (>14 SD for men or 7 drinks for women) or daily (>5 SD for men or >4 SD for women) limits.

Stepped Care: Participants will be offered stepped care if they are deemed to be a treatment non-responder at their week 4 appointment. During their treatment visit at week 4, they will be assessed by the HC and their clinician for treatment response based on the criteria described above. The HC will assess participants' drinking based on NIAAA guidelines and the clinician will assess participants' progress in treatment. If a participant is deemed a non-responder, the clinician will discuss alternative treatment options with him or her. Stepped care options will be offered to the AR, PD, and AD-W risk classification groups at their week 4 assessments in the following way:

For the AR group, participants who are deemed non-responders will be offered an additional session of Brief Advice similar to what they received as part of the SBIRT protocol. This additional session will occur at the same time as their assessment appointment at week 4.

For the PD and AD-W groups, participants, who chose a behavioral intervention, will be offered naltrexone and medication management. These participants will be scheduled for an appointment with the respective clinician, preferably in the same week, in order to undergo consent, to evaluate medication appropriateness, and, if appropriate, to commence with the alternative treatment. Participants, who chose naltrexone and medication management, will be offered either a behavioral intervention (i.e., MBSCT) in addition to naltrexone or topirimate as an alternative medication for reducing drinking. This medication will be started on the same day, while the behavioral intervention would be scheduled for a different appointment with a BHS, where an additional consent would be completed. Participants will have the option to deny alternative treatment if they believe it is still the appropriate course of action during these phases of the study as long as it appears safe for them to continue (e.g., no adverse side effects to the medication are noted). The goal is to learn about the effectiveness of these different treatment models in these phases of the study through an ecological application of the models in a clinical setting, where patients would otherwise be free to deny an alternative treatment.

Risk/Safety Monitoring: Participants of this study will be patients who are receiving care at the 865 Northern Boulevard Internal Medicine Clinic or another Northwell Health DGIM site Therefore, their health is actively monitored by the Primary Care Physician (PCP) at the clinic, who will be notified of the participant's participation throughout the study. In addition to this monitoring, the clinicians meeting with the participants for treatment will assess their well-being at each assessment (at weeks 4, 8, and 12) along with the HC drinking assessments and the daily EMA data monitoring. At the week 4, 8, and 12 assessments, the clinicians will

perform a risk and safety assessment. Significant deterioration of note is defined as a significant increase in drinking since the baseline interview (more than 25%); a significant increase in depression, anxiety, or other mental health symptoms; instability in life circumstances that would suggest a need for immediate treatment; or suicidal or homicidal ideation. If any of these indicators are present, as a first-line of treatment, participants will be referred to the clinical team at the primary care clinic for additional treatment or evaluations. If a higher level of care is warranted, participants will be referred to appropriate care, such as intensive outpatient treatment, inpatient detoxification, or outpatient psychiatric treatment, and continued to be monitored at their assessment visits. For participants who present an imminent risk of harm to self or others, or an inability to care for themselves, the primary care clinical team will evaluate the patient to determine the need to activate EMS, who will then take the patient to the emergency room to be evaluated for possible inpatient psychiatric admission.

Visit Scheduling and Follow-up: In our experience with longitudinal psychotherapy intervention studies, participants often need to reschedule appointments for various reasons. In order to maintain integrity of the data, when a participant needs to reschedule, every attempt will be made to schedule the visit within the same week (i.e., if the participant cannot attend a visit on the first day of week 4, we will attempt to reschedule them at some other point within week 4). In an effort to reduce retention, we will also offer televideo and/or telephone options for all visits. In addition, if a participant misses an appointment (e.g., loss of contact, participant had an unexpected conflict, etc.), study staff will attempt to follow up with that participant and collect data for the missed appointment as soon as we are able to reach the participant and/or reschedule; ideally, this would occur within a week of the missed appointment. However, since our primary outcome measure (Timeline Follow Back) is continuous throughout the 12 weeks of the study and our data analytic methods (e.g., Generalized Estimating Equations) can accommodate uneven intervals between visits, if we are unable to reschedule a participant within a week of their original appointment date, we will continue to attempt to reschedule their visit until the participant withdraws consent for participating in the study or until the Principal Investigator determines that it is no longer feasible to attempt to locate the participant (if out of contact). Our primary aim when a participant misses a visit and/or falls out of contact is to determine whether the participant is at risk due to heavy drinking or other factors and to help the participant find the appropriate resources if necessary. Thus, we feel it is important to continue to follow up with participants who have missed visits for as long as is necessary to determine that they are safe. This plan is clearly communicated to participants during their enrollment and is verbally reinforced during the scheduling of visit appointments.

Daily online questionnaires: Ecological Momentary Assessment (EMA) is a global term used to describe techniques to collect data in the real world. For example, filling out a daily data diary would be considered a kind of EMA. For this study, EMA involves brief internet-based surveys. Participants will be asked to complete a brief, online survey every morning for the 11 weeks of participation (i.e., weeks 1 to 12). Participants will use their personal smartphone. Smartphones will be utilized for receiving text messages to prompt participants to complete the online survey. Each morning survey requires approximately one minute to complete and will ask about daily use of alcohol. We have used similar scripts previously (in our R01 study of MI), and they are attached to this protocol. Participants, who do not have a smartphone or wish to not use their smartphone as part of this study, will be free to opt out of this part of the study.

Study Setting. Whether participants are recruited from the 865 Northern Boulevard Primary Care Clinic or referred from another Northwell Health DGIM primary care site, this study will be conducted at the 865 Northern Boulevard site. It is located in Great Neck, NY, has been designated a Level 3 Patient Centered Medical Home (PCMH) since 2009. It was one of the first medical homes in the lower New York State region and includes both a faculty and resident practice with approximately 32,000 visits per year. Patients from a variety of socioeconomic band ethnic backgrounds are cared for by 16 faculty providers and 72 internal medicine residents. In addition to medical staff, the practice includes a clinical psychologist, 2 nurse practitioners, 2 social workers, a certified diabetes educator, a clinical pharmacist and a nutritionist. Medical assistants, nurses, and administrative staff support clinical staff members. These practitioners are part of the clinical team at this practice, and they provide regular monitoring/care for participants of this study. The practice uses the Allscripts electronic health record (EHR) and has since pioneered many of the innovations and enhancements including the use of e-calculators for SBIRT screens and generation of clinical alerts.

The National Center on Addiction and Substance Abuse (CASA) will contribute to the theoretical development of the study as well as data management and analyses. This will include participation in project meetings, performance of data analyses, and preparation of manuscripts. There will be no consenting or data collection that will occur at CASA. All recruitment, consenting, and subject data collection will be conducted at Northwell Health. Notably, the SBIRT project is being conducted in collaboration with CASA.

12) SCHEDULE OF EVENTS

The table below indicates the measures that will be administered in this study and the time points at which each will occur.

Admin method	Measure	Wk 0	wk 1	wk 4	wk 8	wk 12
HC	Screening for inclusion/exclusion criteria	X				
HC	General Consent	X				
NP/MD/BHS	Medication OR Behavioral Intervention Consent		X			
HC	Enrollment note		X			
HC	Locator information	X				
HC	Demographic Questionnaire		X			
HC	CIDI-SAM (Composite International Diagnostic Instrument, Alcohol Module)	X				
RN/NP/MD	CIWA-Ar (Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised), if report withdrawal on CIDI-SAM	X				
HC	TLFB (Time-Line Follow-Back Interview)	X		X	X	X
HC	Treatment Addendum			X	X	X
HC	Patient Feedback Questionnaire					X
RN/NP/MD	Blood draw to assess liver function, if pt. chooses to receive medication		X	X	X	X

NP/MD/BHS	Study progress note			X	X	X
EMA	Daily text messaging surveys on drinking		X	X	X	X
HC	Study Termination note--time of completion depends on participant trajectory					X

13) INTERVENTIONS

Brief Advice (BA). BA will consist of a 20-minute session delivered by a health coach, closely adhering to the NIAAA's Clinician Guide to PD (National Institute on Alcohol Abuse and Alcoholism, 2005). This includes normative feedback based on NIAAA drinking norms (using data from AUDIT), goal selection, instructions on self-monitoring, discussion of drink reduction strategies, and distribution of NIAAA biblio-therapy guide. The rationale for using the NIAAA guide is that it contains elements that have been empirically linked to brief intervention success (Morgenstern, Kuerbis, Chen, et al., 2012; Morgenstern, Kuerbis, Amrhein, et al., 2012), and its use will foster generalization of study results to mainstream healthcare settings. Participants will have one session of brief advice provided by the HC during the pre-screening for the study. An additional session may be offered to the AR group as part of stepped care, if warranted.

Motivational Enhancement Therapy (MET): MET (Miller & Tonigan, 1992) is a motivational intervention shown to be effective in treating a broad spectrum of drinking problems in both abstinent (Project Match Research Group, 1997), and non-abstinent goal conditions (Miller, 1995). As adopted from Project MATCH, MET in this study focuses on resolving ambivalence about and increasing commitment to positive behavior change. MET in this study will be delivered as in a previous study (Morgenstern, et al., 2012a) over the 12-week treatment period with sessions scheduled for weeks 1, 2, 4 and 8. This treatment will be provided by a Behavioral Health Specialist (BHS), who is a licensed mental health clinician or is being supervised by a licensed clinician.

Modified Behavioral Self-Control Therapy (MBSCT): MBSCT was developed and implemented for a previous study, (Morgenstern & McKay, 2007) in which we provided twelve weeks of psychotherapy for problem drinking men who have sex with men focused on reduction both of alcohol consumption and HIV risk behaviors. It is a combination of Motivational Interviewing and Behavioral Self-Control Training (Miller, Leckman, Delaney, & Tinkcom, 1992; Walters, 2001). In that study, treatment was focused on the dual problems of problem drinking and HIV risk behavior. For the present study, treatment will address only problem drinking. MBSCT is based on cognitive behavioral principles and is designed to modify critical behavior patterns that maintain excessive drinking. MBSCT aims to provide a more complete application of CBT theory by addressing motivational issues and by including a functional analysis of drinking behavior. The first stage of MBSCT is motivation enhancement therapy and is closely modeled on the MET intervention as described above. The second stage of treatment focuses on teaching the client the cognitive behavioral model of substance misuse, completing a functional analysis of drinking, and addressing specific coping skills for moderation of or abstinence from drinking behavior. This treatment will be provided by a Behavioral Health Specialist (BHS), who is a licensed mental health clinician or is being supervised by a licensed clinician.

Naltrexone+Medication Management (NTX): Those selecting medication will receive 12 weeks of daily naltrexone (50 mg) with medication management. Naltrexone is FDA-approved for the treatment of alcohol dependence at 50 mg/day. It has been effectively applied in previous studies (Kranzler et al., 2009; Morgenstern, et al., 2012b). To minimize any potential side effects, initiate treatment using a 25-mg dosage for the first week and as long as the medication is well tolerated will then increase to 50 mg daily. Participants will be instructed to call their study RN/NP/MD with any side effects or medication related concerns. A follow-up PCP visit at week 12 will be scheduled. Visit scheduled will be adjusted upward if there are reports of side effects or problems with non-adherence. Blood tests will be administered at baseline and week 4 to guard against liver toxicity (i.e., one 5 cc tube, the equivalent of one teaspoon, will be drawn monthly). Additional blood tests (i.e., one 5 cc tube, the equivalent of one teaspoon, will be drawn monthly) may be drawn if it is clinically indicated any time during the study. Unless a return to social drinking is contraindicated, participants will be offered a choice of moderation or abstinence goal treatment. Naltrexone treatment will be prescribed by an NP/MD or an RN, under the supervision of an MD. A medical exam and review of the patient's medical history will be conducted and, if deemed appropriate, the participant will receive a prescription. Then, they will then be seen by the RN/NP/MD weekly for the first two weeks of treatment, or until the participant's medication dose has been stabilized with minimal side effects. After stabilization, visits will take place biweekly. Participants will have medication management appointments at weeks 1, 2, 4, 6, 8, 10, and 12. At these medication management visits, the RN/NP/MD will assess participants' medication compliance, potential side effects, and their current drinking.

14) STATISTICAL ANALYSIS The specific aims of Phases I and II of this study are: Aim 1: Adapt the collaborative care model for depression to treat excessive drinking and alcohol use disorders and implement the model, to be called CC-AUD, in a primary care practice. Aim 2: Use iterative, recursive, and bidirectional features of the National Institutes of Health stage model to refine the CC-AUD model. In both phases iterative analysis and experimenting with new approaches will be ongoing. However, at the end of Phase II we will conduct a formal study of model implementation and results using a mixed methods approach. We describe the quantitative portion here and the qualitative portion below. We will calculate descriptive statistics such as means, medians, SD, range and frequencies to create a baseline description of the sample, examine various measures of treatment compliance (e.g., sessions attended, medication adherence), and drinking outcomes reported on the TLFB to include: number of heavy drink days, number of abstinent days, and weekly sum of standard drinking. Alcohol use data are often not normally distributed; therefore, we will examine outcome distributions using graphs (e.g., histograms) in order to inform model selection. Depending on the nature of the outcome variable distribution and the data, we will use multiple regression or Generalized Estimating Equations (GEE) models with the best outcome distribution (e.g., normal, Poisson, negative binomial) to examine predictors of treatment compliance and drinking outcomes. We will examine characteristics of the sample who participated relative to those who refused using screening and brief intervention study data using statistics to estimate differences between groups (e.g., t-test and chi-square). We will analyze qualitative data collected from patients and staff notes. Qualitative data will be input into NVivo 9 software. Qualitative themes around patient engagement and staff burden will guide the analysis. First, Dr. Morgenstern (PI) will develop meta-themes and sub-themes based on the literature and the data. These themes will be reviewed by Dr. O'Grady (co-PI). Next, a research assistant will code the transcripts for themes. These will be reviewed by Dr. O'Grady and discrepancies will be resolved. We will triangulate data across qualitative and quantitative sources to examine whether patients respond to alcohol treatment in a PCMH

and whether the alcohol collaborative care model features implemented are compatible with PCMH staff resources, workflow, and expertise.

15) DATA MANAGEMENT AND CONFIDENTIALITY

To avoid breach of confidentiality, participants' data will be primarily maintained in HIPAA-compliant applications, such as our platform and REDCap. Any other electronic data will be stored only on computers with a BIOS password to prevent access by unauthorized users and users must login following 10 minutes of inactivity. Each file will be password protected and will only be stored on network-encrypted drives. If any data has to be printed for monitoring or tracking, it will be kept double locked (i.e., in a locked cabinet, in a locked room) to maintain their security. All study data forms will contain only the participant's unique study identification number, using a reference system maintained by the PI. Completed study charts will be kept in a locked cabinet. The key to such data and access to any of the above-mentioned data will be available only to the PI and study research staff. Lastly, participant visits will be scheduled, and no information about the participant will be provided to anyone (except in emergencies as defined above) in person or by telephone.

There is no personal health information that could identify an individual by seeing their web-based assessment data and the codes that match participant information to their unique codes are kept secure.

To avoid breach of confidentiality, participants' names will appear only on a consent form, a telephone screening form and a "key" form that is password protected maintained on Northwell Health's REDCap servers. All forms that contain identifying information will be kept double locked (i.e., in a locked cabinet, in a locked room) to maintain their security. All study data forms will contain only the participant's unique study identification number, using a reference system maintained by the PIs. Completed study charts will be kept in a locked cabinet, the key to which will be available only to the PIs and study research staff. Participant visits will be scheduled, and no information about the participant will be provided to anyone (except in emergencies as defined above) in person or by telephone. The study will be conducted in an outpatient clinical trials clinic at a site in which treatment is provided to participants who have a variety of psychiatric problems, not limited to substance abuse.

Identifiable information will be retained for seven years post study completion. All de-identified data will be retained for use under the PIs' discretion. Only individuals who are listed as study personnel will have access to the data collected. The PIs will monitor appropriate handling of data to secure confidentiality and integrity.

16) DATA AND SAFETY MONITORING PLAN

- The PIs of the study will monitor study data and safety of participants every six months or more often via regular study team meetings. They will be responsible for:Reviewing the research protocol and planning for data and safety monitoring.
- Monitoring that will take place on a regular basis (every 6 months or more often).
- Evaluating the progress of the trial, including periodic assessments of data quality and timeliness, participant recruitment, accrual and retention, participant risk versus benefit, and other factors that may affect study outcome. Monitoring may also consider factors external to the study when interpreting the data, such as scientific or therapeutic developments that may have an impact on the safety of the participants or ethical issues related to the study.

- Inquiring for further information as necessary to accomplish their mission.
- Maintaining confidentiality during all phases of the trial including the monitoring, preparation of interim results, review and response to monitoring recommendations.
- Generating a report that will be provided to the PI, the IRB, and NIAAA

Specifically in regard to safety monitoring, participants of this study will be patients who are receiving care at the 865 Northern Boulevard Internal Medicine Clinic or another Northwell Health DGIM site. Therefore, their health is actively monitored by the Primary Care Physician (PCP) at the clinic, who will be notified of the participant's participation throughout the study. In addition, the clinicians meeting with the participants for treatment will assess their well-being at each assessment (at weeks 4, 8, and 12) along with the HC drinking assessments and the daily EMA data monitoring. In the case of significant deterioration in drinking and/or mental health (as outlined in study procedures), participants will be referred to the clinical team for additional treatment or evaluations. If a higher level of care is warranted, participants will be referred to appropriate care, such as intensive outpatient treatment, inpatient detoxification, or outpatient psychiatric treatment, and continued to be monitored at their assessment visits. For participants who present an imminent risk of harm to self or others, or an inability to care for themselves, the primary care clinical team will evaluate the patient to determine the need to activate EMS, who will then take the patient to the emergency room to be evaluated for possible inpatient psychiatric admission.

17) WITHDRAWAL OF SUBJECTS

The goal of Phases I and II is to provide a treatment-team based approach to care for individuals with Alcohol Use Disorders that would be inclusive all those in the primary care setting in order to truly craft a feasible model. Therefore, during these phases of the study, rather than withdrawing participants who may have experience deterioration, we would provide them with alternative treatment via the in-house clinical team (as would be the standard for any primary care patient; e.g., referral to social work) or refer them to outside intensive treatment, while still offering them in-house monitoring as part of the study. The RN/NP/MD/BHSs will provide regular monitoring of participants to assess for possible deterioration and need for alternative treatment. Likewise, participants will be seen and regularly monitored in the primary care clinic as part of standard care.

18) RISKS TO SUBJECTS

General Procedures: There is some risk that participants will be identified as participants in a study of the treatment for heavy drinking or that clinical assessments will adversely affect participants' well-being. Inadvertent breach of confidentiality concerning drinking behavior is also a risk. To protect against any breach of confidentiality, study procedures will be conducted in a private and confidential clinical setting. All data will be collected and stored on secured computers in secure databases or in locked file cabinets with patient identity being kept separate from their research materials. Participants will only be identified with a number, and the key for matching these numbers to the participant name/contact information will be kept in a separate locked location.

Behavioral Interventions. The proposed behavioral interventions are evidence-based and patient-centered. They have been used with those who drink excessively in a variety of settings. Psychological risks are minimal and not different from those of equivalent non-study treatments. All counseling will be conducted in a private and confidential setting. Subjects will

be able to end behavioral counseling at any time, if they experience any discomfort.

Rating Scales and Questionnaires: While the proposed assessments are all non-invasive and add no special risks, they do cover sensitive areas. Participants may feel uncomfortable answering questions about and discussing their drinking. Study personnel will be training to create a non-judgmental and comfortable environment to allow participants to share freely; participants will also be allowed to decline to answer and/or discuss topics in the situation that they are not at ease. The major disadvantage is the time taken to complete them, and the potential for breach of confidentiality. We will also provide participants will time expectations to complete their appointments, as well as allowing them to be completed via REDCap while at home whenever possible. Additionally, careful efforts to maintain confidentiality that have been effective in our previous research will be continued.

Daily Questionnaires: The primary concern to confidentiality is that there may be an inadvertent breach of confidentiality concerning problem drinking behavior. It is possible that since participants will be receiving messages on their personal mobile phones, another person may view a message specific asking about alcohol use from an unguarded phone. While unlikely, it is possible that there may be a breach of confidentiality if a participant's cell number is obtained through the REDCap computer database. We have a similar protocol that is currently approved by the IRB (14-299) and we have had no adverse events with this protocol which sent 100s of messages about drinking to participants. Already approved protocol 14-299 uses an outside vendor and therefore this study will be even more secure because we are using REDCap. There have been multiple studies using text message as a means to communicate patient information of much more sensitive information. To reduce any possible breaches of confidentiality, participants will be offered instructions on how to: 1). Change message settings to alert individuals that an SMS message has been received but do NOT display or preview any of the message. This ensures that a third party cannot passively see the message on a participants phone because no information is provided. 2). Inform individuals to add a security code to their phone in which one must enter the security code to view a message. 3). Inform individuals to create a contact to which they would feel comfortable receiving a message. For example, they can program their phone to display the name, Bob Jones every time we send them a message. 4). Inform the participants that they should keep their phone on their person or in a secure location at all times. 5). Inform participants on how to delete all messages from a particular sender.

Medication: Participants identified as problem drinkers may choose to receive a medication intervention that includes naltrexone (50 mg per day). According to the package insert for naltrexone,the medication has been associated with liver toxicity at very high doses (up to 300 mg/day); however, a number of clinical trials and published studies suggest there are few serious adverse effects, including minimal hepatotoxicity, associated with 50 mg of NTX daily. Notably, naltrexone is an FDA-approved for alcohol use disorder and is not an experimental drug. The most common side effects patients report experiencing from taking naltrexone are nausea, vomiting, anxiety, headache, abdominal discomfort, difficulty sleeping, fatigue, irritability, and decreased appetite.

In the present study protocol, we propose to monitor self-reported side effects weekly for the first two weeks or until the participant's medication dose has been stabilized, and then biweekly. Monitoring and medication management will be conducted by an RN/NP/MD, and the PCP will also see the patient at baseline and at 12 weeks post-prescription for monitoring. We will monitor liver function monthly, and we will conduct more frequent medical monitoring as appropriate. These measures should ensure that any potential risk to

participants is minimized.

For participants who need stepped up care as previously described, one option is a trial of Topiramate for those who fail to respond to Naltrexone. Topiramate is an FDA-approved medication for the prevention of seizures and migraine headaches. It is also recommended and often used clinically as a second line medication for treatment of alcohol use disorder, however, it is not FDA-approved for alcohol use disorder at this time. The most common side effects are fatigue, difficulty concentrating, paresthesia's, memory impairment, dizziness, and weight loss.

To avoid breach of confidentiality, participants' names will appear only on locator form and a "key" for these forms will be kept by the PI in a locked cabinet. All forms that contain identifying information will be kept double locked (i.e., in a locked cabinet, in a locked room) to maintain their security. All study data forms will contain only the participant's unique study identification number, using a reference system maintained by the PI. Completed study forms will be kept in a locked cabinet, the key to which will be available only to the PI and study research staff. All electronic files (e.g., database, spreadsheet, etc.) containing identifiable participant information are password protected. All computers hosting such files have a BIOS password to prevent access by unauthorized users. Research staff will have a secure login to access study data. All research staff that will be involved in the proposed study are knowledgeable and experienced in dealing with confidentiality issues and any new staff will be trained rigorously. Ongoing training will be provided on human subjects issues.

Benefits. Participants will benefit from the study by being able to receive treatment for their problematic alcohol use within their regular primary care practice, rather than needing to procure services from an external treatment facility or opt not to pursue treatment at all. They will receive additional monitoring and connection with healthcare staff rather than potentially disconnected treatment between healthcare and substance abuse care.

19) RESEARCH RELATED HARM/INJURY

As part of their participation in the study, participants who choose medication treatment may experience side effects from the medications (i.e., naltrexone and/or topirimate). Participants' response to these medications will be closely monitored by an RN/NP/MD in this study. In addition, all participants in this study are patients of the 865 Northern Boulevard Primary Care Clinic (or another Northwell DGIM site), where their overall health is regularly monitored by their PCP. For participants who receive outpatient detoxification before starting treatment in this study, they will have access to an on-call physician in the clinic at all times and will be closely monitored by the RN/NP/MD performing the detoxification. These on-call physicians will assess participants' status and recommend scheduling a visit or instructing participant to call 911 or go to the nearest emergency room in cases of deterioration or non-compliance with detoxification protocol and urgent care is warranted.

In the case that participants' drinking increases and they appear to need a higher level of care, they will be referred to inpatient or outpatient treatment outside of the clinic, which will also be the case for participants who appear to require inpatient detoxification. Participants will continue to be followed in the study but will be responsible for the cost of such care.

20) POTENTIAL BENEFIT TO SUBJECTS

Direct benefits to participants include careful evaluation of their alcohol use and potential reduction in alcohol consumption, which may improve their health and well-being. In addition, there are benefits that this research will contribute to public health. Alcohol Use Disorder

(AUD) is a highly prevalent and costly health condition that disproportionately affects young people and is among the leading causes of disability worldwide for individuals ages 18-45. A number of effective psychosocial and pharmacological interventions exist to treat AUD. However, these interventions are modestly effective, and there is a surprising absence of empirical research to guide treatment selection based on individual need. In addition, although there is a significant need to provide treatment for individuals with AUDs, it appears little is known about providing this treatment in primary care. Participation in this study could contribute to the development of a model of monitoring and treatment of AUDs in a primary care setting.

21) PROVISIONS TO PROTECT PRIVACY INTERESTS OF SUBJECTS

Participants will be recruited as part of normal SBIRT procedures at the 865 Internal Medicine practice site or referred from another Northwell Health DGIM primary care practice. SBIRT Health Coach (HC) will provide Brief Advice with patients identified as excessive drinkers or having AUD as noted above, the HC will then describe the study and determine the patient's interest, and if the patient is interested, the HC will conduct further assessment and complete the initial plan for treatment. The HC will also consent the participant to the general study procedures by explaining the study protocol, study risks, potential benefits, and alternative treatment options. This recruitment will be conducted in a private setting (i.e., in a private office at the 865 Northern Boulevard Internal Medicine Clinic or another Northwell Health DGIM primary care site). Information obtained from the patient is kept confidential as all clinic staff is trained to maintain HIPAA compliance. If a participant will express interest in the study, his or her information will be input into REDCap to maintain confidentiality of identifiable data. Once in the study, all assessments, treatment visits, and study communications will be conducted in a confidential and private setting (e.g., at the primary care setting or via Webex, which is a HIPAA-compliant software). Identifiable information will not be shared and will only be stored in REDCap. Participants will be trained on protecting their smartphones when using them for the study.

22) COSTS TO SUBJECTS

Study-related visits will be given at no additional cost. For participants who choose to receive medication as part of the study, their insurances will be billed to cover the costs of this treatment and the lab work. The study will pay for their co-pays. If a participant does not have insurance or does not want their insurance to be used, the study will pay for the medication and lab work in full.

23) PAYMENT TO SUBJECTS

Incentives will be provided to patients to complete assessments at baseline, one-month follow-up and three-month follow-up at $20 per time point. Thus, participants could potentially earn up to $80. They will receive compensation on the ClinCard that will be provided at their week 1 appointment. Individuals who are screened but not eligible for the study will receive a $20 Amazon gift card for their screening assessment.

24) CONSENT PROCESS

Consenting for this study will be conducted as a two-step process—the first of which is General Consent to be conducted by the HC at week 0 and the second is a Medication and/or Behavioral Intervention Consent to be conducted by the clinician performing the relevant treatment intervention (i.e., RN/NP/MD conducting naltrexone and medication management or a BHS conducting the behavioral interventions) at week 1 prior to starting treatment. All participants who are eligible will sign the General Consent with the HC at their Week 0 appointment. During that time when the participant is classified into a treatment group, he or

she will choose a medication or behavioral intervention treatment option that is offered for his or her risk classification in the study. Once a participant chooses a treatment option, he or she will be scheduled for an appointment with the clinician (RN/NP/MD for medication or a BHS for a behavioral intervention). At this following appointment, the participant will undergo consent for treatment with the relevant clinician. Notably, participants will be given the opportunity to change their treatment option to the other treatment offered for their risk group in the case that they do not wish to consent to the treatment they chose. For example, a participant in the Problem Drinkers group may choose to receive naltrexone and medication management in their initial appointment with the HC and will be scheduled to meet with the RN/NP/MD at the next appointment to consent and start treatment. At that appointment, they may still decide to not consent to the medication treatment and alternatively choose to receive the Motivational Enhancement Therapy (MET). They will be allowed to do so and a new appointment with a BHS, providing this treatment, will be scheduled in order to consent for and undergo MET instead.

25) REFERENCES/BIBLIOGRAPHY

Advancing Integrated Mental Health Solutions Center, University of Washington, Psychiatry & Behavioral Sciences Division of Population Health, 2015. Retrieved from aims.uw.edu

Alford, D. P., LaBelle, C. T., Kretsch, N., Bergeron, A., Winter, M., Botticelli, M., & Samet, J. H. (2011). Collaborative care of opioid-addicted patients in primary care using buprenorphine: five-year experience. *Archives of internal medicine, 171*(5), 425-431.

Anton, R. F., O'Malley, S. S., Ciraulo, D. A., Cisler, R. A., Couper, D., Donovan, D. M., . . . LoCastro, J. S. (2006). Combined pharmacotherapies and behavioral interventions for alcohol dependence: the COMBINE study: a randomized controlled trial. *JAMA, 295*(17), 2003-2017.

Babor, T. F., McRee, B. G., Kassebaum, P. A., Grimaldi, P. L., Ahmed, K., & Bray, J. (2007). Screening, Brief Intervention, and Referral to Treatment (SBIRT) toward a public health approach to the management of substance abuse. *Substance abuse, 28*(3), 7-30.

Baird, M., Blount, A., Brungardt, S., Dickinson, P., Dietrich, A., Epperly, T., . . . Korsen, N. (2014). Joint principles: integrating behavioral health care into the patient-centered medical home. *The Annals of Family Medicine, 12*(2), 183-185.

Bouchery, E. E., Harwood, H. J., Sacks, J. J., Simon, C. J., & Brewer, R. D. (2011). Economic costs of excessive alcohol consumption in the US, 2006. *American journal of preventive medicine, 41*(5), 516-524.

Bower, P., Gilbody, S., Richards, D., Fletcher, J., & Sutton, A. (2006). Collaborative care for depression in primary care. *The British Journal of Psychiatry, 189*(6), 484-493.

Butler, M., Kane, R. L., McAlpine, D., Kathol, R. G., Fu, S. S., Hagedorn, H., & Wilt, T. J. (2008). Integration of mental health/substance abuse and primary care.

Cavacuiti, C. A. (2012). *The essentials*: *Principles of addiction medicine:* Lippincott Williams & Wilkins.

Center for Health Care Strategies, Inc. (2014). Medicaid Health Homes: Implementation Update. Retrieved from http://nyshealthfoundation.org/uploads/resources/medicaid-health-homes-factsheet-march-2014.pdf

Center for Substance Abuse Treatment. (1999). Brief interventions and brief therapies for substance abuse. *Treatment Improvement Protocol (TIP) Series, No. 34* .

Centers for Disease Control and Prevention. (2012). Binge drinking: Nationwide problem, local solutions. *Atlanta, GA: Centers for Disease Control and Prevention. Substance Abuse and Mental Health Services Administration (2009, December 29). Illicit drug use among older adults. The NSDUH Report, Figures, 1*.

Centers for Disease Control and Prevention. (2014). Excessive drinking costs US $223.5 billion. *CDC features. Atlanta: National Center for Chronic Disease Prevention and Health Promotion, Division of Adult and Community Health*.

Cohen, E., Feinn, R., Arias, A., & Kranzler, H. R. (2007). Alcohol treatment utilization: findings from the National Epidemiologic Survey on Alcohol and Related Conditions. *Drug and alcohol dependence, 86*(2), 214-221.

Fiellin, D. A., Reid, M. C., & O'Connor, P. G. (2000). Screening for alcohol problems in primary care: a systematic review. *Archives of internal medicine, 160*(13), 1977-1989.

Ghitza, U.E. & Tai, B. (2014). Challenges and opportunities for integrating preventive substance-use-care services in primary care through the Affordable Care Act. *Journal of Health Care for the Poor and Underserved, 25* (1 Suppl), 36-45. doi: 10.1353/hpu.2014.0067

Gilbody, S., Bower, P., Fletcher, J., Richards, D., & Sutton, A. J. (2006). Collaborative care for depression: a cumulative meta-analysis and review of longer-term outcomes. *Archives of internal medicine, 166*(21), 2314-2321.

Grant, B. F., Dawson, D. A., Stinson, F. S., Chou, S. P., Dufour, M. C., & Pickering, R. P. (2004). The 12-month prevalence and trends in DSM-IV alcohol abuse and dependence: United States, 1991–1992 and 2001–2002. *Drug and alcohol dependence, 74*(3), 223-234.

Harris, A. H., Kivlahan, D. R., Bowe, T., Finney, J. W., & Humphreys, K. (2009). Developing and validating process measures of health care quality: an application to alcohol use disorder treatment. *Medical Care, 47*(12), 1244-1250.

Heather, N. (2014). The two forms of alcohol brief intervention: an uneasy coalition. *Addiction, 109*(7), 1059-1060.

Institute of Medicine. (1990). *Broadening the base of treatment for alcohol problems*: National Academy Press.

Johnson, B. A., Rosenthal, N., Capece, J. A., Wiegand, F., Mao, L., Beyers, K., . . . Ciraulo, D. A. (2007). Topiramate for treating alcohol dependence: a randomized controlled trial. *JAMA, 298*(14), 1641-1651.

Jonas, D. E., Garbutt, J. C., Amick, H. R., Brown, J. M., Brownley, K. A., Council, C. L., . . . Richmond, E. M. (2012). Behavioral counseling after screening for alcohol misuse in primary care: a systematic review and meta-analysis for the US Preventive Services Task Force. *Annals of internal medicine, 157*(9), 645-654.

Kaner, E. F., Dickinson, H. O., Beyer, F., Pienaar, E., Schlesinger, C., Campbell, F., . . . Heather, N. (2009). The effectiveness of brief alcohol interventions in primary care settings: a systematic review. *Drug and alcohol review, 28*(3), 301-323.

Katon, W., Lin, E.H., Von Korff, M., et al. (2010). Integrating depression and chronic disease care among patients with diabetes and/or coronary heart disease: the design of the TEAMcare study. *Contemporary Clinical Trials*, *31*(4), 312-322.

Kranzler, H. R., Covault, J., Feinn, R., Armeli, S., Tennen, H., Arias, A. J., . . . Kampman, K. M. (2014). Topiramate treatment for heavy drinkers: moderation by a GRIK1 polymorphism. *American Journal of Psychiatry*.

Kranzler, H.R., & McKay, J.R. (2012). Personalized treatment of alcohol dependence. *Current Psychiatry Reports*, *14*(5), 486-493.

Kranzler, H. R., Tennen, H., Armeli, S., Chan, G., Covault, J., Arias, A., & Oncken, C. (2009). Targeted naltrexone for problem drinkers. *Journal of clinical psychopharmacology, 29*(4), 350.

Lenaerts, E., Matheï, C., Matthys, F., Zeeuws, D., Pas, L., Anderson, P., & Aertgeerts, B. (2014). Continuing care for patients with alcohol use disorders: A systematic review. *Drug and alcohol dependence, 135*, 9-21.

Lewis, V. A., Colla, C. H., Tierney, K., Van Citters, A. D., Fisher, E. S., & Meara, E. (2014). Few ACOs pursue innovative models that integrate care for mental illness and substance abuse with primary care. *Health Affairs, 33*(10), 1808-1816.

McCambridge, J., & Rollnick, S. (2014). Should brief interventions in primary care address alcohol problems more strongly? *Addiction, 109*(7), 1054-1058.

McKay, J. R., Lynch, K. G., Shepard, D. S., Morgenstern, J., Forman, R. F., & Pettinati, H. M. (2005). Do patient characteristics and initial progress in treatment moderate the effectiveness of telephone-based continuing care for substance use disorders? *Addiction, 100*(2), 216-226.

McLellan, A. T., Starrels, J. L., Tai, B., Gordon, A. J., Brown, R., Ghitza, U., . . . Horton, T. (2014). Can substance use disorders be managed using the chronic care model? Review and recommendations from a NIDA Consensus Group. *Public health reviews, 35*(2).

Mechanic, D. (2012). Seizing opportunities under the Affordable Care Act for transforming the mental and behavioral health system. *Health Affairs, 31*(2), 376-382.
Miller, W.R. & Longabaugh ,R. (1995). The Drinker Inventory of Consequences (DrInC): An instrument for assessing adverse consequences of alcohol abuse. Test manual. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism
Miller, W. R., Leckman, A. L., Delaney, H. D., & Tinkcom, M. (1992). Long-term follow-up of behavioral self-control training. *Journal of studies on alcohol, 53*(3), 249-261.
Miller, W. R., & Tonigan, J. S. (1996). Assessing drinkers' motivation for change: the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). *Psychology of Addictive Behaviors, 10*(2), 81.
Morgenstern, J., Kuerbis, A., Amrhein, P., Hail, L., Lynch, K., & McKay, J. R. (2012a). Motivational interviewing: A pilot test of active ingredients and mechanisms of change. *Psychology of Addictive Behaviors, 26*(4), 859.
Morgenstern, J., Kuerbis, A. N., Chen, A. C., Kahler, C. W., Bux Jr, D. A., & Kranzler, H. R. (2012b). A randomized clinical trial of naltrexone and behavioral therapy for problem drinking men who have sex with men. *Journal of consulting and clinical psychology, 80*(5), 863.
Morgenstern, J., & McKay, J. R. (2007). Rethinking the paradigms that inform behavioral treatment research for substance use disorders. *Addiction, 102*(9), 1377-1389.
National Committee for Quality Assurance. (2014). *The Future of Patient-Centered Medical Homes*. Retrieved from https://www.ncqa.org/Portals/0/Public%20Policy/2014%20Comment%20Letters/The_Future_of_PCMH.pdf
Nielsen, M., Buelt, L., Patel, K., Nichols, L. M., & Fund, M. M. (2014). The patient-centered Medical Home's impact on cost and quality. *Milbank Memorial Fund*.
Oslin, D. W., Lynch, K. G., Maisto, S. A., Lantinga, L. J., McKay, J. R., Possemato, K., . . . Wierzbicki, M. (2014). A randomized clinical trial of alcohol care management delivered in Department of Veterans Affairs primary care clinics versus specialty addiction treatment. *Journal of general internal medicine, 29*(1), 162-168.
Ouwens, M., Wollersheim, H., Hermens, R., Hulscher, M., & Grol, R. (2005). Integrated care programmes for chronically ill patients: a review of systematic reviews. *International journal for quality in health care, 17*(2), 141-146.
Park, T. W., Samet, J. H., Cheng, D. M., Winter, M. R., Kim, T. W., Fitzgerald, A., & Saitz, R. (2015). The prescription of addiction medications after implementation of chronic care management for substance dependence in primary care. *Journal of substance abuse treatment, 52*, 17-23.
Project MATCH Research Group. (1998). Matching patients with alcohol disorders to treatments: Clinical implications from Project MATCH. *Journal of Mental Health, 7*(6), 589-602.
Saitz, R. (2010). Alcohol screening and brief intervention in primary care: absence of evidence for efficacy in people with dependence or very heavy drinking. *Drug and alcohol review, 29*(6), 631-640.
Saitz, R. (2013). Screening and brief intervention for opioid addiction in primary care is not evidence based. *The American journal of medicine, 126*(11), e15.
Saitz, R. (2014). Lost in translation: the perils of implementing alcohol brief intervention when there are gaps in evidence and its interpretation. *Addiction, 109*(7), 1060-1062.
Saitz, R., Cheng, D. M., Winter, M., Kim, T. W., Meli, S. M., Allensworth-Davies, D., . . . Samet, J. H. (2013). Chronic care management for dependence on alcohol and other drugs: the AHEAD randomized trial. *JAMA, 310*(11), 1156-1167.
Saitz, R., Larson, M. J., LaBelle, C., Richardson, J., & Samet, J. H. (2008). The case for chronic disease management for addiction. *Journal of addiction medicine, 2*(2), 55.

Solberg, L. I., Maciosek, M. V., & Edwards, N. M. (2008). Primary care intervention to reduce alcohol misuse: ranking its health impact and cost effectiveness. *American journal of preventive medicine, 34*(2), 143-152. e143.

Town, M., Naimi, T. S., Mokdad, A. H., & Brewer, R. D. (2006). Health care access among US adults who drink alcohol excessively: missed opportunities for prevention. *Prev Chronic Dis, 3*(2), A53.

United States Department of Health and Human Services. (2005). Helping patients who drink too much: A clinician's guide. *National Institutes of Health. National Institute on Alcohol Abuse and Alcoholism. NIH Publication*(07-3769).

Unützer, J., Harbin, H., & Druss, M. (2013). The collaborative care model: An approach for integrating physical and mental health care in Medicaid health homes. *Center for Health Care Strategies and Mathematica Policy Research, May*.

Walters, G. D. (2001). Behavioral self-control training for problem drinkers: A meta-analysis of randomized control studies. *Behavior Therapy, 31*(1), 135-149.

Willenbring, M. L. (2007). Medications to treat alcohol dependence: adding to the continuum of care. *JAMA, 298*(14), 1691-1692.