Come As You Are - Assessing the Efficacy of a Nurse Case Management HIV Prevention and Care Intervention among Homeless Youth

NCT03910218

Version Date: 03/09/2021

IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

Protocol Title:	*Come As You Are - Assessing the Efficacy of a Nurse Case Management HIV Prevention and Care Intervention among Homeless Youth*
Principal Investigator:	Diane Santa Maria
Co-Investigators:	Adey Nyamathi, Marguerita Lightfoot, Mary Paul, Yasmeen Quadri, Nikhil Padhye
Consultants	Cathy E. Crouch, Michael Businelle, Charlene Flash
Study Coordinator:	Jennifer Torres
Population:	Community Advisory Group = 10; Youth Advisory Group = 10; RCT = 450 youth experiencing homelessness or unstable housing who are emancipated minors 16-17 years old or young adults 18-25 years old.
Number of Sites:	Single site
Study Duration:	5 years
Subject Duration:	12 months per participant

General Information

Randomized Controlled Trial of NCM4HIV

We will conduct a wait-list control RCT to determine the efficacy of the NCM4HIV intervention compared to usual care among YEH aged 16-25 years (Figure 2). We will determine whether NCM4HIV increases uptake of HIV prevention strategies (e.g., PrEP and nPEP uptake, HIV testing, STI screening and treatment, and condom use) when compared with usual care among YEH (N=450) at immediate post-intervention, 3, 6, and 9 months. The second aim is to determine whether the intervention improves mental health, substance use, and housing status. As an exploratory aim, we will determine whether health seeking, coping, HIV risk perception, PrEP/nPEP barriers and facilitators, and condom self-efficacy mediate the effect of the intervention on uptake of PrEP/nPEP, condom use, and HIV/STI testing. YEH will be recruited from shelters, drop-in centers, clinics and street outreach (see LOSs). In YR-1 we will finalize the protocol, obtain IRB approval, train study staff, and begin enrolling youth. In YRS 1-4, we will enroll a total sample size of 450 youth. In YR-4, we will complete the 9-month follow-ups. In YR-5, we will complete intervention delivery for the wait-list control group, analyze the data, prepare manuscripts, and disseminate the findings.

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

Background Information

Millions of Youth Experience Homelessness and Suffer from High Morbidity and Mortality. On any given night in the United States, 1.7 to 2.5 million youth under age 25 are homeless.[17-19] YEH are more likely than housed youth to experience premature death, suicide, drug overdose, HIV, pregnancy, substance use, and mental illness.[20-25] While the need for prevention interventions tailored to the special considerations of this high-risk, complex population is undeniable, they continue to be understudied and underserved.[26] However, YEH are interested in health promotion programs, can be recruited and retained in interventions and research studies,[27,28] and demonstrate improved outcomes when programs are tailored and relevant.[29]

Youth experiencing homelessness (YEH) are at high risk for HIV but many do not access the prevention services they need. YEH are 6-12 times more likely to become infected with HIV than housed youth,[1] with HIV prevalence as high as 16%.[2] A number of risk behaviors drive infection rates in YEH. YEH have earlier sexual debuts; are more likely to have multiple partners; trade sex for food, shelter, money, or substances,[2,30,31] use substances before sex; are less likely to use condoms or contraception; and sexual minority YEH (men who have sex with men) are at particular high risk for HIV.[23,32] YEH who trade sex are also at high risk for HIV as they are rarely able to negotiate condom use and often lack knowledge about biomedical advances in HIV prevention like PrEP.[33] Additionally, while 27% of YEH are raped while homeless, only 29% of victims seek medical care when nPEP can be provided.[6] Our recent 7-city (Houston, Denver, St. Louis, Phoenix, Los Angeles, San Jose, New York City) study of 1427 YEH (58% male, 81% youth of color, 31% LGBTQ) showed that 71% had little to no knowledge of PrEP. Despite these high risks, only 53% had undergone HIV testing in the preceding 3 months. Furthermore, a recent systematic review of interventions to prevent HIV in homeless youth found only 3 eligible studies, highlighting the paucity of research with YEH, and concluded that more research is needed. The review also indicated the need for novel interventions and more robust evaluations. Therefore, while programs exist that address HIV prevention among YEH, HIV rates are still high, most interventions don't address the full continuum of behavioral and biomedical HIV prevention, and additional research to develop interventions for YEH is critically needed.

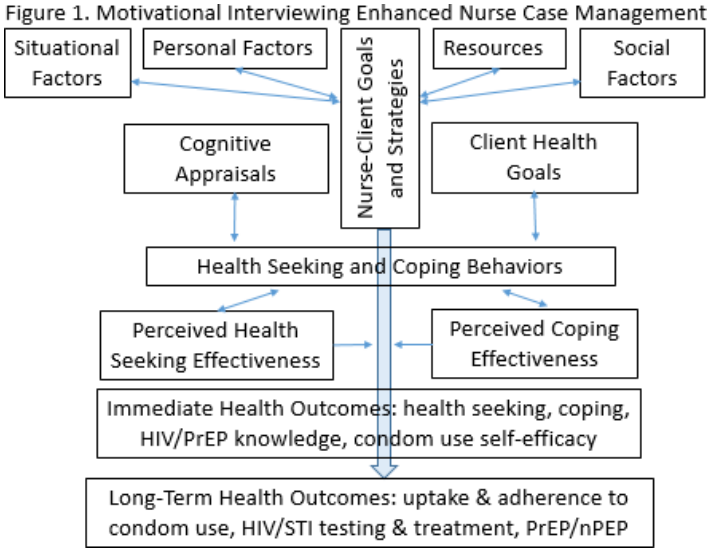
Co-occurrence of mental health problems and substance use also drive risk in YEH. HIV risk is further entangled with multiple comorbid conditions, including mental illness and substance use. Suicide is one of the leading causes of death among YEH[34] with suicide attempt rates ranging from 12% to 48%.[35-37] Rates of depression and post-traumatic stress among YEH range from 8%[38] to 61%[39] and 5% to 48%,[40-42] respectively. Our recent research found that 42% of YEH are moderately to severely stressed, 48% experience mental distress, 48% have depression, and 23% have post-traumatic stress.[43] Depression among YEH may be due to a lifetime of adversity, abuse, neglect, and housing instability,[44,45] all of which can lead to riskier sexual decision making.[46] Further, rates of substance use among YEH are twice those of housed youth.[20,23] In one study, 86% of met the DSM-IV diagnostic criteria for a substance use disorder[23] compared with only 15% in the general young adult population, and drug overdose is a leading cause of death among YEH.[22] HIV prevention efforts must therefore address mental health and substance use issues and be incorporated into existing social service programs.[47-49]

Interventions for YEH must address both their comprehensive needs and the full continuum of HIV. Barriers to HIV prevention and health seeking among YEH are compounded by mental illness, housing instability, and substance use,[8] reinforcing the need to test interventions that comprehensively address the needs of YEH. Individuals impacted by mental illness, homelessness, and substance use have greater PrEP uptake and adherence when these broader issues are also addressed.[8] Interventions for YEH must also provide the full

continuum of behavioral and biomedical HIV prevention including HIV and sexually transmitted infection (STI) screening and treatment, pre-exposure prophylaxis (PrEP), and non-occupational post-exposure prophylaxis (nPEP).[7] To date, YEH have not accessed the continuum of HIV prevention strategies. As noted above, YEH often are unaware of effective prevention strategies like PrEP, and PrEP uptake[50] and adherence are lower among homeless.[51] Therefore, effective HIV prevention for YEH includes PrEP awareness, PrEP eligibility assessments, condom promotion, HIV/STI screening/treatment, as well as assisting in healthcare navigation and engagement for mental health and substance use issues,[11-13] transportation and health insurance challenges. A strategy that may effectively address the multifaceted and complex health and social challenges of YEH is nurse case management.

Nurse case management (NCM) is particularly suited to addressing the complex needs of YEH. Nurses, who have been voted the most trusted professionals in national Gallup opinion polls for the past 15 years,[14] are well suited to work with YEH and are a part of most existing HIV programs for YEH. NCM is an effective intervention that can potentially address the complex comorbid conditions and effectively engage YEH in the full continuum of HIV prevention. NCM is based on the Comprehensive Health Seeking and Coping Framework (CHSCF; Figure 1), which describes how the nurse and client work together to mutually develop goals and strategies to improve health in a context of non-judgmental acceptance.

Figure 1. Motivational Interviewing Enhanced Nurse Case Management



Accomplishment of goals occur by addressing cognitive appraisals (clarifying misconceptions), promoting health seeking, and addressing knowledge and coping behaviors that incorporate the situational, personal, social, and resource needs affecting health. NCM involves coordinated, individualized, comprehensive care delivered by a registered nurse (RN) that includes a comprehensive health assessment, mutual care plan development, prevention education, and health and social service navigation.[52-55] A nurse-led intervention eliminates the need to refer YEH to other medical professionals for HIV prevention services (e.g., PrEP, nPEP, lab draws, STI testing/treatment), a step that may increase compliance. This is particularly important as being homeless can decrease effectiveness of linkages to care[56] vs. providing care at the point-of-contact. NCM has been efficacious in reducing drug use among methadone users[57] and YEH,[54] improving hepatitis B vaccination rates,[58] reducing repeat pregnancies, and facilitating HIV care coordination.[59] NCM's comprehensive approach of simultaneously addressing concomitant problems (e.g., mental health, substance use, and housing needs) and incorporating the full continuum of behavioral and biomedical HIV prevention in an integrated fashion is a promising strategy for engaging YEH. Nurses are part of nearly all current HIV programs for YEH; therefore, our intervention is sustainable and can be easily integrated into existing HIV prevention programs.

We will strengthen NCM by integrating motivational interviewing (MI) and behavioral feedback. YEH are self-reliant, can be challenging to engage, and can become distrustful of adults due to past trauma and victimization on the streets.[9,60] Therefore, we will integrate MI strategies into our NCM approach to strengthen the relationship between the YEH and RN and

IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

to evoke participant driven goals.[61] MI is a person-centered counseling style to strengthen a person's motivation and commitment to change and addresses ambivalence about behavior change.[15,16] MI has been successfully used with youth to improve uptake and adherence to health behaviors resulting in reduced alcohol[62] and substance use[63] and increased condom[64] and contraceptive use.[65] We will also employ behavioral feedback technology to tailor and further engage YEH in the intervention. Specifically, we will include smartphone self-monitoring daily diaries for youth to monitor progress towards their behavioral goals. Instant feedback enhances cognitive appraisal of YEHs' health seeking and coping behaviors and promotes motivation.[61,66] Like many adolescents and young adults, YEH underestimate their HIV risk,[67,68] suggesting that self-monitoring may assist in aligning their behaviors with their perceived HIV risk. Immediate self-monitored behavior feedback has been found to increase condom use.[61,69] Leveraging the high number of youth who have phones and the technology use preferences of young adults[70-72] in general and YEH,[73-75] our intervention will include very brief daily diaries, with data from the daily diaries being used to provide instant visual feedback on their progress toward their goals (see Intervention Description for details). A review of 42 studies showed high daily diary monitoring rates (78%) among youth.[76] Our prior studies have found similar high compliance (82-87%) with homeless and vulnerable populations (see Preliminary Studies section). We found that 67% of YEH have smartphones[67] and that they frequently search the internet for health-related information, housing, and shelter. The most frequent searches were on healthcare services and medication information.[67]

To further engage YEH, we will meet them "where they are"[8] and implement the intervention in collaboration with existing health and social service providers. This strategy is particularly important given that past month use of a drop-in center predicts HIV/STI testing[77] and being linked to a drop-in center is significantly associated with increased service utilization ($p < 0.01$) and improved HIV-related outcomes ($p < 0.001$).[49] These findings support the potential of delivering HIV prevention in drop-in centers and shelters to connect healthcare underutilizing YEH. Moreover, drop-in centers may be the preferred HIV prevention service location of YEH.[49] By integrating the delivery of NCM4HIV into already established social services, we can enhance HIV prevention while improving access to mental health, substance use, and housing services. Because these service agencies also conduct weekly street outreach where we can recruit youth, we anticipate reaching disconnected youth who have yet to present for health or social services.

Innovation

While NCM and MI are established methods for behavioral change and care engagement among high-risk populations, nurses are underutilized as behavioral change agents.[78] This early-stage and new-investigator R01 is innovative in the following ways: (1) it will take best advantage of the underutilized role of nurses, American's most trusted professionals, in the HIV prevention team; (2) nurse provision of HIV prevention services will remove the need to refer YEH to other medical personnel, which can decrease compliance; (3) enhancing NCM with MI and behavioral feedback to increase YEHs' motivation for adopting HIV prevention behaviors; (4) addressing the full continuum of behavioral and biomedical HIV prevention with YEH; and (5) the intervention can be applied to improve any existing YEH HIV prevention program. NCM4HIV capitalizes on the "come as you are" approach endorsed in the Clinical Guidelines[79] put forth by the National Healthcare for the Homeless Council (NHCHC) and aligns with NIH HIV/AIDS High Priority Research Area for reducing HIV through behavioral prevention and access to services in high HIV prevalence and substance-using populations. Additionally, NCM facilitates coordination with YEH service providers to meet mental health, substance use, and housing service needs and connects youth to the healthcare services at the Health Care for the Homeless Program (HCHP), such as HIV and STI testing and treatment. If efficacious, we will

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

partner with the NHCHC to disseminate the program across its approximately 300 programs and 3,300 clinics that provide care for people experiencing homelessness (see Letters of Support [LOS]).

Objectives

Aim 1: Determine whether the enhanced NCM intervention increases uptake of HIV prevention strategies (PrEP and nPEP uptake, HIV testing, STI screening and treatment, and condom use) when compared with wait list control youth (N=450; aged 16-25 years) at baseline, immediate post, and 3, 6, and 9 months

H1: Youth receiving NCM will have greater improvements in these outcomes over 9 months than control youth

Aim 2: Determine whether NCM4HIV improves mental health, substance use, and housing status when compared with wait list control youth at baseline, immediate post, and 3, 6, and 9 months

H2: Youth receiving NCM will have greater improvements in these outcomes over 9 months than control youth

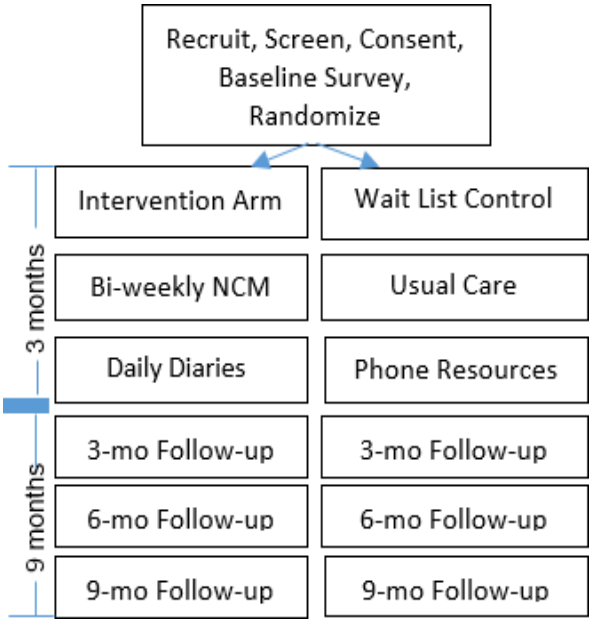
Exploratory Aim: Determine if health seeking, coping, HIV risk perception, PrEP/nPEP barriers/facilitators, and condom self-efficacy mediate intervention effects on PrEP/nPEP uptake, HIV/STI testing, and condom use

Study Design

Figure 2. Study Design

	Baseline	Intervention	3 Mon.	6 Mon.	9 Mon.	Intervention
Treatment arm	O_1	X O_2	O_3	O_4	O_5	
Wait list control	O_1	O_2	O_3	O_4	O_5	X

Figure 3. Study Design



Measures. The baseline survey will include demographics such as age, sex (operationalized as the gender identity, not biological sex), race/ethnicity, sexual orientation, educational level, and employment. We will assess historical factors to characterize the sample, such as foster care history, adverse childhood experiences, age at the first episode of homelessness, and duration of current homelessness, all of which have been linked to sexual risks.[114,115] PrEP/nPEP uptake

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

will be assessed through NCM report and medical chart verification of PrEP/nPEP prescription. Follow-up surveys will assess condom use at last sex and during the past 3 months, substance use,[116] sexual behaviors,[117] HIV and STI testing, mental health symptoms,[118,119] and housing status. In alignment with CHSCF, we will assess possible intervention mediators including healthcare engagement,[120] condom use self-efficacy,[121] HIV risk perception,[122] PrEP barriers/facilitators,[123] health seeking, [124] and coping[125,126] using validated measures.

Outcome Measures by Study Aim

Construct	Scale/Measure	Alpha
Aim 1 Outcomes		
PrEP/nPEP Uptake	PrEP uptake; nPEP uptake (NCM report, chart review)	NA
Condom Use	Youth Risk Behavior Survey;[128] (condom use at last sex)	NA
HIV/STI Test Uptake	Rapid HIV test; Gonorrhea, Chlamydia, Syphilis test	NA
Aim 2 Outcomes		
Mental Health	Brief Symptom Index-18[118,119]	*0.80*
Housing Status	In a shelter, apt/house, with someone, outside, in a car…?	NA
Substance Use	TCU Drug Screen II[82,129]	*0.*89
Exploratory Outcomes (possible mediators based on CHSCF; see Figure 1)		
Healthcare Engagement	Healthcare clinic visit adherence[120]	NA
Condom Use Self-Efficacy	Condom Use Self-Efficacy Scale[121]	0.91
HIV Risk Perception	Perceived Risk of HIV scale[122]	0.88
PrEP Facilitators & Barriers	Facilitators and Barriers to PrEP Use[123]	NA
Health Seeking	General Help Seeking Questionnaire[124]	0.83
Coping	Coping Inventory for Stressful Situations-Adolescent[125,126]	0.92

Study Population

Inclusion Criteria. We will limit our sample to YEH ages 16-25 years to align with adolescent brain development,[4,5] risk behavior,[6] YEH literature, the current clinical and FDA guidelines for PrEP and nPEP use, and the extant literature suggesting that experiencing homelessness as a young adult under 26 is associated with heightened sexual risk behaviors and substance use.[7] Individuals will be included if they (1) engage in high-risk sexual activity or intravenous drug use, (2) are 16-25 years old, (3) speak English, (4) are experiencing homelessness, and (5) are not planning to move out of the metro area during the study. High-risk sexual activity will be defined as having condomless vaginal or anal sex in the past 6 months. While Houston has a high Hispanic population, only 1 of the 434 youth from Youth Count 2.0 preferred to take the survey in Spanish, and the large majority of Hispanic YEH in Houston prefer English. Therefore, we do not anticipate excluding otherwise eligible youth based on language by limiting to English speaking youth. Experiencing homelessness will be defined as having slept on the streets, in a place not meant for habitation, in a shelter, hotel/motel, or with someone where they cannot stay for more than 30 days (e.g., couch surfing). YEH may stay in emergency shelters or on the streets (e.g., parks and tent cities), in abandoned or vacant buildings or apartments, temporarily with friends, family, or acquaintances, or in rented hotel/motel rooms[8] and go to great lengths to stay hidden from the dangers of victimization.[9] This broader definition of homelessness aligns with the McKinney-Vento Homeless Assistance Act of 1987 which allows us to account for the transiency and instability of housing experienced by YEH, and increases the generalizability of the study findings. If a youth has low literacy based on the REALM-SF (scores < 4) they will be excluded due to the need to read at a 4th grade level for the daily dairies.[2] Only 2 youth from Youth Count 2.0 were excluded based on their literacy level. While youth could access the survey using the audio-assisted feature of REDCap regardless of their literacy level, they may

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

not be able to read the daily diaries if they were assigned to the intervention arm. This set of criteria were used successfully in our prior studies.

Exclusion Criteria. Youth outside of the age range (16-25) at the point of enrollment will be excluded. Youth who are very low literacy (scores < 4 on the REALM-SF health literacy assessment)[2] will be excluded from participating in the study due to the need to independently read the daily diaries. Only 2 youth from Youth Count 2.0 were excluded based on their literacy level. While youth would be able to access the survey using the audio-assisted feature of REDCap regardless of literacy level, they may not be able to read the daily diaries if they were randomized to the NCM+behavioral feedback arm. A high proportion of homeless youth have a mental illness diagnosis or experience mental distress that is treatable. While we contemplated excluding youth with severe, acute mental symptoms to encourage them to first seek mental health services, we understand that they may also benefit from the intervention even if mental health is not a primary outcome. Youth who are noticeably intoxicated or experiencing acute mental distress will be encouraged to come back and be screened for enrollment at a later time point to assure safety and acute needs are met prior to enrollment.

Recruitment. YEH in Houston, TX (N=450) will be recruited from drop-in centers, shelters, local YEH service locations, clinics, federally qualified healthcare centers in locations with a high concentration of homelessness, magnet (e.g., hot meal) events, mobile clinics, and street outreach to increase representation from both connected and disconnected YEH to increase generalizability of the findings (see LOSs). These recruitment sites serve young men, women, families, and LGBTQ youth. We will use group-based study introduction sessions, flyers, and recruitment letters at the agencies, clinics, street outreach, and the website and Facebook pages of the agencies and HYN, methods we successfully used in **Youth Count 2.0** to recruit 434 YEH in just 4 weeks.[43] The RC and RA will maintain a consistent presence at the recruitment sites throughout the study to facilitate both recruitment and follow-up efforts. The RC and RA will approach youth to describe the study, screen for eligibility, and obtain informed consent (see Human Subjects section) in a quiet area (e.g., library or office space). Potential participants will be informed at each encounter that participation will have no effect on their ability to receive services such as housing, mental health, or healthcare. A nationally representative survey suggests that 3.5 million 18- to 25-year-olds experienced homelessness during the past year.[103] In 2016 in Houston, TX, local homeless youth service providers served over 5000 unduplicated YEH.[97] Given the aforementioned inclusion criteria and the high volume of YEH in Houston, we expect to have few challenges with enrolling our sample size of 450 youth. Due to the transience of this population, we anticipate the need to recruit 600 youth for eligibility in order to reach out final sample size of 450 by the end of year 4.

Due to the COVID-19 pandemic and subsequent closures/restrictions at recruitment sites, additional strategies will be used to supplement the delay of in-person recruitment.

Participants who have completed the 2nd follow up data collection will be notified that they can refer peers to participate in the study. Referrals will be screened according to protocol and if eligible, will be invited to participate in the study. Participants who refer will receive a $10 gift card for each referral who successfully completes study enrollment (up to 5 referrals).

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

Successful completion of study enrollment includes consent process, baseline data collection, and issuance of group assignment and study cell phone,

Study team will create a ResearchMatch profile. ResearchMatch.org is a free, publically available, and secure online tool created which allows individuals to find research studies for which they may be eligible. All interested individuals indicating interest will be screened by study staff per current protocol.

Digital advertising (FB & Instagram ads) will be utilized to reach target population and will be targeted to 16-25 year olds within the Houston area, Individuals who respond to the ads via social media, phone, or email will be screened for eligibility by study staff and if eligible, will be invited to participate per current protocol.

If risk level for coronavirus according to Harris County is 2 or 3, study staff will set up tables outside of shelters or drop-in centers to engage potentially eligible youth, with permission from the agencies. Youth will be screened for eligibility on-site and if eligible, will be invited to participate per current protocol.

Study Procedures

Protection of Human Subjects from Research Risks
This Human Subjects research meets the definition of a clinical trial.

Human Subjects Involvement, Characteristics, and Design. This proposed randomized controlled trial will test the efficacy of a nurse case management (NCM) HIV prevention intervention compared to usual care among homeless young adults aged 16-25 years old. We will follow participants for 9 months after the intervention for a total study period of 12 months. The intervention incorporates motivational interviewing strategies combined with nurse case management and a smartphone based daily diary to develop participant driven HIV prevention behavioral goals. Given the inclusion criteria and volume of youth served at the recruitment sites, we expect to recruit 50 youth in YR-1, 200 youth in YR-2, 150 in YR-3 and 50 in YR-4 for a total sample size of 450.Youth will be recruited in partnership with the Salvation Army that runs a Young Adults Resource Drop-in Center and street outreach (see LOS), the Covenant House Texas (CHT) youth shelter and their street outreach program (see LOS), and the 13 free-standing and shelter-based Healthcare for the Homeless Program clinics (Dr. Quadri is Medical Director and Co-I). As well, we will recruit from the 10 Legacy Federally Qualified Healthcare Center Clinics.

Sources of Materials.
Baseline and Follow-up Survey Data. 5 Surveys will be collected at baseline, immediate, 3-, 6-, and 9-months post intervention using REDCap online surveys delivered on iPads or accessed remotely by participant smartphone or computer. Surveys will be provided in a quiet, private room at the drop-in center and shelter, and take about 30 minutes each to complete. In cases when a participant prefers to complete their survey at another location, the research assistant will find an agreed upon location to meet up with the youth to complete the survey such as a near-by library or coffee shop. For youth who leave the area during the data collection period, we will create an individualized survey link generated from REDCap. This web-based

link will be password protected and can be sent to the participant via text message or email. The RA will contact the participant to assure access to and completion of the survey. The survey can then be completed using the web browser on the study issued phone. We will finalize the pre- and post-surveys during YR-1 with input from the CAG and YWG. We will use survey items we have used in our previous studies with homeless youth to assess demographics (e.g., age at first homelessness, duration of homelessness, race/ethnicity, sexual orientation, gender identity), psychosocial factors, and behavioral outcomes (see Table 2). Additionally, the immediate post-survey for the intervention group will contain intervention process outcome items including what participants found the most and the least helpful, what made it easy to attend sessions and what made it hard. To report study process outcomes, we will calculate the number of eligible youth approached, participation refusal rate with reason for refusal, the number of sessions attended, follow-up survey response rates, and phone loss. For refusal rate, we will ask each youth we approach their age, race/ethnicity, gender and sexual orientation to allow for demographic comparisons by participation status to monitor potential sample bias. Participants will be notified that no survey data will be shared with shelter and drop-in center staff or their case workers. Data will be collected on encrypted iPads using a secured HIPPA and IRB compliant REDCap system for the baseline, follow-ups, and pre-post session surveys. In the event of unreliable W-FI, this data will be collected using REDCap offline in order to minimize concern over data. Offline data is stored on the hard drive of the encrypted iPad and uploaded to REDCap nightly at the UTHealth office or when Wi-Fi is detected. No data from REDCap is accessible from the iPads. The tablet will be encrypted and password protected so that no one except research staff are able to gain access to the information on the tablet and the tablet is rendered useless if stolen. iPads can be wiped to factory settings remotely by UTHeath IT department using AirWatch in the case of a missing or stolen device. Only research staff will have the passwords for the REDCap database and computer. Survey data cannot be accessed from the encrypted iPad tablet and is only accessible on the REDCap secure server. Data will be downloaded from REDCap after every data collection and saved on a secure, firewall protected hard drive.

HIV/STI Test Specimens. As part of the study eligibility screening process, potentially eligible youth will be screened for HIV. Screening will take place in a private location in the shelter or drop-in center or library bathroom or private conference room. The RA, who will receive training in pre-and post-test counseling, will provide pre- and post-test counseling and coordinate follow-up care for confirmatory testing for participants with a positive HIV screening test. In the case of a participant who is HIV positive, the nurse will care for the youth as part of routine healthcare services provided by Healthcare for the Homeless which is part of the Harris Health System (https://www.harrishealth.org/en/our-community/outreach-services/pages/healthcare-homeless.aspx). Newly diagnosed youth who are not yet engaged in HIV care will be linked to HIV service provider at the Thomas Street Health Center using already in place protocols for homeless HIV positive clients.

All study participants will be offered testing for HIV and STIs at baseline, immediate post-intervention, 3, 6, and 9 months post intervention. HIV and STI testing will be collected in a private location at the shelter or drop-in center. Any youth who have a positive STI test results will receive treatment and care coordination from the Healthcare for the Homeless Houston (HHH) program or their medical home if preferred. As mandated by law, positive results will also be reported to the Houston Health Department. Youth who test positive for HIV during the study will be linked to HIV care at the Thomas Street Health Center or another clinic of their choice using already in place protocols for homeless HIV positive clients by the nurse case manager.

For HIV testing, we will use the INSTI HIV-1/HIV-2 Rapid Antibody Test (99.9% sensitivity, 100% specificity.) For Chlamydia and Gonorrhea, urine specimens will be collected in a sterile cup, refrigerated between 2°C to 8°C, and transported on the same day to Thomas Street Clinic, a Harris Health entity. Nurses will notify physician and Co-PI Dr. Quadri, who will order chlamydia and gonorrhea tests via the Harris Health lab. Results will be obtained by RNs credentialed by Harris Health via the electronic system, EPIC, and be shared with participants via phone call or in person. If collected at UTHealth, Chlamydia and Gonorrhea specimens will be processed via UTHealth clinic lab (LapCorp). For Syphilis testing, we will use the Syphilis Health Check, Syphilis Antibody Rapid Immunochromatographic Test. The assays will be run within 2 business days using the current laboratory procedures at Harris Health Systems (see Resources section). Specimens will be discarded based on the regulator laboratory procedures. Youth who test positive for an STI will be contacted to schedule a follow-up appointment to receive treatment as indicated. Reportable positive tests will be reported to the local health department to initiate partner notification procedures. Tests will be conducted in a private location in the drop-in center and shelter clinic area or private office space.

Preferred method for HIV & STI testing is conducted by study staff at recruitment site for convenience of participant. However, due to COVID-19 pandemic, study team will offer additional methods to conduct HIV & STI depending on current COVID-19 risk level, availability of PPE, health of study staff, health of participant, and location of participant:

1) With study staff at Cizik School of Nursing (6901 Bertner Ave. or 7000 Fannin)
2) Covenant House clinic
3) Harris Health clinic
4) At-home test to take under supervision of a study staff via video call.

At-home tests will be available for Syphilis, Chlamydia, and Gonorrhea using commercially available Everlywell tests. Study staff will mail test kits in a discreet envelope or hand-deliver the kits at a convenient public location (e.g., grocery store). Participants will register the kits on a private, secure platform and mail samples to Everlywell lab in a postage-paid envelope. Participant will be able to access results online. In the event of a positive result, a third party provider via Everlywell will contact participant and offer referrals for treatment. Study staff will follow up on treatment and make appropriate reports to Houston Health Department. Study staff will acquire results via the secure Everlywell Lens platform.

Participants will receive an $20 gift card for completing each STI testing follow up in addition to incentive for surveys to cover the cost of transportation and time.

If participants have been testing for HIV, chlamydia and gonorrhea, and/or syphilis in the last 2 weeks and report no potential exposure, study staff will ask permission to obtain results from a partnering agency outlined in the consent form.

Study staff will be equipped with PPE for all in-person visits in accordance with national (CDC & NIH), local (Harris County and City of Houston), and UTHealth clinical research guidelines.

Sharing test results. Participants who request written documentation of test results will be provided with the Research Results Letter. Research staff who conducted the test will fill out testers name, date, location, time, test(s) conducted and results. Letter will specify that test was conducted as part of a research study and provide study contact information.

PrEP sub study. Participants who initiate PrEP during the study will be invited to take part in a PrEP sub study which includes a medication adherence test and interview. Separate protocol and consent form will be used for the sub study.

Daily Diary Data. Participants in the intervention group will receive a brief daily diary during the 3 months of the NCM intervention. The daily diary will ask about sexual risk behaviors, sexual urges, stress, affect, social interactions, coping, and circumstances the prior day (e.g. where did you stay last night, sexual activity, substance use). The daily diary will be pushed on the study-issued phone 30 minutes after waking as indicated on the participants' intake form, and take less than 5 minutes to complete. Once completed, the data populates a simple interface accessible by password on the study issued smartphone. This interface provides a visual display based on the participant's HIV prevention goals and their behaviors as reported in the daily diary. It allows the nurse and youth to review one's current behaviors align with the health goals they established during the Nurse Case Management session. This feature is password protected on the phone.

Community Advisory Group (CAG) and Youth Working Group (YWG). The CAG and YWG will meet throughout the study to ground it in the contextual experience and needs of YEH. The PI will work closely with the Homeless Youth Network (HYN) to create a study-specific CAG of health and social service providers and convene an YWG from existing community YEH advisory groups. CAG members (n=10) will be currently providing care to YEH recruited from the 150 members of the HYN. The PI will chair the CAG meetings. CAG will meet bi-monthly in Yr-1 and then biannually to provide input on study procedures, protocol implementation, and interpretation and dissemination of the findings to the community. Meetings will follow pre-scheduled HYN meetings, last about 1 hour, and take place at existing service locations to facilitate attendance. Refreshments will be provided in lieu of a monetary incentive, the norm for HYN. The CAG will finalize the local homeless resource guide to be given to all participants at the time of enrollment and pre-programmed into the study issued phones. This guide will contain location and contact information for shelters, meals, social, legal, and education services, and clinics.

The YWG (n=10) will be currently or formerly YEH aged 16-25 years who will meet monthly in YR-1 then , if needed, to achieve the study aims and will be compensated at $25 per working session. Lunch will be provided during the sessions. YWG members will assist in the development of study procedures, survey items, and recruitment materials to provide the experiential context of HIV risk. The RC and PI will co-chair YWG sessions and they will last 1-2 hours.

Intervention Description

Table 1. Differentiation between Usual Care and the NCM4HIV Intervention

Current Usual Care Services Available	Expanded NCM4HIV Components
Housing, food, and clothing needs, health assessment, basic healthcare, limited anticipatory guidance, mental health counseling, substance use treatment referrals, PrEP/nPEP referrals	Personalized HIV prevention education, behavior goal-setting, behavioral self-monitoring, PrEP eligibility screening, PrEP/nPEP services (labs, medication), healthcare planning/coordination, MI counseling approach, assisting with cognitive appraisals (clarifying misconceptions), promoting health seeking and coping behaviors that incorporate the situational, personal, social, and resource needs affecting health

IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

An individual intervention design was chosen due to the heterogeneity of YEH and their risk behaviors and the challenges associated with group session designs including low attendance.[104]

This intervention has 2 components: **(1) 6 Face-to-Face NCM Sessions** delivered by a nurse who will assist a participant to generate HIV prevention goal using Motivational Interviewing strategies and conduct an HIV risk profile and eligibility PrEP assessment. The nurse will meet the participant in a non-stigmatizing, trauma-informed way that respects where they are at in their current situation and evokes personal motivation for health promoting behaviors. Sessions are designed to meet the complex, multi-level health and social needs of homeless youth to align with the extant literature demonstrating the strong connection between HIV risk behaviors and mental health, substance use, and housing.[1] Therefore, at each session, the nurse will assess mental health, substance use, and housing needs to establish a plan of care with the participant. The nurse will coordinate health and social service navigation with the social workers at the agencies as needed with permission of the participant. The nurse will review HIV acquisition and transmission risk factors with the participant at each session and inquire about engagement in sexual risk behaviors since the last NCM session. During each NCM session and as needed, youth will complete an HIV risk profile used in the clinic setting to assess for PrEP eligibility based on the extent of behavioral risk. A screening tool developed from the Centers for Disease Control and Prevention 2014 Clinical Practice Guidelines for PrEP use will be used to assess PrEP eligibility based on HIV risk behaviors at the beginning of each NCM session to determine whether recent behaviors warrant PrEP as a possible intervention for HIV prevention. This includes having a HIV-positive sexual partner, recent bacterial STI, a high number of sex partners, a history of inconsistent or no condom use, or commercial sex work, and IV drug use. Houston, TX is considered a high HIV prevalence area and homeless youth are considered a high prevalence network. The nurse will use MI strategies to evoke participant generated HIV prevention goals and strategies. In the event that a participant is unable to attend a session in person, they will be offered the option of attending the session via video chat or phone, or meeting at a public location that is convenient for them such as a neighborhood library. Due to COVID-19, nurse may elect to deliver the intervention via video call depending on current COVID-19 risk level, availability of PPE, health of study staff, health of participant, and location of participant**. (2) Behavioral Feedback**. Each session will entail HIV prevention education (i.e., risk behaviors and prevention strategies) and behavioral goal setting to align the participant's goals with their current behaviors to evoke personal motivation to adopt and maintain HIV prevention strategies. Building on the goal setting of NCM using MI strategies, intervention youth will complete very brief daily diaries on their study-issued phone that populates an interface that provides visual feedback about how one's current behaviors align with their health goals. These daily diaries take less than 5 minutes to complete each day. The nurse then can use this visual to facilitate discussion about the barriers and facilitators that impeded or enhanced one's ability to actualize the uptake and adherence to HIV prevention strategies. The nurses will make monthly booster calls to intervention participants on the study issued phone in months 1-3 following the end of the face-to-face sessions. During this call, the nurse will inquire about the uptake and adherence to the HIV prevention strategies outlined during the NCM sessions, any other needs that they can address for the participant at that time, and will help the participant navigate services as needed.

Table 2. Team Developed Enhanced NCM HIV Prevention Intervention Session Description

#	Session Title	CHSCF Construct	Motivational Interviewing Discussion Topics	Session Goals
1.	Introduction &	Situational,	Review HIV risk behaviors & prevention	Establish rapport;

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

	Needs Assessment	personal, social factors, & resources	strategies (condoms, HIV/STI testing, treatment, PrEP, nPEP) knowledge, attitudes, beliefs, self-efficacy	assess HIV risk, PrEP eligibility
2.	HIV Prevention Strategies & Goal Setting	Nursing goals	Review personal HIV risk; use MI to discuss strategies to increase the safety of sexual activity, evoke change talk	Select HIV prevention behavioral goals and action plan
3.	Behavioral Feedback & Goal Alignment	Health seeking & coping behaviors	Identify gaps between goals & behaviors (e.g., self-management, coping, health care engagement), evoke change talk	Revise/reinforce plan to meet/maintain HIV prevention goals
4.	Addressing Facilitators & Barriers	Perceived behavior compliance & coping effectiveness	Review goals and action plan; use MI to discuss personal HIV prevention behavioral change facilitators & barriers, evoke change talk	Revise/reinforce HIV prevention goals and action plan to increase facilitators
5.	Establishing a Medical Home	Immediate health outcomes	Review goals and action plan; discuss local clinic preferences and schedule well-check as indicated, evoke change talk and behavioral maintenance	Revise/reinforce HIV prevention goals, action plan, follow-up care plan
6.	Moving Toward Health & Wellbeing	Long-term health outcomes	Review goals and action plan; identify additional health, housing, work, and education needs/goals, evoke change talk and behavioral maintenance	Reinforce HIV prevention behavioral goals and action plan

HIV Prevention Goal Setting. The nurse will use MI strategies to evoke participant-generated HIV prevention goals and behavior change talk. Each session will entail HIV prevention education (i.e., HIV risk behaviors and prevention strategies) and behavior goal setting to align the participant's goals with their current behaviors and evoke personal motivation to adopt and maintain HIV prevention strategies. For HIV positive youth and youth who test positive for HIV during the study period, the nurse will focus on linking youth to HIV care and promoting behaviors to reduce HIV transmission and promote medication adherence. For youth who are not PrEP eligible based on their current HIV risk, the nurse will promote the adoption of or encourage the maintenance of HIV prevention strategies.

HIV Risk Profile and PrEP Eligibility Assessment. HIV status will be assessed at baseline using INSTI HIV-1/HIV-2 Rapid Antibody Test. Based on our prior studies, we estimate that 5-10% of youth will be HIV positive. During the first NCM4HIV session and at the beginning of each subsequent session, a screening tool developed from the Centers for Disease Control and Prevention 2014 Clinical Practice Guidelines for PrEP use that is current standard practice at the local HIV clinic. This screener will be used to assess PrEP eligibility based on their HIV risk behaviors (e.g., having an HIV-positive sexual partner, a recent bacterial STI, a high number of sex partners, a history of inconsistent or no condom use, intravenous (IV) drug use, or commercial sex work) to determine whether recent behaviors warrant PrEP as a possible intervention for HIV prevention. Houston, TX is considered a high HIV prevalence area and YEH are considered a high prevalence network.

HIV positive or PrEP eligible youth, will be assigned to the PrEP/HIV RN who will follow PrEP and HIV clinical care guidelines and standing orders under the supervision of Dr. Paul in collaboration with the PrEP Navigator. This will be incorporated into the NCM sessions. The care plan will include coordinating access, uptake, and adherence to PrEP, and promoting HIV preventing behaviors (e.g., HIV/STI testing, condom use, reducing sexual partners, reductions in IV drug use, avoiding trade sex). For HIV negative, PrEP eligible youth, the nurse will discuss what PrEP is, how it works, its risks and benefits, and the implications of its use (e.g., follow-up lab work and appointment schedule) to promote shared decision making. If the participant is interested in receiving PrEP, the nurse will begin the lab work (e.g., 4th generation HIV test, kidney function, STI testing), and the PrEP Navigator will submit the patient assistance application to cover PrEP medication costs. To reduce medication delivery barriers, the PrEP

Navigator will deliver PrEP medications to the nurse to dispense to the participants at the NCM session. Owing to the established relationship between Drs. Paul (Co-I) and Flash (consultant) and the Gilead Patient Assistance Program, the turn-around time from getting lab work and submitting the assistance application to having PrEP medication in hand is approximately 3 days. The nurse will follow standard clinical procedures for follow-up lab work. Our previous work suggests that approximately 84% of participants will be PrEP eligible based on the CDC Guidelines.[6] While this is not a PrEP adherence study, it is important to measure adherence for those who uptake PrEP during the study. Therefore, we will measure PrEP adherence using UrSure, a urine test, at each follow-up time period for a subset of 60 youth in either arm who uptake PrEP during the study..

For youth who disclose a recent sexual assault, the nurse will coordinate with the Harris Health System for a sexual assault nurse exam. If the participant is within the 72-hour window where nPEP would be most effective for HIV prevention, the medication will be started with consent and the nurse will coordinate necessary follow-up care. Based on our prior work, we estimate that up to 24% of youth may experience sexual assault during the study period and be potentially eligible for nPEP.[6] This nurse-led strategy provides direct access to PrEP/nPEP and HIV care versus linkages to care or referrals which are often less effective among individuals experiencing homelessness.[56]

Booster Calls. After the completion of the 6 NCM sessions, the nurse will make monthly booster calls for another 3 months to gradually graduate participants from the project, an important feature with HIV positive homeless adults in SPINS.[109] During these calls, the nurse will assess uptake and adherence to the youth's HIV prevention goals and help the youth navigate needed health and social services.

Exit Interviews. To qualitatively assess the mechanisms of change including assessment of the barriers and facilitators of adoption and maintenance of behavior change, we will conduct exit interviews with a subset of approximately 40 intervention youth (e.g., 20 youth with no/low reported behavior change, and 20 youth with uptake of PrEP). Specifically, we will ask youth what intervention feature they believe helped most in adopting the HIV prevention strategy, what made it hard to adopt or maintain the behavior change, and what made it easy to adopt or maintain the behavior change.

Data and Safety Monitoring

Nurse Training. Two nurses from will be hired by UTHealth and one existing Research Nurse from UTHealth will serve as the 3 nurse case managers under the direction of Co-Is Drs. Paul and Quadri (see LOSs). These nurses have the expertise to work with YEH in a non-judgmental and caring way that promotes acceptance and fosters trust. They will receive 2 weeks of training from the Co-Is and myself, including protection of human subjects certification, and a review of study protocols and procedures, trauma-informed care, adolescent brain development, HIV prevention, and PrEP/nPEP clinical management. They will also become knowledgeable of local resources relevant to HIV prevention and the social and housing needs of YEH. The nurses will also attend 4 days of MI training provided by a certified MI trainer specializing in homeless populations. The nurses MI skills will be assessed and their delivery of the 6-session content using role-play and retrained until skills are rated as excellent by the study team (see Human Subjects section). Once they have mastered session delivery with fidelity, they can meet with participants.

Intervention Fidelity Checks. All intervention sessions will be audio recorded; 25% will be reviewed for NCM fidelity in duplicate by the Research Coordinators and myself and 25% will be reviewed by the MI trainer. Rating discrepancies will be discussed in bi-weekly team meetings.

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

The nurse will use a standardized fidelity checklist to self-rate adherence to the delivery of the general session content (see Table 2) at each NCM4HIV session, procedures the team has used in the past to assess intervention fidelity. Any nurse falling below 90% adherence will be retrained. The nurse will complete session notes on topics covered, environmental and situational influences that emerged, and updates on the participant's behavior goals and cognitive appraisals. If any nurse has difficulty establishing rapport with an assigned participant, the team will discuss alternative solutions including reassignment to another team nurse. The team will also discuss any issues that arise with intervention delivery at the weekly check-in meetings and create individualized development plans as needed to assure the highest level of care and delivery of the intervention with fidelity.

Data Safety and Monitoring Plan (DSMP)
The DSM plan is in accordance of the Policy of the National Institute of Nursing Research for Data and Safety Monitoring of Extramural Clinical Trials set forth in 2014. As part of the DSM plan, we have convened a Safety Monitoring Committee (SMC) of which the organization, responsibilities, and operation are mandated by NIH and NINR policy.

Trial Type/Level of Review. This study does not involve the testing of pharmacologic agents or any therapeutic treatments. Rather we are testing the efficacy of a nurse-led HIV prevention intervention. This study is classified as a Phase II of the Prevention Intervention Continuum – Methods Development, a minimal risk level study that dictates annual review by the IRB. To add additional safety measures for this study, we will convene a SMC. This study constitutes minimal psychological and physical risk and no legal or social risks. The risks are minimal since educational interventions generally promote good health, not endanger it. Our eligibility criteria are established to exclude individuals for whom the study procedures are not appropriate.

Monitoring Entity
Role of the PI and Investigative Team. Dr. Santa Maria will have primary responsibility for monitoring study research staff, who will receive training on the study design, recruitment, and protocol prior to study initiation. Research staff will receive formal training on the study protocol by Drs. Santa Maria, Flash, Quadri, and Paul, which will entail 2 weeks of intensive training session followed by additional training sessions as needed. The team will attend bi-weekly team meetings during data collection with the principal and co-investigators to discuss any study issues regarding recruitment and follow-up data collection and weekly meetings with Dr. Santa Maria. These meetings will be used to discuss experiences with the intervention participants, provide consultation, ascertain whether the research staff are following study protocols, evaluate and reinforce cultural competence, and identify any potential adverse reactions. Dr. Padhye, study statistician, will coordinate data management and analysis. He will oversee development of data entry screens and the database development, supervise data entry verification, and work with the investigators in conducting all data analyses.

Role of the Safety Monitoring Committee. The SMC is responsible for oversight of the activities related to implementing the clinical trial to ensure patient safety, conformance to the clinical protocol, overall performance of the trial components, and integrity of the data being collected. The SMC will meet prior to participant enrollment and then meet quarterly to review adverse events and participant safety concerns and annually to review study progress (e.g., recruitment retention, and safety procedures). Data quality and completeness and timeliness will be provided to the SMC including total number participants screened, enrollment rates, exclusion rates and reasons, randomization numbers, completion of scheduled follow-ups, reasons for study withdrawal, referral site rates, adequacy of enrollment composition, demographic similarities/differences between intervention and control group, protocol deviations

and adherence, compromises in confidentiality. All meeting materials will be considered privileged by SMC members. This confidentiality should be maintained at all times to the extent permitted by law.

The SMC will comprise 3 members with expertise in risk prevention, health communication, and/or homeless youth intervention research. These members have extensive expertise to review the scientific design and conduct of a study, to evaluate safety and risks to participants, to interpret data statistically, and to make recommendations concerning continuation, modification, suspension, or termination of a study. Dr. Sarah Narendorf, Social Work Scientist at the University of Houston Graduate College of Social Work; Dr. Emily Arnold, Anthropologist at the University of California San Francisco Center for AIDS Prevention Studies; and Dr. Christine Markham, Behavioral Scientist at the UTHeath School of Public Health will be the monitoring committee members (see Letters of Support).

SMC meetings conducted quarterly will begin after the first week of data collection. In addition, should any adverse event occur, the monitoring committee will be informed immediately, and a special session will be scheduled to discuss strategies to deal with the event. The quarterly meeting will include a synopsis of protocol and design, discussion of the status of interventions and data collection procedures, a summary of subject contacts, discussion of any adverse events or potential adverse events, status of data entry and verification, and a summary of any descriptive and inferential statistics to date. Data quality and completeness and timeliness will be provided to the SMC including total number participants screened, enrollment rates, exclusion rates and reasons, randomization numbers, completion of scheduled follow-ups, reasons for study withdrawal, referral site rates, adequacy of enrollment composition, demographic similarities/differences between intervention and control group, protocol deviations and adherence, compromises in confidentiality. The SMC will meet in a closed session without the investigators. In this meeting, the committee will discuss the need for additional procedures to prevent adverse events or ensure data integrity. In the unlikely case that the study may need an early termination due to unexpected adverse events or inadequate conduct of the stud, the committee will make recommendations to the investigators. Recommendations from the monitoring committee meetings will be shared with the UTHealth IRB and NIH during annual reports and immediately if the monitoring committee identifies adverse events not previously reported or recommends early termination of the study.

Role of the IRB. This study will be approved by the UTHealth IRB. The UTHealth IRB will be the primary oversight IRB for the study and the study PI (Dr. Santa Maria) will be responsible for reporting to the IRB about the status of the study. Annual progress reports and renewals will be completed for the IRBs and will include a summary of the recommendations of the monitoring committee. If adverse reactions related to study procedures are noted, they will be immediately reported to UTH IRB by Dr. Santa Maria so that the IRB is aware of any risks involved with the study. The IRB will be responsible for ensuring adequate and appropriate membership composition of the SMC as specified by NINR policy.

Reporting to NINR. Dr. Santa Maria, the PI, will be responsible for submitting necessary reports to NINR. Summaries of the protocol and design, status of intervention group, data collection procedures, summary of subject contacts, discussion of any adverse reactions or any potential adverse reactions, status of data entry and verification, a summary of any descriptive statistics to date, and the recommendations of the monitoring committee will be included in each annual report to NINR. NINR will be notified within 7 days if the human subjects research or DSM plan is changed prior to or during implementation of the clinical trial for approval. In addition, should any adverse reaction occur or should the monitoring committee recommend

early termination of the study, the information will be immediately reported to the NINR program officer. All personal identifiers will be removed from any documentation sent to NINR. Timely reports to NINR will be generated for:

- Unanticipated problems or unexpected serious adverse events that may be related to the study protocol
- IRB-approved revisions to the study protocol that indicate a change in risk for participants
- A summary of recommendations made by the SMC or other monitoring entity as appropriate and (if applicable) the action plan for response
- Notice of any actions taken by the IRB or regulatory bodies regarding the research and any responses to those actions

DSM Procedures

Dr. Santa Maria will have primary responsibility for monitoring study research staff, who will receive training on the study design, recruitment, and protocol prior to study initiation. Research staff will receive formal training on the study protocol by Drs. Santa Maria, Flash, Quadri, and Paul, which will entail 2 weeks of intensive training session followed by additional training sessions as needed. The team will attend bi-weekly team meetings during data collection with the principal and co-investigators to discuss any study issues regarding recruitment and follow-up data collection and weekly meetings with Dr. Santa Maria. These meetings will be used to discuss experiences with the intervention participants, provide consultation, ascertain whether the research staff are following study protocols, evaluate and reinforce cultural competence, and identify any potential adverse reactions. Dr. Padhye, study statistician, will coordinate data management and analysis. He will oversee development of data entry screens and the database development, supervise data entry verification, and work with the investigators in conducting all data analyses.

Follow-up face-to-face visits at 3, 6, 9, and 12-months will include a query of participants on whether they had “any serious health events that caused them to seek medical attention within the past 3 months” and if any of these resulted in “hospitalizations overnight.” Details of these events will be recorded.

Data Management. The research coordinator will monitor study data for completeness and accuracy weekly. Ongoing training and weekly quality assurance checks will be performed to ensure adherence to all study protocols including confidentiality. Survey data will be stored on hard drives of encrypted tablets and then uploaded to a desktop microcomputer master file daily. Individual data files are automatically merged with the master data set via REDCap. Weekly backups of these survey data set will be stored as an encrypted file and in a secure area physically remote from the data management area. All study related paper forms, surveys, and data will be destroyed by shredding after seven years. All necessary firewall and password protections will be implemented to restrict access and ensure data confidentiality.

Data Security. Unique passwords will be assigned to data management and data analysis team members, tracking staff, project coordinators, and investigators. Unique participant identifiers will be rigorously protected by team members. No names will be used in data analysis files or in reports. No names will be kept on the computer where the study data are collected or stored. Results of this study will be reported in the aggregate. Data collected in the study will be kept confidential except in cases when the research staff are provided with information that raises suspicion for abuse, neglect, harm to oneself, or harm to another. Participants will be made aware of the confidentiality of the data except in cases of safety concerns during the consent

and assent process. In order to minimize risk and ensure the quality of the data, research staff will receive extensive training. Research staff will attend biweekly supervision meetings where any problem will be discussed and solutions developed. Any breaches of protocol will be immediately reported to the PI, and in the case of breach of confidentiality or other event that would constitute a potential adverse event, they will be reported to the UTHealth IRB within 2 business days. This would include situations where interviewers need to break confidentiality in cases of suspected concern for child abuse, suicide, or homicide. As stated above, research staff are extensively trained on handling such sensitive situations. No such events have happened in our previous studies with homeless youth. Such events are immediately reported to the PI, the appropriate authorities, and an adverse event report filed with the UTHealth IRB.

Data at pre- and post-surveys will be collected on tablets using surveys programmed into REDCap. Computerized assessments are transferred electronically to UTHealth on a daily basis. We have used similar protocols with our previous homeless youth studies with success. REDCap is a well-tested computerized survey program. Our staff are experience withREDCap surveys, and this should reduce implementation, data management, and design problems. Participants entering data will be able to interrupt and resume sections in mid-course, review previously entered data, and back up to change prior entries. The quality of the data on these programs is enhanced, as REDCap will provide immediate feedback to the participant if unexpected data are entered. Only data analysis personnel connected with the study will have access to data files. Those files will be de-identified and not contain any identifying information.

Paper Study Documents. To reduce the risk of transmission of infectious diseases, all documents will be programmed as forms in REDCap and accessible only to study staff. Paper documents will only be used as a back up and any collected hard copies will be saved in a secured and locked filing cabinet at the UTHealth Cizik School of Nursing for seven years. All study related forms, surveys, and data will be destroyed by shredding after seven years. In order to assure security of the data, we will make weekly backup copies of the REDCap data set. These copies will be stored in a secure area physically separate from the data management and analysis sections of the main project site.

Phone Data Loss Prevention. Participants will be provided with a study-issued smart phone to allow them access to pre-programmed homeless youth resources and the behavior feedback interface for the intervention arm. The phone will also be equipped with capability to conduct video phone calls in the event that the intervention needs to be delivered remotely. As well, the phones will facilitate tracking of participants, in addition to our extensive tracking protocol, to enhance follow-up retention. In our previous study, we had a phone loss or damage rate of 12%. If a phone is lost, it will be remotely wiped by UTHealth IT AirWatch system. No replacement phone will be provided to each participant in the event of a lost, stolen, or damaged phone. Paper versions of the daily diaries will also be available. Phone lines will be disconnected after 12 months or when study staff determines that the phone is lost, stolen, non-functional, or no longer being used for study purposes.

Role of NIH. Summaries of the protocol and design, status of intervention group, data collection procedures, summary of subject contacts, discussion of any adverse reactions or any potential adverse reactions, status of data entry and verification, a summary of any descriptive statistics to date, and the recommendations of the monitoring committee will be included in each annual report to NIH. In addition, should any adverse reaction occur or should the monitoring committee recommend early termination of the study, the information will be immediately reported to the program officer.

Drs. Santa Maria, Padhye, Lightfoot, Nyamathi, Quadri, and Paul will meet every other week (by phone and/or in person) to monitor study progress including data collected from participants on any serious health events that caused them to seek medical attention and if any of these resulted in hospitalizations overnight. Any adverse reactions noted by any of the team members will be immediately reported to the principal investigator, the UTHealth IRB, SMC, and NINR. All adverse events will be reviewed monthly by the research team and quarterly by the SMC. Also, in keeping with NIH guidelines, minority status and gender will be included in these reports to allow for detection of differential effects.

Adverse Events and Unanticipated Problems

While participants will be assured that their participation will not affect health and social services being provided at any location, some participants may feel concerned about or pressured to be part of the study. We will verbally assure participants at the beginning of each NCM session and at each follow-up that their participation is voluntary and that they can participate in all, part of, or none of the session and can withdraw from the study at any time for any reason without penalty.

Adverse Event Identification. Survey questions and nurse case management sessions might create awkwardness or discomfort due to the potential for disclosing or discussing risk behaviors. A potential risk in participating in the proposed research is becoming more aware of and/or reporting past events, current circumstances, thoughts and feelings, and risk behaviors that may make participants feel uneasy. The research staff will receive 4 weeks of training prior to initiating recruitment procedures for this study to assure that all protocols and procedures are followed. Research staff will have ongoing supervision in how to handle awkwardness, embarrassment, or discomfort. Participants can choose whether to be in the study or not. They may withdraw at any time without consequences of any kind. They may also refuse to answer any questions they do not wish to answer and still remain in the study. It is possible that there may be occasions when study participants exhibit stronger and more serious signs of emotional distress; we may encounter individuals who express suicide intent, have psychiatric emergencies, or exhibit other indicators of acute distress. Research staff will be trained to identify signs of acute distress or suicidal ideation and trained how to respond if they occur. We will emphasize to research staff at all study team meetings that if a participant becomes upset, they should be offered the option of discontinuing participation in the study without penalty (i.e., still receiving payment) or continuing at a later time after a break. Further, the computer assisted survey administration limits participant exposure to potentially sensitive items. For example, participants who have not engaged in a certain risk behavior, such as substance use, are not exposed to more detailed questions about use. Participants will also be informed that they may skip any item that makes them feel uncomfortable. In the event of any acute emotional distress, research staff will remain with the participant until s/he is no longer distressed.

The Covenant House Texas (CHT) shelter, where some of the NCM intervention sessions may be conducted when preferred by the participant, has 24-hour staff trained in managing acute episodes of distress and psychosis. CHT shelter has a clinic staff by Baylor College of Medicine Pediatric Resident in their Adolescent Fellowship on the premises with a clinical psychologist and a psychiatrist on staff. The Salvation Army (SA) drop-in center has social work staff available during business hours who are trained in managing acute episodes of distress and psychosis. SA has a Healthcare for the Homeless Program clinic that operates 1-2 days a week. We will follow the mental health safety protocols of the shelter and drop-in center to manage any participant needs including acute mental health needs that may arise during the study. Individuals who wish to pursue follow-up care will also be given a referral list specifically tailored

to the individual's request. We will have prepared referral lists for perpetrators and victims of abuse as well as for common psychological issues. At the end of each assessment, all participants will be offered a list of relevant, local referrals. We will not be asking about suicidal ideation during the study, so it is unlikely that we will encounter acute suicidal ideation. However, given the risk of suicide and mental health issues within the population, we have strict protocols in place for handling mental health concerns that arise among subjects during the study. As well, anyone having direct involvement with the participants will be fully trained by the PI and the partnering recruitment agencies in procedures for assessment and intervention in cases where suicidal ideation is expressed. The nurse interventionists have additional institutional policies and procedures in place they will follow to assure swift and safe response to an acute mental health crisis. This may include both in-patient and out-patient follow-up mental healthcare. In case of an adverse mental health event, regardless of whether it is related to the study, research staff will be instructed to immediately contact the shelter or drop-in center staff to implement already in place protocols for managing youth expressing suicidal ideation and to contact the PI and take appropriate clinical action in these circumstances to assure participant and staff safety including referral to another level of clinical care. All study staff will be trained to immediately notify recruitment site staff and facilitate implementation of protocols for care in cases of acute mental distress. Our experienced MD supervisors (Drs. Quadri and Paul) and Dr. Santa Maria will be available for immediate consultation in the event of encountering an unexpected acute psychological issue; and as part of their training, research staff will be made familiar with referral resources and procedures for local psychological, social service, and other emergency care needs.

Adverse Event Reviewing. Adverse events will be reviewed at each study team meeting to assure all participant safety and reporting protocols were followed. Reports of all Adverse Events and unanticipated problems will be The SMC will meet prior to participant enrollment and then meet quarterly to review reports on adverse events and unanticipated problems, discuss participant safety concerns, and review general study progress.

Adverse Event Reporting. Study participants will be encouraged to immediately report any "emergencies or events" by calling the study contact number. These instructions will be included on all instructions that are sent to participants, programmed into the study issued cell phones, and on the consent forms. The study team will record all reported events in the adverse events and unanticipated problems log (including the subject's name, date, and event description). All members of the study team will inform the principal investigator, Dr. Diane Santa Maria immediately, of any adverse events and unanticipated problems who will consult with co-investigators and the safety monitoring committee members on the action. The PI will report the incident to the UTHealth IRB within one week. The action and date of implementation will also be recorded in the adverse event unanticipated problems log. The entire investigative team and monitoring committee will participate in classifying events as "serious" or "non-serious" (see list below), as well as "non-attributable," "possibly attributable" or "attributable" to the intervention (unlike a pharmaceutical trial where known side effects exist, the classification of "expected" vs. "unexpected" is inappropriate for this behavioral intervention). The SMC will advise the PI and the study team on actions to be taken to minimize further adverse events and unanticipated problems within 2 weeks of reviewing the reports.

1. Serious events include any event or condition that is life threatening, results in a hospitalization, cancer or a physical or cardiac event serious enough to require medical attention. These events may be:
    a. Fatal
    b. Life threatening

c. Permanently disabling
d. Required or prolonged hospitalization (Admission—not ER visit)
e. Overdose
f. Significant hazard to patient

2. Non-Serious events includes all other events.

A few potential minimal risks to subjects exist such as breach of confidentiality or normal risks associated with having a phone. Breach of confidentiality is not believed to present any significant risk given the data protections described above. However, to mitigate this risk we have outlined steps we will take to protect confidentiality in the Human Subjects sections, **Safeguarding Confidentiality and Certificate of Confidentiality**. Before data collection is initiated, researchers will obtain a Certificate of Confidentiality from NIH to protect participants from the requested release of study data. All participants will be informed that this certificate has been obtained, and what protections it affords them during the informed consent process. Participant data will not be released to any party outside the research team.

Potential Risks.
There are no physical risks associated with participation. The risk of psychological distress is related to the potential of receiving a positive HIV or STI test result. The types of study questions concerning past events, current circumstances, thoughts and feelings, sexual behaviors, substance use, and sexually transmitted infections may cause distress. Participants may find thinking about and answering questions about these issues upsetting; these questions will be asked in as sensitive a manner as possible. While participants will be assured that their participation will not affect health and social services being provided at any location, some participants may feel concerned about or pressured to be part of the study. Another potential risk is the loss of confidentiality or disclosure of information or data about the participant. While there were no reported adverse reactions to Nurse Case Management in our previous studies, there is the potential of stress and negative reactions from the self-reflection during the sessions.

For data collection, participants may find thinking about thoughts and feelings that arise or answering questions about these issues upsetting; these questions will be asked in as sensitive a manner as possible. As well, if a participant answers no to a sexual activity question, they would not receive additional, more details questions about sex. By tailoring the questions, we minimize the exposure to sensitive questions and reduce the burden and fatigue that may arise from taking a survey. We use ACASI computer-based surveys to allow participants to read and answer the questions privately and not have to hear them aloud or tell another person, which may reduce any possible distress associated with answering the questions. While participants will be assured that their participation will not affect health and social services being provided at any location, some participants may feel concerned about or pressured to be part of the study. We will verbally assure participants at the beginning of each NCM session and at each follow-up that their participation is voluntary and that they can participate in all, part of, or none of the session and can withdraw from the study at any time for any reason without penalty. Another potential risk is the loss of confidentiality or disclosure of information or data about the participant. We have detailed below extensive measures to ensure confidentiality and decrease the risk for disclosure of private information.

During data collection, participants may refuse to answer any questions that make them feel uncomfortable. Participants may discontinue participation in the study at any time. We anticipate that the types of adverse experiences that may occur, if any, may be associated with issues

arising during data collection. None of these risks are considered significant. Having a study phone poses no more risk than having a personal phone.

This is a single site study.

Ongoing assessments that may impact safety or ethics of the study
The research team is active in HIV prevention research and will continue to monitor the literature, attend national and international conferences, and consult with colleagues to assure that we are aware of any emerging data that may impact safety or the ethics of the study.

Advanced plans for interim/futility analysis
One focus of the investigator meetings will be to continuously monitor and develop strategies to prevent adverse reactions, monitor the research staff, and protect data integrity. Accrual data will be reviewed by the team and the UTHealth IRB. The study team will make amendments to the protocol should accrual fall below 15% of the target, or should drop-outs exceed projections by 15%. This will include the addition of recruitment sites.

Statistics
Randomization. Participants will be randomly assigned to the intervention or wait list control arm using a computer-generated blocked 2:1 allocation; 300 participants will be in the intervention arm and 150 will be in the wait list control arm (see Figure 3). Participants will be told which group they are in after completing the baseline survey and will receive a study-issued phone with programmed YEH resources unless they prefer to use their own phone. In this case, the behavioral feedback app will be loaded onto their personal phone for those in the intervention arm, and these youth will be provided with a list of YEH services.

Study Design.

	Baseline	Intervention	3 Mon.	6 Mon.	9 Mon.	Intervention
Treatment arm	O_1	X O_2	O_3	O_4	O_5	
Wait list control	O_1	O_2	O_3	O_4	O_5	X

Sample Size and Power Calculations. The primary endpoint is the efficacy of NCM to increase PrEP and nPEP uptake, HIV testing, STI screening, and condom use. Conservatively assuming an attrition rate of 30% at 9 months, the final sample size will be 315, with the 2:1 randomization allocation providing for 210 participants in the intervention arm and 105 in the control arm. We estimate a retention rate of 70% based on study resources, community partnerships and support, the use of study-issued phones, the use of increasing follow-up incentives. This retention rate is substantially lower than the rate reported for other longitudinal YEH studies that have retained 88-89% [13,14] of youth to be very conservative in our retention estimation.

Table1. Outcome Measures by Study Aim

Construct	Scale/Measure	Alpha
Aim 1 Outcomes		
PrEP/nPEP Uptake	PrEP uptake; nPEP uptake (NCM report, chart review)	NA
Condom Use	Youth Risk Behavior Survey;[1] (condom use at last sex)	NA
HIV/STI Test Uptake	Rapid HIV test; Gonorrhea, Chlamydia, Syphilis test	NA
Aim 2 Outcomes		
Mental Health	Brief Symptom Index-18[2,3]	*0.80*
Housing Status	In a shelter, apt/house, with someone, outside, in a car…?	NA
Substance Use	TCU Drug Screen II[4,5]	*0.*89

Exploratory Outcomes (possible mediators based on CHSCF; see Figure 1)		
Healthcare Engagement	Healthcare clinic visit adherence[6]	NA
Condom Use Self-Efficacy	Condom Use Self-Efficacy Scale[7]	0.91
HIV Risk Perception	Perceived Risk of HIV scale[8]	0.88
PrEP Facilitators & Barriers	Facilitators and Barriers to PrEP Use[9]	NA
Health Seeking	General Help Seeking Questionnaire[10]	0.83
Coping	Coping Inventory for Stressful Situations-Adolescent[11,12]	0.92

For Aim 1, we anticipate having 87% power (95% CI: 84.8, 89.0) to detect the intervention effect on the reduction of condomless sex. Alpha was set at .05 and the power calculation was conducted using the SIMR package[15] by 1000 Monte Carlo simulations with a generalized linear mixed model design that included a random intercept per participant. Data for the simulation were generated with compound symmetric covariance structure in the SIMSTUDY package by assuming that 79% of participants are sexually active and the probability of condomless sex will reduce modestly from 0.7 to 0.4 in the intervention group. The probability was conservatively assumed to decrease to 055 in the control group due to the potential for a placebo and/or contamination effect. The effect sizes and powers for HIV testing and STI screening and treatment outcomes are anticipated to be of similar magnitude to the condomless sex outcome. For the PrEP uptake outcome, it was assumed that rates would change from 2% to 4% in the control group and to 24% in the intervention group, for which the simulation resulted in 99% power (95% CI: 94.6, 99.9). Power analysis for the continuous instrument scores of Aim 2 indicates that a sample size of n = 315 will provide 80% power for the interaction of time and arm in a repeated measures model when the effect size is f=.11, a small effect size. This calculation assumes a correlation between repeated measures of r = .50.

Analysis Plan by Study Aim. Descriptive statistics will be calculated by study arm for baseline demographic characteristics, including age, gender identity, race/ethnicity, sexual orientation, educational level, and employment. However, random allocation of the participants to the intervention and control study arms will make it unlikely that there will be significant differences between the groups for baseline variables that could confound the results. Descriptive statistics will be calculated for all measures at each time point. We expect missing data to be minimal. Obvious errors will be corrected; those that cannot, will be set to missing. Missing data on the instruments will be replaced using single imputation with case mean substitution (i.e., replacing a participant's missing items with that participant's mean item score).[16] Reliability estimates of the study instruments will be computed with Cronbach's alpha (≥ .70 will be considered acceptable for internal consistency).[17] Analysis for this study will be based on the intent-to-treat principle.[18] **Aim 1:** Generalized estimating equation (GEE) analysis will be used to compare the groups' changes over time in the dichotomous outcomes - PrEP uptake, nPEP uptake, condom use, and HIV/STI testing – assessed immediately post intervention and at 3-, 6-, and 9-months. The effects to be tested in the model will include time, study arm, and the interaction of time and study arm. **Aim 2:** GEE with normal distribution and identity link will be used to compare the intervention arm to the control arm over time with respect to mental health symptoms measured with the Brief Symptom Index, substance use, and number of homeless days in the past month. In case distributional assumptions are not met, Poisson link may be used for the number of homeless days and substance use days. The effects to be tested will include time, study arm, and the interaction of time and study arm. Time will be treated as a continuous variable unless nonlinearities are present, in which case it will be treated as a categorical variable. Hypothesis 1: Intervention youth will have increased PrEP/nPEP uptake and adherence, condom use, STI/HIV testing and treatment compared to wait list control youth. Hypothesis 2: YEH Intervention youth will have decreased mental health symptoms and substance use and report fewer nights on the street compared to waitlist control youth. **Exploratory Aim:** To explore for mediation of the variables in the Comprehensive Health Seeking and Coping Framework,

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

instrument scores for the secondary outcomes including health seeking, coping, HIV/PrEP knowledge, and condom self-efficacy (see Table 2) will be examined as potential mediators in the path between the intervention and the outcome. Each of these indirect paths will be tested separately in multilevel (2-1-1) mediation models[19] calculated in Mplus software.[20] The within-subject level in the mediating variable and the outcome (condomless sex) will be collapsed by taking the mean difference centered on each subject's baseline measurement. After collapsing the finest level, the intervention may be considered as a level 2 variable (i.e. between study arms) and the mediators and outcomes will be level 1 variables (subject-level).

Sex as a variable. In each of the analyses for Aims 1, 2, and the exploratory aim, we will assess for differences by sex (operationalized as gender identity, not biological sex). If the power is not adequate to assess for sex differences, we will control for sex differences in the analyses.

Equations for the models.

GEE models for aims 1 and 2 may be expressed as:

$$g(\mu_{ij}) = X_{ij}^{k}\,\beta^{k},$$

where μ_{ij} is the mean response for subject *i* at time *j*, and *g* is a link function that is selected to be appropriate for the type of response variable (normal, binary, or Poisson). The predictors are denoted by X_{ij}^{k}, where the index *k* is used to distinguish between each predictor. The predictors include the study arm (control/treatment), the time, and the interaction of time and study arm. Covariates, such as sex, may be included if the randomization has not resulted in uniform distributions in each study arm. Solution of the GEE estimating equation will result in estimated values of the coefficients β^{k}.

Ethics

Adequacy of Protection Against Risks.

General Recruitment and Informed Consent.

Participant recruitment will begin after obtaining UTHealth IRB approval.

Our team has received IRB approval for several studies involving daily diary phone data collection and interventions with vulnerable populations of young people including young adults and minors experiencing homelessness. To encourage engagement and promote inclusivity, there will be a study logo contest at recruitment sites prior to study enrollment prior to study enrollment. It will be open to anyone at the recruitment sites. A $50 gift card will be given to the creator of the winning logo. The winning logo will be chosen by a vote to be conducted at a Youth Working Group (YWG) meeting (see YWG description on page 10).

Flyers describing the study will be posted in the common area of local shelters, drop-in centers, and clinics as homeless youth often access services from multiple service providers and locations. We will pass out study information during street outreach events hosted by the partnering agencies. Local healthcare for the homeless providers, The Homeless Youth Network, and the Coalition for the Homeless will be informed about the study and flyers will be posted at local clinics with permission as well as coordinated access housing first locations (where youth can access housing services). Project staff will also approach youth who receive services at the Salvation Army and Covenant House Texas to screen for eligibility. Additionally, participants can contact research staff after seeing the flyers at other shelters, drop-in centers, or healthcare for the homeless clinics. The research staff will work with the shelter staff to

identify youth at the site each day who may be eligible. Research staff will also encourage youth to follow the study social media pages for updated information about how to be involved with the study. We will recruit participants three days a week during regular business hours at the shelter and drop-in centers and during street outreach. The research staff will maintain a consistent presence at the agencies and will approach young people who present. In the event that the common room in the shelter or drop-in center is crowded, they will ask to speak to identified youth in a private office. The research staff will explain the study and complete the informed consent process with interested youth. All prospective participants will be assured that study participation will in no way affect their health and social services. Informed consent and contact information will be obtained from participants. For minors between 16-17 years of age who are seeking homeless services and are otherwise considered emancipated, we will also obtain written informed consent to participate in the study and seek a waiver of parental consent for minors based on Federal Rule 45 CFR 46.408(c). We have successfully obtained this waiver of parental consent for minors experiencing homelessness in our prior studies. **Consent to Access Medical Records.** During the informed consent process, study participants will give permission to access their medical records using the HIPAA Authorization Form for study purposes.

Consent and Protection of Human Subjects.
A step-wise screening process will be followed. First, we will screen potential participants for eligibility using a REDCap form. The survey will ask age, if they are sexually active, and if they are receiving homeless youth services. Wewill also administer the Rapid Estimate of Adult Literacy in Medicine-Short Form (REALM-SF) and enter the score into the eligibility form.[2,3] See Appendix for REALM-SF. If they are within the age range, are receiving homeless services, and score greater than or equal to 4, then we will consent the participant.

Informed Consent Procedures. Written informed consent will be received by all eligible youth interested in enrolling in the study as participants. Consent will be completed prior to data collection. The consent form will thoroughly describe risk assessment, data collection, and intervention procedures, as well as benefits and risks of study participation. Study staff will assess participants' understanding of the consent form with a short checklist and clarify any areas of confusion. Once finalized, and prior to recruitment of any participants, consent forms will be thoroughly reviewed before approval by the UTHealth CPHS. The consent form will fulfill the requirements set out by the Committee for the Protection of Human Subjects (CPHS) from the University of Texas-Houston Health Science Center (UTHealth). Participants will be given the opportunity to refuse participation in the study and will be told that nonparticipation in the study will not affect services being provided by any health and social service providers. Once finalized, consent forms will be thoroughly reviewed before approval by the UTHealth CPHS. All study staff will complete the Protection of Human Subjects training at UTHealth prior to contact with potential participants. All study staff who will be recruiting youth will participate in project-specific training on project goals, procedures for recruitment, informed consent, data collection, and tracking, at which point they will have the opportunity to practice the recruitment and informed consent process. Research staff will also be shadowed during their first 3 recruitment sessions by the PI to assure that they are following the recruitment and informed consent process correctly. Retraining will be conducted as needed to correct consenting procedures.

Consenting Minors: Written consent will be obtained for all participants. We will apply for a waiver of parental consent for minors who are unaccompanied by a parent based on Federal Rule 45 CFR 46.408(c).

Due to the COVID-19 pandemic, informed consent process will also be available over the phone using the e-consent platform on REDCap. Study staff will inform interested individuals that they

must have access to text or email in order to complete the screening and e-consent (if eligible). Staff will screen over the phone using an online form and administer the REALM-SF test via text or email. Individuals will be asked to read the words over the phone and screener will score the REALM-SF according to current protocol. Screener will inform individual if they are eligible per current protocol.

If eligible, study staff will invite the individual to participate and explain that consent process takes about 30 minutes over the phone. If individual agrees, they will be emailed or texted a link to the e-consent form and staff will proceed to review each section of the consent form per current protocol. If participant agrees and signs e-consent form, a copy of signed consent form will be saved in REDCap and emailed to participant. Study staff will proceed to complete the communication form and set up a time and place for baseline data collection and final study enrollment per current COVID-19 guidelines (see risk mitigation plan in Appendix D).

Participant Tracking. Our team has a strong track record of retaining homeless youth in longitudinal studies. All participants will complete an extensive tracking form at the time of enrollment to collect participant contact information including personal phone number, alternative phone number (e.g., parent, sibling, or peer phone number), case manager phone number and email address, and social media information (e.g., Instagram and Facebook names). Youth will also be asked to sign a UTHealth media release and take a polaroid photo soley for the purpose of verifying participant identity during data collection and gift card distribution. This information is voluntary though youth will be instructed on the utility of providing this information to assist study staff in contacting youth for follow-up over the course of the study. These tracking procedures have been successful in our previous homeless youth studies and are supported by the literature.[10-14] We have a strong participant tracking database in place using the REDCap data management system. To follow-up with participants, the RA will first send participants a text message reminder on their study-issued phone to schedule the in-person survey at 3, 6, and 9 months. In order to improve retention, RAs will inform participants that if they contact the study team to schedule their 3,6, and 9 month survey first, they will receive an extra $5 gift card incentive. If the RA is unable to reach the participant by text, they will then call the study phone and other contacts listed on the contact form (e.g. friends, family, and case manager). Finally, RAs will reach out to participants using the private message features on Instagram and Facebook to reach youth. RAs will also be on site at the drop-in center and shelter weekly and therefore be able to meet up with youth who are due for follow-up. Finally, as part of the tracking and consent forms, participants will be asked for permission to contact the social workers and shelter and drop-in center staff in a final attempt to get ahold of the participant if the above methods have not worked. The nurses will also discuss the date of the next sessions and preprogram the calendar of the participant's study-issued phone with the dates of the 3, 6, and 9 month follow-ups. A smartphone calendar reminder will be set for 48 hours prior to the appointment to prompt the participant to call study staff to schedule the visit in the case the RA has not been successful in contacting the participant and scheduling the follow-up visit. The RAs will stay engaged with the homeless youth population by being at the recruitment sites weekly and attending agency events monthly.

Social media use. As mentioned in the tracking section, participants will be asked for social media information. In order to communicate with study participants via social media, study team must create pages. We will create Facebook, Instagram and Snapchat pages containing the project name CAYA. If team is unable to reach participant, they will send a private massage to the participants. In addition, social media platforms will be used as engagement tools. Social media platforms will not be restricted to participants, anyone will be able to follow the CAYA pages. However, measures to protect the privacy of current or potential participants will be in

place including hiding followers and not allowing external posts or comments. Research staff will post updates about the study, recruitment flyers, and health related information from credible institutions and motivational/inspiring content developed by the youth working group and research staff. All content will be approved by RC and PI prior to posting. Social media accounts will be managed in accordance with HOOP policy 219 and registered with the Office of Public Affairs per University guidelines.

Protection Against Risks. Steps taken to minimize other potential risks include:

Safeguarding Confidentiality. Data confidentiality is a high priority of the PI and research staff. All research staff will complete extensive training focused on each of the following topics: 1) project rationale and objectives, 2) the informed consent process, and 3) general data collection procedures (e.g., data collection, privacy). To assure participant confidentiality and accuracy of information, research staff will be extensively trained in standardized data collection procedures using a data collection manual of procedures. Unique participant identifiers will be rigorously protected by all research staff. Each participant will be assigned an ID number that will be utilized in place of names in all electronic and print data files. The file containing the links between participant names and identifiers will be kept in a separate password-protected file, which will be destroyed 12 months after the completion of the study. Informed consent will be stored in a locked filing cabinet in the Principal Investigator's office. No information that would disclose the participant's identity will be contained on any interview or survey research database. During the consent process the research staff will inform participants about restrictions on his/her ability to keep certain information confidential (i.e., by law, if the participant discloses intentions to hurt themselves or others). The staff member will report this information to shelter staff and the police when the risk for harm is immediate. This situation has never occurred in any of our past studies with homeless youth. Any adverse event will also be reported to the UTHealth IRB. Information from the study will not be shared with staff at the recruitment locations. The nurses and all study staff will receive HIPPA training on maintaining confidentiality.

Certificate of confidentiality

Per Section 2012 of the 21st Century Cures Act as implemented in the 2017 NIH Certificates of Confidentiality Policy, all ongoing or new research funded by NIH as of December 13, 2016 that is collecting or using identifiable, sensitive information is automatically issued a Certificate of Confidentiality (CoC). This CoC protects the privacy of research participants enrolled in this research study. With limited exceptions, researchers may not disclose names or any information, documents or biospecimens containing identifiable, sensitive information. The Certificate prohibits disclosure in response to legal demands, such as a subpoena.

Certificates protect names or any information, documents, or biospecimens containing identifiable, sensitive information related to a research participant. This is defined as "covered information" in the policy. In addition, if there is at least a very small risk that information, documents, or biospecimens can be combined with other available data sources to determine the identity of an individual, then they are protected by the certificate.

Participants will be asked to answer questions about private information that may have legal consequences if it were disclosed because homeless youth tend to interact with law enforcement more frequently and risk behaviors may be illegal. Therefore, all participants will be informed that this certificate has been obtained in the informed consent form, and what

protections it affords them during the informed consent process. Participant data will not be released to any party outside the research team.

Minimizing Participant Discomfort. Survey questions and nurse case management sessions might create awkwardness or discomfort due to the potential for disclosing or discussing risk behaviors. A potential risk in participating in the proposed research is becoming more aware of and/or reporting past events, current circumstances, thoughts and feelings, and risk behaviors that may make participants feel uneasy. The research staff will receive 4 weeks of training prior to initiating recruitment procedures for this study to assure that all protocols and procedures are followed. Research staff will have ongoing supervision in how to handle awkwardness, embarrassment, or discomfort. Participants can choose whether to be in the study or not. They may withdraw at any time without consequences of any kind. They may also refuse to answer any questions they do not wish to answer and still remain in the study. It is possible that there may be occasions when study participants exhibit stronger and more serious signs of emotional distress; we may encounter individuals who express suicide intent, have psychiatric emergencies, or exhibit other indicators of acute distress. Research staff will be trained to identify signs of acute distress or suicidal ideation and trained how to respond if they occur. With respect to the assessments, we will emphasize to research staff that if a participant becomes upset, they should be offered the option of discontinuing without penalty (i.e., still receiving payment) or continuing at a later time after a break. Further, the computer assisted survey administration limits participant exposure to potentially sensitive items. For example, participants who have not engaged in a certain risk behavior, such as substance use, are not exposed to more detailed questions about use. Participants will also be informed that they may skip any item that makes them feel uncomfortable. In the event of any acute emotional distress, research staff will remain with the participant until s/he is no longer distressed.

The Covenant House Texas (CHT) shelter, where some of the NCM intervention sessions may be conducted when preferred by the participant, has 24 hour staff trained in managing acute episodes of distress and psychosis. The Salvation Army (SA) drop-in center has social work staff available during business hours who are trained in managing acute episodes of distress and psychosis. We will follow the protocols of the shelter and drop-in center to manage any participant needs including mental health needs that may arise. CHT shelter has a clinic staff by Baylor College of Medicine Pediatric Resident in their Adolescent Fellowship on the premises with a clinical psychologist and a psychiatrist on staff. SA has a Healthcare for the Homeless Program clinic that operates 1-2 days a week. Individuals who wish to pursue follow-up care will also be given a referral list specifically tailored to the individual's request. We will have prepared referral lists for perpetrators and victims of abuse as well as for other psychological problems. At the end of each assessment, all participants will be offered a list of relevant, local referrals. We will not be asking about suicidal ideation during the study, so it is unlikely that we will have to deal with acute suicidal ideation. As well, anyone having direct involvement with the participants will be fully trained by the PI in procedures for assessment and intervention in cases where suicidal ideation is expressed. Research staff will be instructed to immediately contact shelter or drop-in center staff to implement already in place protocols for managing youth expressing suicidal ideation and to contact the PI and take appropriate clinical action in these circumstances to assure participant and staff safety including referral to another level of clinical care. As well, recruitment will take place in shelters and drop-in centers staffed by trained clinical social workers, case managers, and healthcare providers. RAs will be able to notify recruitment site staff and facilitate implementation of protocols for care in cases of acute distress. Experienced supervisors and Dr. Santa Maria will be available for immediate consultation in the event of encountering an unexpected acute psychological problem; and as part of their training, research staff will be made familiar with referral resources and procedures

for local psychological, social service, and other emergency care needs.

In order to minimize such risks that we may encounter in this study, extensive research staff training, and supervision will be developed. While the RAs in place have extensive experience with homeless youth, in the event of staff turnover, interview procedures will favor applicants with experience working with homeless youth or other vulnerable populations. UTHealth has staff and researchers highly experienced in research in vulnerable populations, sexual behavior, and mental health assessment interviewing. In our extensive research with homeless youth with our current RAs who are experienced and well trained in interview techniques related to sensitive material, we have rarely encountered participant reactions more adverse than mild discomfort, transient awkwardness, or embarrassment. RAs will be trained initially with ongoing supervision in how to handle such participant's transient discomfort. The training will also include UTHealth IRB certifications, protection of human subjects training (e.g., CITI certification), and a detailed review of the research protocols, strategies for interacting with homeless youth, collection of accurate data, feedback on how to interact in a non-judgmental manner, ethical issues, emergency protocols, train-the trainer on intervention training for participants, adolescent development, trauma-informed care, maintaining appropriate boundaries, and general HIV prevention information. A minimum of biweekly supervision meetings will be conducted with research staff.

Study Staff Training. RAs will be baccalaureate (nursing, social work, or public health) level professionals with experience working with homeless youth. RAs will receive a minimum of 2 weeks of training from Dr. Santa Maria and the team, including IRB protection of human subject certification, review of study protocols and procedures, administering the Behavioral Symptom Index[15] and REALM-SF during screening, trauma-informed non-violent communication skills, local health and social service resources, and HIV transmission and prevention.

We will staff 3 nurses, credentialed with the Harris Health Systemto serve as the nurse case managers. These nurses have the expertise to work with homeless youth and other high HIV risk vulnerable and stigmatized populations in a non-judgmental and caring way that promotes acceptance and fosters a trusting relationship. They are knowledgeable of local resources relevant to HIV prevention and the social and situational needs of homeless youth. Nurses will be baccalaureate or masters level professionals with experience working with homeless youth. They will receive 4 weeks of training from the PIs and study team; IRB protection of human subjects certification (CITI training), review of study protocols and the manual of procedures, trauma-informed non-violent communication skills training, adolescent brain development, local homeless youth health and social services, HIV acquisition/transmission and prevention information, PrEP/nPEP clinical management. Additionally, the nurses will receive adolescent specific training to assure youth friendly, age appropriate case management of participants who are 16-17 years of age. the nurses will attend a 2-day intensive training provided by an expert in Motivational Interviewing (MI) in homeless populations. As part of the training process, nurses will be assessed on their MI skills and the delivery of the 6 session content using role-plays and retrained until skills are rated as excellent (see Human Subjects section). Once they have completed the skills check off successfully, they will be able to meet with participants. Once a nurse starts to meet with participants, a Motivational Interviewing Network of Trainers (MINT) trained Motivational Interviewing expert will conduct ongoing session assessments for the first year. All intervention sessions in YR-1 will be audio recorded; 25% will be reviewed for NCM fidelity in duplicate by the RA and the PI and 25% will be reviewed using the MITI by a MINT trained reviewer. Rating discrepancies will be discussed in bi-weekly team meetings. The nurse will use a standardized fidelity checklist for each face-to-face session and rate their adherence to the delivery of the general session content, procedures the team has used in the past to

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

assess intervention session delivery fidelity. Any nurse falling below 90% adherence will be retrained. The nurse will complete session notes on topics covered, environmental and situational influences that emerged, and care plan updates including the participant's health goals and behavioral feedback appraisals. In the case of difficulty establishing participant rapport, the team will discuss alternative solutions including reassignment to another team nurse. The team will also discuss any issues that arise with the nurses and create individualized development plans as needed to assure the highest level of care and intervention fidelity.

Social workers at the 2 largest recruitment sites provide care to youth seeking services. All staff at CHT and SA will be invited to receive a 2-hour in-service to assure basic knowledge of HIV transmission, HIV prevention strategies, and PrEP/nPEP service navigation for all participating and non-participating youth. This will allow all youth in both study arms to have potential access to basic HIV prevention education and services. This training will be offered annually to the shelter and drop-in center staff to account for the high staff turn-over often seen at these any other social service locations.

Reducing the Risk for Coercion. To ensure that potential participants do not feel coerced to enter or remain in the study, research staff recruiting participants will follow a standardized script to ensure that all ethical issues are reviewed and that the study procedures are followed with fidelity. All protocols will be reviewed and approved by the UTHealth IRB prior to implementation. It will be made explicit in the informed consent document—both verbally and in writing—that participation in the study is voluntary, that it is unrelated to their access to health and social services, and that they can drop out of the research at any time for any reason. Participants will be verbally reminded at each follow-up that participation is voluntary and will not affect their ability to access any resources at the recruitment sites or at any other agency. Because of the potential for mistrust among youth experiencing homelessness, participants will be reminded at each session and follow-up visit that the data collected in the study and the information shared will be confidential unless they share that they are thinking of hurting themselves or someone else. Participants will be reminded that all study staff are mandatory reporters and are required to report if they suspect that a participant is at risk of hurting themselves or others. In addition, research staff reviewing the consent will be trained to probe for comprehension of the consent form and study procedures. Through our prior experience with homeless youth, the IRB, and homeless youth working group, we have also set the incentive levels at a modest amount that is commensurate with the amount of time youth will spend in the research study and not deemed to be coercive.

Pre-programmed Smartphone Homeless Youth Resources. The PI and University of Texas Health Science Center have experience with mHealth and study issued smartphones used for research among vulnerable populations of youth and young adults experiencing homelessness. Despite the high rate of homeless youth with smartphones, all participants will receive a study-issued smart phone with a data plan in order to standardize the intervention and facilitate health seeking, engagement in care, and participant tracking for follow-up scheduling. Participants can use their personal phone for the daily dairies when preferred. All study phones will be preprogrammed with the contact information for local resources. These resources will display as a 1-click button such as "Need a place to stay?; Looking for a Healthcare Provider?; Hungry?". Resources and contact information for services will be pre-programmed into the study-issued smartphones provided to participants. Resources will include contact information for 1) the National Sexual Assault hotline to access local trained sexual assault service providers, 2) the National Human Trafficking Resource Center to speak with a trained specialist, 3) the National

Runaway Safe Line for shelter resources, and 4) Sexual Assault Nurse Examiner locations. Participants will be shown how to access bedsider.org when they receive the phone to access local reproductive services. The phone will be pre-programmed with contact information for local homeless youth service providers including youth- and LGBTQ-friendly shelters, healthcare clinics (e.g., medical care, HIV/STI testing and treatment, and mental health services), and social service providers (e.g., meals, housing, education, jobs, ID, and legal services). Finally, the study staff "hotline" will be programmed into the phone. Study staff will be available to answer calls about the study throughout the business day and will return calls within 48 hours when received outside of the business day. Participants will also be able to text the study staff from their study phone.

Potential Benefits of the Proposed Research to Human Subjects and Others. Potential benefits to study participation, which will be outlined in the consent forms, are that the participants may become more knowledgeable of HIV transmission and prevention strategies. Participants may become more aware of how thoughts and feelings can affect one's behaviors and stress and how to uptake and adhere to HIV prevention goals. Our previous research and that of others suggests that young adults usually do not mind answering questions about their risk-taking behavior and knowledge, attitudes, and beliefs. In addition, research staff are provided with comprehensive lists of resources available to homeless youth and will receive extensive training on how to make referrals to appropriate resources if a participant indicates that s/he needs services they are not otherwise receiving. Finally, participants will have access to resources and contact information for services that will be pre-programmed into the study-issued smartphones provided to all participants throughout the duration of the study. Participants in the intervention arm may benefit from the linkages to care provided through the Nurse Case Management intervention. Through the HIV and STI testing offered to all participants, youth may become aware of a positive result and receive necessary treatment and linkages to care that they may not have otherwise have received.

Importance of the Knowledge to be Gained. This study will provide essential HIV prevention intervention efficacy data that will advance the science of HIV prevention among homeless youth. Findings from the study may advance the science of prevention-based Nurse Case Management interventions among youth experiencing homelessness. The proposed study will significantly contribute to the field of HIV prevention in a marginalized and hard-to-reach population. The intervention is designed to be widely scalable within the practical parameters of care currently provided through the Healthcare for the Homeless programs across the nation. Therefore, if efficacious, this intervention has the potential to be disseminated to young people experiencing homelessness across the country without significant investments in infrastructure, equipment, or staff resources.

Data handling and record keeping

Data Management. The research coordinator will monitor study data for completeness and accuracy weekly. Ongoing training and weekly quality assurance checks will be performed to ensure adherence to all study protocols including confidentiality. Survey data will be stored on hard drives of encrypted tablets and then uploaded to a desktop microcomputer master file daily. Individual data files are automatically merged with the master data set via REDCap. Weekly backups of these survey data set will be stored as an encrypted file and in a secure area physically remote from the data management area. All study related paper forms, surveys, and data will be destroyed by shredding after seven years. All necessary firewall and password protections will be implemented to restrict access and ensure data confidentiality.

Data Security. Unique passwords will be assigned to data management and data analysis team members, tracking staff, project coordinators, and investigators. Unique participant identifiers will be rigorously protected by team members. No names will be used in data analysis files or in reports. No names will be kept on the computer where the study data are collected or stored. Results of this study will be reported in the aggregate. Data collected in the study will be kept confidential except in cases when the research staff are provided with information that raises suspicion for abuse, neglect, harm to oneself, or harm to another. Participants will be made aware of the confidentiality of the data except in cases of safety concerns during the consent and assent process. In order to minimize risk and ensure the quality of the data, research staff will receive extensive training. Research staff will attend biweekly supervision meetings where any problem will be discussed and solutions developed. Any breaches of protocol will be immediately reported to the PI, and in the case of breach of confidentiality or other event that would constitute a potential adverse event, they will be reported to the UTHealth IRB within 2 business days. This would include situations where interviewers need to break confidentiality in cases of suspected concern for child abuse, suicide, or homicide. As stated above, research staff are extensively trained on handling such sensitive situations. No such events have happened in our previous studies with homeless youth. Such events are immediately reported to the PI, the appropriate authorities, and an adverse event report filed with the UTHealth IRB.

Data at pre- and post-surveys will be collected on tablets using surveys programmed into REDCap. Computerized assessments are transferred electronically to UTHealth on a daily basis. We have used similar protocols with our previous homeless youth studies with success. REDCap is a well-tested computerized survey program. Our staff are trained in REDCap surveys, and our extensive experience should reduce implementation, data management, and design problems. Participants entering data will be able to interrupt and resume sections in mid-course, review previously entered data, and back up to change prior entries. The quality of the data on these programs is enhanced, as REDCap will provide immediate feedback to the participant if unexpected data are entered. Only data analysis personnel connected with the study will have access to data files. Those files will be de-identified and not contain any identifying information.

Paper Study Documents. To reduce the risk of transmission of infectious diseases, all documents will be programmed as forms in REDCap and accessible only to study staff. Paper documents will only be used as a back up and any collected hard copies will be saved in a secured and locked filing cabinet at the UTHealth Cizik School of Nursing for seven years. All study related forms, surveys, and data will be destroyed by shredding after seven years. In order to assure security of the data, we will make weekly backup copies of the REDCap data set. These copies will be stored in a secure area physically separate from the data management and analysis sections of the main project site.

Phone Data Loss Prevention. Participants will be provided with a study-issued smart phone to allow them access to pre-programmed homeless youth resources and the behavior feedback interface for the intervention arm. The phone will also be equipped with capability to conduct video phone calls in the event that the intervention needs to be delivered remotely. As well, the phones will facilitate tracking of participants, in addition to our extensive tracking protocol, to enhance follow-up retention. In our previous study, we had a phone loss or damage rate of 12%. If a phone is lost, it will be remotely wiped by UTHealth IT AirWatch system. No replacement phone will be provided to the participant in the event of a lost, stolen, or damaged phone. Paper versions of the daily diaries will also be available. No data will be collected or

stored on the phones. Phone lines will be disconnected after 12 months or when study staff determines that the phone is lost, stolen, non-functional, or no longer being used for study purposes.

Role of the PI and Investigative Team. Dr. Santa Maria will have primary responsibility for monitoring study research staff, who will receive training on the study design, recruitment, and protocol prior to study initiation. Research staff will receive formal training on the study protocol by Drs. Santa Maria, Flash, and Paul, which will entail 2 weeks of intensive training session followed by additional training sessions as needed. The team will attend bi-weekly team meetings during data collection with the principal and co-investigators to discuss any study issues regarding recruitment and follow-up data collection and weekly meetings with Dr. Santa Maria. These meetings will be used to discuss experiences with the intervention participants, provide consultation, ascertain whether the research staff are following study protocols, evaluate and reinforce cultural competence, and identify any potential adverse reactions. Dr. Padhye, study statistician, will coordinate data management and analysis. He will oversee development of data entry screens and the database development, supervise data entry verification, and work with the investigators in conducting all data analyses.

Drs. Santa Maria, Padhye, Lightfoot, Nyamathi, Quadri, and Paul will meet every other week (by phone and/or in person) to monitor study progress. Any adverse reactions noted by any of the team members will be immediately reported to the principal investigator, the UTHealth IRB, Data Safety and Monitoring Board, and NIH. One focus of investigator meetings will be on developing strategies to prevent adverse reactions and to better monitor the research staff and data integrity. Accrual data will be reviewed by the UTHealth IRB. The study team will make amendments to the protocol should accrual fall below 15% of the target, or should drop-outs exceed projections by 15%.

Quality control and assurance

Role of the Safety Monitoring Committee. The SMC is responsible for oversight of the activities related to implementing the clinical trial to ensure patient safety, conformance to the clinical protocol, overall performance of the trial components, and integrity of the data being collected. The SMC will meet prior to participant enrollment and then meet quarterly to review adverse events and participant safety concerns and annually to review study progress (e.g., recruitment retention, and safety procedures). Data quality and completeness and timeliness will be provided to the SMC including total number participants screened, enrollment rates, exclusion rates and reasons, randomization numbers, completion of scheduled follow-ups, reasons for study withdrawal, referral site rates, adequacy of enrollment composition, demographic similarities/differences between intervention and control group, protocol deviations and adherence, compromises in confidentiality. All meeting materials will be considered privileged by SMC members. This confidentiality should be maintained at all times to the extent permitted by law.

The SMC will comprise 3 members with expertise in risk prevention, health communication, and/or homeless youth intervention research. These members have extensive expertise to review the scientific design and conduct of a study, to evaluate safety and risks to participants, to interpret data statistically, and to make recommendations concerning continuation, modification, suspension, or termination of a study. Dr. Sarah Narendorf, Social Work Scientist

at the University of Houston Graduate College of Social Work; Dr. Emily Arnold, Anthropologist at the University of California San Francisco Center for AIDS Prevention Studies; and Dr. Christine Markham, Behavioral Scientist at the UTHeath School of Public Health will be the monitoring committee members (see Letters of Support).

SMC meetings conducted quarterly will begin after the first week of data collection. In addition, should any adverse event occur, the monitoring committee will be informed immediately, and a special session will be scheduled to discuss strategies to deal with the event. The quarterly meeting will include a synopsis of protocol and design, discussion of the status of interventions and data collection procedures, a summary of subject contacts, discussion of any adverse events or potential adverse events, status of data entry and verification, and a summary of any descriptive and inferential statistics to date. Data quality and completeness and timeliness will be provided to the SMC including total number participants screened, enrollment rates, exclusion rates and reasons, randomization numbers, completion of scheduled follow-ups, reasons for study withdrawal, referral site rates, adequacy of enrollment composition, demographic similarities/differences between intervention and control group, protocol deviations and adherence, compromises in confidentiality. The SMC will meet in a closed session without the investigators. In this meeting, the committee will discuss the need for additional procedures to prevent adverse events or ensure data integrity. In the unlikely case that the study may need an early termination due to unexpected adverse events or inadequate conduct of the stud, the committee will make recommendations to the investigators. Recommendations from the monitoring committee meetings will be shared with the UTHealth IRB and NIH during annual reports and immediately if the monitoring committee identifies adverse events not previously reported or recommends early termination of the study.

Role of the IRB. This study will be approved by the UTHealth IRB. The UTHealth IRB will be the primary oversight IRB for the study and the study PI (Dr. Santa Maria) will be responsible for reporting to the IRB about the status of the study. Annual progress reports and renewals will be completed for the IRBs and will include a summary of the recommendations of the monitoring committee. If adverse reactions related to study procedures are noted, they will be immediately reported to UTH IRB by Dr. Santa Maria so that the IRB is aware of any risks involved with the study. The IRB will be responsible for ensuring adequate and appropriate membership composition of the SMC as specified by NINR policy.

Reporting to NINR. Dr. Santa Maria, the PI, will be responsible for submitting necessary reports to NINR. Summaries of the protocol and design, status of intervention group, data collection procedures, summary of subject contacts, discussion of any adverse reactions or any potential adverse reactions, status of data entry and verification, a summary of any descriptive statistics to date, and the recommendations of the monitoring committee will be included in each annual report to NINR. NINR will be notified within 7 days if the human subjects research or DSM plan is changed prior to or during implementation of the clinical trial for approval. In addition, should any adverse reaction occur or should the monitoring committee recommend early termination of the study, the information will be immediately reported to the NINR program officer. All personal identifiers will be removed from any documentation sent to NINR. Timely reports to NINR will be generated for:

- Unanticipated problems or unexpected serious adverse events that may be related to the study protocol
- IRB-approved revisions to the study protocol that indicate a change in risk for participants
- A summary of recommendations made by the SMC or other monitoring entity as appropriate and (if applicable) the action plan for response
- Notice of any actions taken by the IRB or regulatory bodies regarding the research and any responses to those actions

Publication Plan

Dissemination Plan

Drs. Santa Maria (PI) and Padhye at the University of Texas Health Science Center at Houston Cizik School of Nursing, Drs. Quadri and Paul at the Baylor College of Medicine, Dr. Lightfoot at the University of California San Francisco, and Dr. Nyamathi at the University of California Irvine are committed to the timely dissemination of the research findings. Dr. Santa Maria (PI) will ensure that this clinical trial will be registered on ClinicalTrials.gov (no later than 21 days after enrolling the first subject) and the updates (at least once every 12 months) and results (not later than one year after clinical trial completion date) are submitted to ClinicalTrials.gov according to the NIH Policy on the Dissemination of NIH-Funded Clinical Trial Information and in compliance with UTHealth policy requirements. Informed consent documents for the clinical trial will include a specific statement relating to posting of clinical trial information at ClinicalTrials.gov. Dr. Santa Maria will be responsible for ensuring that the timelines are met according to the NIH Policy. Dr. Santa Maria will also ensure that the informed consents at the University of Texas Health Science Center include a specific statement on the posting of clinical trial information to ClinicalTrials.gov and the protections afforded by the Certificate of Confidentiality. The University of Texas Health Science Center at Houston Committee for the Protection of Human Subjects has a policy posted on clinical trials registration and the reporting of the results are in compliance with NIH policy requirements.

During the first biannual meeting with the co-investigators, we will create a plan regarding the dissemination of the protocol and preliminary and final results of this clinical trial. Included in this list of abstracts and papers will be potential journals and conferences these results will be disseminated to, and when. We will also include in the list the potential first authors of these abstracts and papers. The data generated from this study will be presented at national or international conferences and indexed journals in a timely manner. We will submit all final peer-reviewed manuscripts from the data generated by this clinical trial to the digital archive PubMed Central.

Aggregated results in lay person terms will be shared with the participants, partnering agencies, and the larger community in addition to the scientific presentations and publications.

References

1. Rotheram-Borus MJ, Song J, Gwadz M, Lee M, Van Rossem R, Koopman C. Reductions in HIV risk among runaway youth. *Prevention Science.* 2003;4(3):173-187.
2. Beech BM, Myers L, Beech DJ, Kernick NS. Human immunodeficiency syndrome and hepatitis B and C infections among homeless adolescents. Paper presented at: Seminars in pediatric infectious diseases2003.
3. Robertson MJ, Clark RA, Charlebois ED, et al. HIV seroprevalence among homeless and marginally housed adults in San Francisco. *American journal of public health.* 2004;94(7):1207-1217.
4. Santa Maria D, Padhye N, Yang Y, et al. Drug use patterns and predictors among homeless youth: results of an ecological momentary assessment. *The American journal of drug and alcohol abuse.* 2017:1-10.
5. Santa Maria D, Padhye N, Yang Y, Gallardo K, Businelle M. Predicting Sexual Behaviors Among Homeless Young Adults: Ecological Momentary Assessment Study. *JMIR public health and surveillance.* 2018;4(2):e39.
6. Santa Maria DM, Flash C, Narendorf S, et al. Knowledge and Attitudes About Prep and Npep among a 7-City Sample of Homeless Young Adults. *Journal of Adolescent Health.* 2018;62(2):S17.
7. Hosek S, Celum C, Wilson CM, Kapogiannis B, Delany-Moretlwe S, Bekker L-G. Preventing HIV among adolescents with oral PrEP: observations and challenges in the United States and South Africa. *Journal of the International AIDS Society.* 2016;19(7Suppl 6).
8. Irvine MK, Chamberlin SA, Robbins RS, Kulkarni SG, Robertson MM, Nash D. Come as You Are: Improving Care Engagement and Viral Load Suppression Among HIV Care Coordination Clients with Lower Mental Health Functioning, Unstable Housing, and Hard Drug Use. *AIDS and Behavior.* 2016:1-8.
9. Santa Maria D, Narendorf SC, Ha Y, Bezette-Flores N. Exploring contextual factors of youth homelessness and sexual risk behaviors: a qualitative study. *Perspectives on sexual and reproductive health.* 2015;47(4):195-201.
10. Santa Maria DM, Narendorf SC, Bezette-Flores N, Ha Y. " Then You Fall Off": Youth Experiences and Responses to Transitioning to Homelessness. *Journal of Family Strengths.* 2015;15(1):5.
11. HIV PrEP Framework. AIDS.gov. 2016; https://www.aids.gov/federal-resources/policies/prep-framework/. Accessed December 30, 2016.
12. Bland SE, Crowley JS. *Blueprint for HIV Biomedical Prevention: State of the State Report.* NMAC;2016.
13. UNAIDS. Oral Pre-exposure Prophylaxis: Putting a New Choice in Context. 2015; http://www.who.int/hiv/pub/prep/who-unaids-prep-2015.pdf?ua=1. Accessed December 30, 2016.
14. Poll G. Americans Rate Healthcare Providers High Honesty and Ethics. 2017; http://www.gallup.com/poll/200057/americans-rate-healthcare-providers-high-honesty-

ethics.aspx?g_source=highest+honestly+and+ethical+standards&g_medium=search&g_campaign=tiles. Accessed August, 03, 2017, 2017.
15. Rollnick S, Miller WR, Butler CC, Aloia MS. Motivational interviewing in health care: helping patients change behavior. Taylor & Francis; 2008.
16. Miller WR, Rollnick S. *Motivational interviewing: Helping people change.* Guilford press; 2012.
17. Bassuk E, Murphy C, Coupe N, Kenney R, Beach C. America's youngest outcasts 2014: State report card on child homelessness. *Retrieved November.* 2014;24:2014.
18. Bassuk E, Murphy C, Coupe N, Kenney R, Beach C. America's Youngest Outcasts 2010. Needham, MA: The National Center on Family Homelessness; 2011.
19. Bassuk EL. Ending child homelessness in America. *American Journal of Orthopsychiatry.* 2010;80(4):496-504.
20. Kulik DM, Gaetz S, Crowe C, Ford-Jones EL. Homeless youth's overwhelming health burden: A review of the literature. *Paediatrics & child health.* 2011;16(6):e43.
21. Salomonsen-Sautel S, Van Leeuwen JM, Gilroy C, Boyle S, Malberg D, Hopfer C. Correlates of substance use among homeless youths in eight cities. *The American Journal on Addictions.* 2008;17(3):224-234.
22. Roy É, Haley N, Leclerc P, Sochanski B, Boudreau J-F, Boivin J-F. Mortality in a cohort of street youth in Montreal. *Jama.* 2004;292(5):569-574.
23. Edidin JP, Ganim Z, Hunter SJ, Karnik NS. The mental and physical health of homeless youth: a literature review. *Child Psychiatry & Human Development.* 2012;43(3):354-375.
24. Childress S, Reitzel LR, Maria DS, Kendzor DE, Moisiuc A, Businelle MS. Mental illness and substance use problems in relation to homelessness onset. *American journal of health behavior.* 2015;39(4):549-555.
25. Narendorf SC, Cross MB, Santa Maria D, Swank PR, Bordnick PS. Relations between mental health diagnoses, mental health treatment, and substance use in homeless youth. *Drug and alcohol dependence.* 2017;175:1-8.
26. Slesnick N, Meyers RJ, Meade M, Segelken DH. Bleak and hopeless no more: Engagement of reluctant substance-abusing runaway youth and their families. *Journal of Substance Abuse Treatment.* 2000;19(3):215-222.
27. Gwadz M, Rotheram-Borus MJ. Tracking high-risk adolescents longitudinally. *AIDS education and prevention.* 1992.
28. Leonard NR, Lester P, Rotheram-Borus MJ, Mattes K, Gwadz M, Ferns B. Successful recruitment and retention of participants in longitudinal behavioral research. *AIDS Education and Prevention.* 2003;15(3):269-281.
29. Begun KBBHNSBHJHS. Mindfulness Intervention with Homeless Youth. The Society for Social Work and Research 2015; New Orleans, LA.
30. Ray N. Lesbian, Gay, Bisexual and Transgender Youth: An epidemic of homelessness. New York: National Gay and Lesbian Task Force Policy Institute and the National Coalition for the Homeless. 2006.
31. Gangamma R, Slesnick N, Toviessi P, Serovich J. Comparison of HIV risks among gay, lesbian, bisexual and heterosexual homeless youth. *Journal of Youth and Adolescence.* 2008;37(4):456-464.
32. Thompson SJ, Pillai VK. Determinants of runaway episodes among adolescents using crisis shelter services. *International Journal of Social Welfare.* 2006;15(2):142-149.
33. Smid M, Bourgois P, Auerswald CL. The challenge of pregnancy among homeless youth: reclaiming a lost opportunity. *Journal of health care for the poor and underserved.* 2010;21(2 Suppl):140.
34. Roy É, Haley N, Leclerc P, Sochanski B, Boudreau J-F, Boivin J-F. Mortality in a cohort of street youth in Montreal. *JAMA: the journal of the American Medical Association.* 2004;292(5):569-574.

35. Greene JM, Ringwalt CL. Youth and familial substance use's association with suicide attempts among runaway and homeless youth. *Substance use & misuse.* 1996;31(8):1041-1058.
36. Molnar BE, Shade SB, Kral AH, Booth RE, Watters JK. Suicidal behavior and sexual/physical abuse among street youth. *Child abuse & neglect.* 1998;22(3):213-222.
37. Noell JW, Ochs LM. Relationship of sexual orientation to substance use, suicidal ideation, suicide attempts, and other factors in a population of homeless adolescents. *Journal of adolescent health.* 2001;29(1):31-36.
38. Khurana S, Sharma N, Jena S, Saha R, Ingle G. Mental health status of runaway adolescents. *The Indian Journal of Pediatrics.* 2004;71(5):405-409.
39. Votta E, Farrell S. Predictors of psychological adjustment among homeless and housed female youth. *Journal of the Canadian Academy of Child and Adolescent Psychiatry.* 2009;18(2):126.
40. Slesnick N, Prestopnik J. Dual and Multiple Diagnosis Among Substance Using Runaway Youth#. *The American journal of drug and alcohol abuse.* 2005;31(1):179-201.
41. Bender K, Ferguson K, Thompson S, Komlo C, Pollio D. Factors associated with trauma and posttraumatic stress disorder among homeless youth in three US cities: The importance of transience. *Journal of traumatic stress.* 2010;23(1):161-168.
42. Whitbeck LB, Chen X, Hoyt DR, Tyler KA, Johnson KD. Mental disorder, subsistence strategies, and victimization among gay, lesbian, and bisexual homeless and runaway adolescents. *Journal of sex research.* 2004;41(4):329-342.
43. Santa Maria DN, Sarah. Youth Count 2.0. 2014.
44. Kidd SA. Factors Precipitating Suicidality among Homeless Youth A Quantitative Follow-Up. *Youth & Society.* 2006;37(4):393-422.
45. Rew L, Taylor-Seehafer M, Thomas NY, Yockey RD. Correlates of resilience in homeless adolescents. *Journal of Nursing Scholarship.* 2001;33(1):33-40.
46. Hall KS, Moreau C, Trussell J, Barber J. Role of young women's depression and stress symptoms in their weekly use and nonuse of contraceptive methods. *Journal of Adolescent Health.* 2013;53(2):241-248.
47. Slesnick N, Kang MJ. The impact of an integrated treatment on HIV risk behavior among homeless youth: a randomized controlled trial. *Journal of Behavioral Medicine.* 2008;31(1):45.
48. Slesnick N, Kang MJ, Bonomi AE, Prestopnik JL. Six-and twelve-month outcomes among homeless youth accessing therapy and case management services through an urban drop-in center. *Health services research.* 2008;43(1p1):211-229.
49. Slesnick N, Feng X, Guo X, et al. A Test of Outreach and Drop-in Linkage Versus Shelter Linkage for Connecting Homeless Youth to Services. *Prevention Science.* 2016;17(4):450-460.
50. Wenzel SL, Rhoades H, Harris T, Winetrobe H, Rice E, Henwood B. Risk behavior and access to HIV/AIDS prevention services in a community sample of homeless persons entering permanent supportive housing. *AIDS care.* 2017;29(5):570-574.
51. Liu AY, Cohen SE, Vittinghoff E, et al. Preexposure prophylaxis for HIV infection integrated with municipal-and community-based sexual health services. *JAMA internal medicine.* 2016;176(1):75-84.
52. Nyamathi A, Liu Y, Marfisee M, et al. Effects of a nurse-managed program on hepatitis A and B vaccine completion among homeless adults. *Nursing research.* 2009;58(1):13.
53. Nyamathi A, Nahid P, Berg J, et al. Efficacy of nurse case-managed intervention for latent tuberculosis among homeless subsamples. *Nursing research.* 2008;57(1):33.
54. Nyamathi A, Branson C, Kennedy B, et al. Impact of nursing intervention on decreasing substances among homeless youth. *The American journal on addictions.* 2012;21(6):558-565.

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

55. Nyamathi A, Kennedy B, Branson C, et al. Impact of nursing intervention on improving HIV, hepatitis knowledge and mental health among homeless young adults. *Community mental health journal.* 2013;49(2):178-184.
56. Elliott K, Klein JW, Basu A, Sabbatini AK. Transitional care clinics for follow-up and primary care linkage for patients discharged from the ED. *The American journal of emergency medicine.* 2016;34(7):1230-1235.
57. Nyamathi AM, Nandy K, Greengold B, et al. Effectiveness of intervention on improvement of drug use among methadone maintained adults. *Journal of addictive diseases.* 2010;30(1):6-16.
58. Nyamathi AM, Marlow E, Branson C, Marfisee M, Nandy K. Hepatitis A/B vaccine completion among homeless adults with history of incarceration. *Journal of forensic nursing.* 2012;8(1):13-22.
59. Morgan BD, Rossi AP. Difficult-to-manage HIV/AIDS clients with psychiatric illness and substance abuse problems: a collaborative practice with psychiatric advanced practice nurses. *Journal of the Association of Nurses in AIDS Care.* 2007;18(6):77-84.
60. Ha Y, Narendorf SC, Santa Maria D, Bezette-Flores N. Barriers and facilitators to shelter utilization among homeless young adults. *Evaluation and Program Planning.* 2015;53:25-33.
61. Ramsey ML, Jolivette K, Patterson DP, Kennedy C. Using choice to increase time on-task, task-completion, and accuracy for students with emotional/behavior disorders in a residential facility. *Education and Treatment of Children.* 2010;33(1):1-21.
62. Kohler S, Hofmann A. Can motivational interviewing in emergency care reduce alcohol consumption in young people? A systematic review and meta-analysis. *Alcohol and alcoholism.* 2015;50(2):107-117.
63. Cushing CC, Jensen CD, Miller MB, Leffingwell TR. Meta-analysis of motivational interviewing for adolescent health behavior: Efficacy beyond substance use. American Psychological Association; 2014.
64. Mbuagbaw L, Ye C, Thabane L. Motivational interviewing for improving outcomes in youth living with HIV. *Cochrane Database Syst Rev.* 2012;9.
65. Wilson A, Nirantharakumar K, Truchanowicz EG, Surenthirakumaran R, MacArthur C, Coomarasamy A. Motivational interviews to improve contraceptive use in populations at high risk of unintended pregnancy: a systematic review and meta-analysis. *European Journal of Obstetrics & Gynecology and Reproductive Biology.* 2015;191:72-79.
66. Schnell O, Hanefeld M, Monnier L. Self-monitoring of blood glucose: a prerequisite for diabetes management in outcome trials. *Journal of diabetes science and technology.* 2014;8(3):609-614.
67. Santa Maria D. Homeles Youth Risk and Resilience Dataset. 2017.
68. Santa Maria DM, Narendorf SC, Barman-Adhikari A, Petering R, Flash CA. Implications for Prep Uptake in Homeless Young Adults: A Mixed-Methods Study. *Journal of Adolescent Health.* 2017;60(2):S25-S26.
69. Scott-Sheldon LA, Carey MP, Vanable PA, Senn TE, Coury-Doniger P, Urban MA. Predicting condom use among STD clinic patients using the Information-Motivation-Behavioral Skills (IMB) model. *Journal of health psychology.* 2010;15(7):1093-1102.
70. Comulada WS, Lightfoot M, Swendeman D, Grella C, Wu N. Compliance to Cell Phone-Based EMA Among Latino Youth in Outpatient Treatment. *Journal of ethnicity in substance abuse.* 2015(ahead-of-print):1-19.
71. Cornelius JB, Cato M, Lawrence JS, Boyer CB, Lightfoot M. Development and pretesting multimedia HIV-prevention text messages for mobile cell phone delivery. *Journal of the Association of Nurses in AIDS Care.* 2011;22(5):407-413.

72. Cornelius JB, Dmochowski J, Boyer C, Lawrence JS, Lightfoot M, Moore M. Text-messaging-enhanced HIV intervention for African American adolescents: a feasibility study. *Journal of the Association of Nurses in AIDS Care.* 2013;24(3):256-267.
73. Santa Maria D. Project Youth EMA. 2016.
74. Santa Maria DP, N., Gallardo, K., Johnson-Baker, K., Swain, H., Tortolero-Emery, S., Businelle, M. . Use of Ecological Momentary Assessment to Determine the Relation between Stress and Sexual Risk Behaviors among Homeless Youth. Council for the Advancement of Nursing Science 2016.
75. Sheoran B, Silva CL, Lykens JE, et al. YTH StreetConnect: Development and Usability of a Mobile App for Homeless and Unstably Housed Youth. *JMIR mHealth and uHealth.* 2016;4(3).
76. Wen C, Schneider, S., Stone, S., Spruijt-Metz, D., . Compliance With Mobile Ecological Momentary Assessment Protocols in Children and Adolescents:A Systematic Review and Meta-Analysis. *JOURNAL OF MEDICAL INTERNET RESEARCH.* 2017;19(4).
77. Ober AJ, Martino SC, Ewing B, Tucker JS. If you provide the test, they will take it: Factors associated with HIV/STI testing in a representative sample of homeless youth in Los Angeles. *AIDS education and prevention: official publication of the International Society for AIDS Education.* 2012;24(4):350.
78. Santa Maria D, Guilamo-Ramos V, Jemmott LS, Derouin A, Villarruel A. Nurses on the front lines: Improving adolescent sexual and reproductive health across health care settings. *AJN The American Journal of Nursing.* 2017;117(1):42-51.
79. Bonin E BT, Carlson C, Downing M, Hoeft J, Kalinowski A, Solomon-Bame J, Post P. Adapting Your Practice: General Recommendations for the Care of Homeless Patients. In: Health Care for the Homeless Clinicians' Network NHCftH, Council, eds. https://www.nhchc.org/resources/clinical/adapted-clinical-guidelines/2010.
80. Nyamathi AM, Dixon EL, Wiley D, Christiani A, Lowe A. Hepatitis C virus infection among homeless men referred from a community clinic. *Western Journal of Nursing Research.* 2006;28(4):475-488.
81. Schumann A, Nyamathi A, Stein JA. HIV risk reduction in a nurse case-managed TB and HIV intervention among homeless adults. *Journal of health psychology.* 2007;12(5):833-843.
82. Nyamathi A, Hudson A, Greengold B, Leake B. Characteristics of homeless youth who use cocaine and methamphetamine. *The American journal on addictions.* 2012;21(3):243-249.
83. Milburn NG, Iribarren FJ, Rice E, et al. A family intervention to reduce sexual risk behavior, substance use, and delinquency among newly homeless youth. *Journal of Adolescent Health.* 2012;50(4):358-364.
84. Santa Maria D. P, N., Jung, J., Santos, G.M., Businelle, M. . Substance Use Patterns in Homeless Youth: Results of an Ecological Momentary Assessment. Society of Behavioral Medicine; 2017.
85. Bandiera FC, Atem F, Ma P, Businelle MS, Kendzor DE. Post-quit stress mediates the relation between social support and smoking cessation among socioeconomically disadvantaged adults. *Drug and alcohol dependence.* 2016;163:71-76.
86. Businelle MS, Ma P, Kendzor DE, Frank SG, Wetter DW, Vidrine DJ. Using Intensive Longitudinal Data Collected via Mobile Phone to Detect Imminent Lapse in Smokers Undergoing a Scheduled Quit Attempt. *Journal of Medical Internet Research.* 2016;18(10):e275.
87. Kendzor DE, Shuval K, Gabriel KP, et al. Impact of a Mobile Phone Intervention to Reduce Sedentary Behavior in a Community Sample of Adults: A Quasi-Experimental Evaluation. *Journal of medical Internet research.* 2016;18(1).

88. Kendzor DE, Shuval K, Gabriel KP, et al. Impact of a mobile phone intervention to reduce sedentary behavior in a community sample of adults: A quasi-experimental evaluation. *Journal of medical Internet research.* 2016;18(1):e19.
89. Pasalar S P, Davila J, PhD, Flash CA, MD, MPH, Miertschin N, MPH, Betancourt R, MS, Quadri Y, MD, Giordano T, MD, MPH. . Improved Housing and HIV-related Outcomes Among Multiply Diagnosed Homeless Patients with HIV after Intensive Trauma-Informed-Care based Intervention. American Conference for the Treatment of HIV; 2016.
90. Narendorf SC, Santa Maria DM, Ha Y, Cooper J, Schieszler C. Counting and Surveying Homeless Youth: Recommendations from YouthCount 2.0!, a Community–Academic Partnership. *Journal of community health.* 2016;41(6):1234-1241.
91. Narendorf SC, Jennings SW, Maria DS. Parenting and homeless: profiles of young adult mothers and fathers in unstable housing situations. *Families in Society: The Journal of Contemporary Social Services.* 2016;97(3):200-211.
92. Businelle MS, Ma P, Kendzor DE, et al. Predicting quit attempts among homeless smokers seeking cessation treatment: an ecological momentary assessment study. *Nicotine & Tobacco Research.* 2014;16(10):1371-1378.
93. Mostajabian S, Santa Maria, D., Wiemann, C., Bocchini, C. If You Ask, They Will Tell: Identifying Risk for Human Trafficking Among Homeless Youth. Society of Adolescent Health and Medicine; 2017.
94. Flash CA FE, Akinbohun N, Rodriguez P, Giordano TP. PrEP Implementation in Houston, TX among high-risk heterosexuals and MSM. Infectious Diseases Society of America; 2014.
95. Nyamathi AM, Zhang S, Salem BE, et al. A randomized clinical trial of tailored interventions for health promotion and recidivism reduction among homeless parolees: outcomes and cost analysis. *Journal of experimental criminology.* 2016;12(1):49-74.
96. Nyamathi A, Reback CJ, Shoptaw S, Salem BE, Zhang S, Yadav K. Impact of tailored interventions to reduce drug use and sexual risk behaviors among homeless gay and bisexual men. *American journal of men's health.* 2017;11(2):208-220.
97. House C. *Annual Report Executive Summary.* Covenant House Texas;2014.
98. Sowell ER, Thompson PM, Tessner KD, Toga AW. Mapping continued brain growth and gray matter density reduction in dorsal frontal cortex: inverse relationships during postadolescent brain maturation. *Journal of Neuroscience.* 2001;21(22):8819-8829.
99. Giedd JN. Structural magnetic resonance imaging of the adolescent brain. *Annals of the New York Academy of Sciences.* 2004;1021(1):77-85.
100. Steinberg L. Risk taking in adolescence: New perspectives from brain and behavioral science. *Current directions in psychological science.* 2007;16(2):55-59.
101. Gaetz S. Backgrounder: Who are Street Youth. *Toronto: York University.* 2009.
102. Quistberg DA. Assessing health literacy in African American and Caucasian adults: disparities in rapid estimate of adult literacy in medicine (REALM) scores. *Fam Med.* 2004;36(8):575-581.
103. Morton MH, Dworsky A, Matjasko JL, et al. Prevalence and correlates of youth homelessness in the United States. *Journal of Adolescent Health.* 2017.
104. Tucker JS, D'Amico EJ, Ewing BA, Miles JN, Pedersen ER. A group-based motivational interviewing brief intervention to reduce substance use and sexual risk behavior among homeless young adults. *Journal of Substance Abuse Treatment.* 2017;76:20-27.
105. Nyamathi A. Comprehensive health seeking and coping paradigm. *Journal of advanced nursing.* 1989;14(4):281-290.
106. Kotchick BA, Shaffer A, Miller KS, Forehand R. Adolescent sexual risk behavior: A multi-system perspective. *Clinical psychology review.* 2001;21(4):493-519.
107. Arnold EM, Rotheram-Borus MJ. Comparisons of prevention programs for homeless youth. *Prevention Science.* 2009;10(1):76-86.

108. Aidala A, Cross JE, Stall R, Harre D, Sumartojo E. Housing status and HIV risk behaviors: Implications for prevention and policy. *AIDS and Behavior.* 2005;9(3):251-265.
109. Pasalar S DJ, Flash CA, Miertschin N, Betancourt R, Quadri Y, Giordano T,. Improved Housing and HIV-related Outcomes Among Multiply Diagnosed Homeless Patients with HIV after Intensive Trauma-Informed-Care based Intervention. American Conference for the Treatment of HIV; 2016.
110. Slesnick N, Guo X, Brakenhoff B, Bantchevska D. A comparison of three interventions for homeless youth evidencing substance use disorders: results of a randomized clinical trial. *Journal of substance abuse treatment.* 2015;54:1-13.
111. Zerger S. Substance abuse treatment: What works for homeless people. *A review of the literature. Nashville, TN: National Health Care for the Homeless Council.* 2002.
112. Carmona J, Slesnick N, Guo X, Letcher A. Reducing High Risk Behaviors among Street Living Youth: Outcomes of an Integrated Prevention Intervention. *Children and Youth Services Review.* 2014.
113. Pedersen ER, Ewing BA, D'Amico EJ, Miles JN, Haas AC, Tucker JS. Predictors of Retention in an Alcohol and Risky Sex Prevention Program for Homeless Young Adults. *Prevention Science.* 2018:1-9.
114. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American journal of preventive medicine.* 1998;14(4):245-258.
115. Slesnick N, Zhang J, Brakenhoff B. Homeless Youths' Caretakers: The Mediating Role of Childhood Abuse on Street Victimization and Housing Instability. *Social work.* 2016:sww009.
116. Johnston LD, O'Malley PM, Bachman JG, Schulenberg J, Miech R. Demographic subgroup trends among adolescents in the use of various licit and illicit drugs, 1975-2013.[Monitoring the Future Occasional Paper Series No. 81]. *Ann Arbor, MI: The University of Michigan, Institute for Social Research.* 2014.
117. Eaton DK, Kann L, Kinchen S, et al. Youth risk behavior surveillance-United States, 2011. *Morbidity and mortality weekly report. Surveillance summaries (Washington, DC: 2002).* 2012;61(4):1-162.
118. Derogatis LR, Spencer P. *Brief symptom inventory: BSI.* Pearson Upper Saddle River, NJ, USA:; 1993.
119. Urbán R, Kun B, Farkas J, et al. Bifactor structural model of symptom checklists: SCL-90-R and Brief Symptom Inventory (BSI) in a non-clinical community sample. *Psychiatry research.* 2014;216(1):146-154.
120. Mugavero MJ, Davila JA, Nevin CR, Giordano TP. From access to engagement: measuring retention in outpatient HIV clinical care. *AIDS patient care and STDs.* 2010;24(10):607-613.
121. Brafford LJ, Beck KH. Development and validation of a condom self-efficacy scale for college students. *Journal of American College Health.* 1991;39(5):219-225.
122. Napper LE, Fisher DG, Reynolds GL. Development of the perceived risk of HIV scale. *AIDS and Behavior.* 2012;16(4):1075-1083.
123. Golub SA, Gamarel KE, Rendina HJ, Surace A, Lelutiu-Weinberger CL. From efficacy to effectiveness: facilitators and barriers to PrEP acceptability and motivations for adherence among MSM and transgender women in New York City. *AIDS patient care and STDs.* 2013;27(4):248-254.
124. Wilson CJ, Deane FP, Ciarrochi J, Rickwood D. Measuring help-seeking intentions: Properties of the general help-seeking questionnaire. *Canadian Journal of Counselling.* 2005;39(1):15.

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

125. Dashora P, Erdem G, Slesnick N. Better to bend than to break: Coping strategies utilized by substance-abusing homeless youth. *Journal of health psychology.* 2011;16(1):158-168.
126. Endler N, Parker J. Coping Inventory for Stressful Situations (CISS): Manual (Revised Edition). Toronto: Multi-Health Systems. *Inc. Furedi, F.(2009, October 連 結 [Online] 1999.* 1999.
127. Slesnick N, Prestopnik JL, Meyers RJ, Glassman M. Treatment outcome for street-living, homeless youth. *Addictive behaviors.* 2007;32(6):1237-1251.
128. Kann L, Kinchen S, Shanklin SL, et al. Youth risk behavior surveillance—United States, 2013. *MMWR Surveill Summ.* 2014;63(Suppl 4):1-168.
129. Knight K, Simpson DD, Morey JT. An evaluation of the TCU Drug Screen. *Washington, DC: National Institute of Justice, Office of Justice Programs, US Department of Justice.* 2002.
130. Green P, MacLeod CJ. SIMR: an R package for power analysis of generalized linear mixed models by simulation. *Methods in Ecology and Evolution.* 2016;7(4):493-498.
131. Fox-Wasylyshyn SM, El-Masri MM. Handling missing data in self-report measures. *Research in Nursing & Health.* 2005;28(6):488-495.
132. DeVellis RF. *Scale development: Theory and applications.* Vol 26: Sage; 2011.
133. Hulley SB, Cummings SR, Browner WS, Grady DG, Newman TB. *Designing clinical research.* LWW; 2013.
134. Tofighi D, Thoemmes F. Single-level and multilevel mediation analysis. *The Journal of Early Adolescence.* 2014;34(1):93-119.
135. Muthén L, Muthén B. Mplus. *The comprehensive modelling program for applied researchers: user's guide.* 2015;5.

Appendix A: REALM-SF

Transience Resilience Cocaine Pregnancy Satisfied Temporary Identity Hepatitis Victimization

---

Instructions for Administering the REALM-SF

1. Show the youth the above words on the tablet (or a card).
2. Say: "I want to see what format will work best for you to do the survey. I want to hear you read as many words as you can from this list. Begin with the first word and read aloud. When you come to a word you cannot read, do the best you can or say, 'blank' and go on to the next word."
3. If the youth takes more than 5 seconds on a word, say "blank" and point to the next word, if necessary, to move the youth along. If the youth begins to miss every word, have him or her pronounce only known words.
4. Enter REALM SCORE in box below

(Score needed for youth to take survey alone=4; Interviewer: if youth scores 0,1,2,or 3 please administer survey with youth)

IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

Appendix B: NCM4HIV Study Timeline

	Year 1 2019				Year 2 2019-2020				Year 3 2020-2021				Year 4 2021-2022				Year 5 2022-2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Finalize protocol, IRB approval	x	x																		
Hire and train study staff	x	x	x																	
Recruit participants			x	x	x	x	x	x	x	x	x	x								
Conduct participant follow-ups				x	x	x	x	x	x	x	x	x	x	x	x	x				
Complete wait list control group						x	x	x	x	x	x	x	x	x	x	x	x	x		
Prepare and analyze data															x	x	x	x		
Prepare presentations, manuscripts																	x	x		

1: Dec-Feb
2: Mar-May
3: Jun-Aug
4: Sep-Nov

IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

Appendix C: Letters of Support

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

University of California
San Francisco
UCSF
AIDS Research Institute
Center for AIDS Prevention Studies

Emily A. Arnold, Ph.D.
Associate Professor
UCSF Mailcode 0886
550 16th Street, 3rd Floor
San Francisco, CA 94158
tel: 415·476-6226
fax: 415·476-5384
Emily.Arnold@ucsf.edu

April 2, 2018

Dear Dr. Santa Maria:

I am delighted to support your R01 application as a member of the Data Safety Monitoring Board (DSMB) for your proposed research study, "Come As You Are - Assessing the Efficacy of a Nurse Case Management HIV Prevention and Care Intervention among Homeless Youth," to the National Institutes of Health. My expertise as an anthropologist and researcher focused on HIV prevention among at-risk and vulnerable youth populations will provide great utility to you and your team, and I am happy to serve as a member of your DSMB. As a participant in our Visiting Professors program for the past two years, you know that I have led several intervention trials, and have extensive experience in assessing and managing large studies for participant safety. My expertise is well suited for acting as a member of your DSMB for research conducted with homeless youth.

I understand that this study aims to assess the efficacy of an MI-enhanced Nurse Case Management intervention on the uptake and adherence to HIV prevention strategies among homeless youth, using a randomized controlled trial design. Your approach of delivering nurse case management at point-of-care shelters and drop-in centers is innovative and may reduce many of the barriers to accessing care that homeless youth experience, addressing an important public health need impacting this underserved population. I look forward to our collaboration.

With best regards,

Emily A. Arnold, Ph.D.
Associate Professor of Medicine
Center for AIDS Prevention Studies
University of California San Francisco

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

UTHealth
The University of Texas
Health Science Center at Houston

School of Public Health

Health Promotion and Behavioral Science Department

Dr. Diane Santa Maria DrPH, RN
Assistant Professor
University of Texas Health Science Center
School of Nursing

March 30, 2018

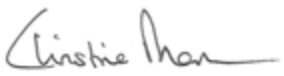
Dear Dr. Santa Maria:

I gladly accept your request to serve as a member of the Data Safety Monitoring Board (DSMB) for your R01 resubmission titled, "Come As You Are - Assessing the Efficacy of a Nurse Case Management HIV Prevention and Care Intervention among Homeless Youth." My experience as a senior researcher in Health Promotion and Behavioral Sciences among at-risk youth populations focused on HIV/STI and pregnancy prevention will provide your study with the data safety and monitoring needed to protect the participants.

I understand the proposed study aims are to conduct a randomized controlled trial to examine the efficacy of a nurse case management HIV prevention intervention on the uptake and adherence of HIV prevention strategies among youth experiencing homelessness. Your approach of delivering motivational interviewing enhanced nurse case management and your use of a smartphone delivered behavioral feedback technology increases the innovation in this study. The results of this study will move the science of HIV prevention among youth experiencing homelessness forward.

I look forward to working with you on this important study.

Sincerely,



Christine Markham, Ph.D.
Associate Professor & Associate Department Chair
Associate Director, Center for Health Promotion and Prevention Research

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

UNIVERSITY of HOUSTON
YOU ARE THE PRIDE
GRADUATE COLLEGE of SOCIAL WORK

Sarah C. Narendorf, PhD
Assistant Professor

Dr. Diane Santa Maria, DrPH, MSN, RN, PHNA-BC
Assistant Professor
University of Texas Health Science Center
Cizik School of Nursing

Dear Dr. Santa Maria, April 1, 2018

I am writing to accept your invitation to serve as a member of the Data Safety Monitoring Board (DSMB) for the resubmission of your proposed research entitled, "Come As You Are - Assessing the Efficacy of a Nurse Case Management HIV Prevention and Care Intervention among Homeless Youth". My experience as a licensed clinical social worker and researcher focused on mental health, substance use, and risk behavior prevention among youth experiencing homelessness will provide your study with the data safety monitoring needed to ensure the safety of all participants.

As a clinician and researcher, I understand the proposed study aims to examine the efficacy of a nurse case management HIV prevention intervention on sexual health outcomes among youth experiencing homelessness. Your approach of combining nurse case management, motivational interviewing strategies, and smartphone delivered behavioral feedback makes for an innovative study that will add to the science regarding HIV prevention among this population of at-risk young people.

I look forward to collaborating on this much needed study.

Sincerely,

Sarah C. Narendorf

Sarah C. Narendorf, Ph.D.
Assistant Professor
University of Houston
Graduate College of Social Work
3511 Cullen Boulevard
Houston, TX 77204-4013

Covenant House Texas
Opening Doors for Homeless Youth

Board Members

Kurt Nondorf
Chairman

Alan C. Arnold, Jr.
Paolo Berard
Peter R. Billipp
Steve R. Biegel
Todd Binet
Mark Davis
Fallon Egan
Judeene Edison
Brett Hamilton
Albert C. Hergenroeder, M.D.
James Michael Holland
Thomas P. Kurz
William W. McGee
Patricia Nowak Turner
Jeff Samples
John Sarvadi
Randall L. Walker
Beatty G. Watts

Leslie Bourne
Executive Director

April 2, 2018

Diane Santa Maria, DrPH, RN, PHNA-BC
University of Texas Health Science Center
Cizik School of Nursing
Houston, TX

Dear Dr. Santa Maria,

As Executive Director of the Covenant House Texas, I am pleased to partner with you and your team of experts on the resubmission of your proposed HIV prevention research study, "Come As You Are - Assessing the Efficacy of a Nurse Case Management HIV Prevention and Care Intervention among Homeless Youth". The intervention you aim to test addresses an extreme health need among vulnerable youth experiencing homelessness. Preventing HIV and improving access to HIV care is of the upmost importance to the health and well-being of this marginalized and forgotten population of young people.

Here at the Covenant House Texas, we serve about 460 individual homeless youth ages 18-24 annually and strive to provide the best healthcare to them. This proposed project aligns with our mission to continuously improve the healthcare we provide youth. Therefore, we will partner with you and support the success of this project. We agree to serve on the Community Advisory Group, assist with recruitment and retention efforts, and provide you with the space needed to meet with participants throughout the duration of the study. We understand that, if funded, $2500 will be provided annually in YRs 2-4 and $1250 in YR 1 and 5 to the Covenant House Texas to offset the costs associated the efforts listed above.

Sincerely,

Leslie Bourne

Leslie Boerne
Executive Director

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

NATIONAL HEALTH CARE for the HOMELESS COUNCIL

Diane Santa Maria, Dr. PH, RN
University of Texas Health Science Center
Cizik School of Nursing

Dr. Santa Maria, April 11, 2018

As the CEO at the National Health Care for the Homeless Council, I am excited to provide our support for your highly significant research study, "Come As You Are - Assessing the Efficacy of a Nurse Case Management HIV Prevention and Care Intervention among Homeless Youth". The findings from your trial of a nurse-led HIV prevention intervention will help us integrate evidence-based intervention strategies with young people who are experiencing homelessness and unstable housing who continue to shoulder the burden of HIV and yet do not receive the research and programming attention they so greatly need. We also keenly understand the heterogeneity of our population of young people experiencing homelessness and strongly support the use of personalized, intense interventions that utilize mobile technology to broaden reach and relevance to young people. The model you propose, six sessions with a nurse embedded in the local Health Care for the Homeless Program (HCHP) is a scalable way to reach our young people and something that could be disseminated across HCHPs nationally if found to be efficacious.

The National Health Care for the Homeless Council is a network of more than 10,000 doctors, nurses, social workers, patients, and advocates who share the mission to eliminate homelessness. We advocate for comprehensive health care and secure housing for all and produce leading research in the field and provide the highest level of training and resources related to health care for persons experiencing homelessness. We understand the important and trusted role of nurses in health care for people experiencing homelessness. Across the nation, we support roughly 300 programs who provide care across 3,300 clinics that serve people without homes. We will support you by providing free technical assistance and resources. Finally, we will provide assistance in the dissemination of your findings at our National Annual Conference where over 900 health care providers across the country come together to learn about evidence-based care. If efficacious, we will explore ways to increase the reach of the program to other HCHPs.

Sincerely,

G. Roberts Watts
CEO
National Health Care for the Homeless Council

National Health Care for the Homeless Council | P.O. Box 60427 | Nashville, TN 37206-0427 | (615) 226-2292 | www.nhchc.org

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

reVision
HOUSTON TX

Diane Santa Maria, DrPH, RN
University of Texas Health Science Center
Cizik School of Nursing

Dr. Santa Maria, April 15, 2018

I am most pleased to provide you with a letter of support demonstrating the commitment of the Homeless Youth Network (HYN) to your study, "Come As You Are - Assessing the Efficacy of a Nurse Case Management HIV Prevention and Care Intervention among Homeless Youth" to improve HIV prevention and care outcomes of youth and young adults experiencing homelessness and unstable housing in the greater Houston, TX.

Our long standing relationship working together to increase our understanding of the social context of health disparities among youth experiencing homelessness aligns with the goals and objectives of this project. We will support you in meeting these goals. Specifically, we will connect you with homeless youth service providers and welcome you to present the project to HYN members at the Community Forums. Additionally, you can post fliers about the study on the HYN website page with your contact information so that homeless youth health and service providers can contact you about the study. We look forward to serving on the Community Advisory Group for this study.

As the Executive Director of the Homeless Youth Network, I am pleased to support this most important and innovative personalized HIV prevention intervention that leverages the high use and preference for mobile technology among youth. I am particularly pleased to facilitate collaboration with the many homeless health and social service providers that are a part of the Homeless Youth Network including Covenant House Texas, The Salvation Army, and Start of Hope shelters. The mission of the Homeless Youth Network is to ensure, enhance, and expand a continuum of age appropriate programs of homelessness prevention, housing and support services that encourage health promotion and assist homeless, runaway, and street-involved youth and young adults to leave the streets and to achieve independent living.

I am excited about the potential for high impact on the HIV prevention and care outcomes of homeless youth in our community and across the nation. I would be happy to discuss any issues or concerns you may have during the study. I would expect you will have great success but will be interested in following up with you as you work this diverse population of homeless youth. As needed, we can meet face-to-face, set up telephone and/or video conferences, or communicate via emails anytime. I am enthusiastic about this opportunity to determine best practices in among youth experiencing homelessness. We look forward to continuing our collaborative work to help youth struggling with homelessness improve their life and health outcomes.

Best wishes with your important and interesting project.

Charles Rowland
President Homeless Youth Network
CEO at Houston: reVision
Office: 281-656-6615 | Email: charles@houstonrevision.org

Houston: reVision | 6856 Bellaire Blvd. Houston TX 77074 | p. 281.656.6615 www.houstonrevision.org

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

DOING THE MOST GOOD

General André Cox, *International Leader*
Commissioner David Jeffrey, *National Commander*
Commissioner Donald C. Bell, *Territorial Commander*
Lt. Colonel Ronnie L. Raymer, *Divisional Commander*
Major Kent Davis, *Area Commander*
Major Melody Davis, *Associate Area Commander*

March 29, 2018

Diane Santa Maria, DrPH, RN
University of Texas Health Science Center
Cizik School of Nursing

Dr. Santa Maria,

As the Director of Social Services and the Youth Services Program Manager at the Salvation Army Houston, we are excited to partner with you and your committed team on your proposed innovative and timely research study, "Come As You Are - Assessing the Efficacy of a Nurse Case Management HIV Prevention and Care Intervention among Homeless Youth". This nurse-led intervention will help us continue our commitment to supporting the health and wellbeing of young people who are experiencing homelessness and unstable housing. Preventing HIV and its consequences among this vulnerable population are of critical importance to establishing behavioral patterns that promote lifelong health and well-being.

Here at the Salvation Army Houston, we work with over 600 individual homeless young people ages 18-25 a year and are committed to continuously improving the care and services we provide to them. We manage the largest drop-in center, the Young Adult Resource Center, serving young people experiencing homelessness. With our extensive history working together to meet the healthcare needs of young people, we are eager to continue to work with you on this study. We look forward to partnering with you to support the success of this project in the following ways: We will serve as members of the Community Advisory Group, work with your research assistants to facilitate recruitment and retention of eligible young people, and provide you with the space needed in the drop-in center and health clinic to meet with participants as needed throughout the duration of the study. We understand that you will provide $2500 annually in YRs 2-4 and $1250 in YR 1 and 5 to the Salvation Army Young Adult Resource Center in Houston to cover the expenses associated with participant recruitment and retention and the provided study implementation space.

Sincerely,

Gerald Eckert, MSW
Director Social Services
Greater Houston Area Command

The Salvation Army Greater Houston Area Command
1500 Austin Street • Houston, TX 77002 • 713-752-0677/*phone* • 713-752-0688/*fax*
1-800-SAL-ARMY (725-2769)/*donation line* • SalvationArmyHouston.org
Serving Harris, Montgomery and Fort Bend Counties

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

April 18, 2018

Diane M SantaMaria, DrPH
Assistant Professor
Dorothy T. Nicholson Distinguished Professor
PARTNERS Research Scholar
University of Texas Health Science Center at
Houston School of Nursing
Center for Nursing Research, Room 591
Houston, TX 77030

Dear Dr. Santa Maria,

As per our conversation on April 18, 2018, I am submitting a proposal to provide motivational interviewing (MI) services for an NIH funded grant for Nurse Case Management for HIV prevention among homeless youth. This proposal is to train 3 nurses in motivational interviewing as well as assess fidelity and provide coaching.

Provide 2 days of intensive MI training with extensive real plays, videos, didactic and other exercises @$2000/day	$ 4,000.00
Using the MITI 4.2, code 25% of sessions to assess fidelity and provide coaching, targeting those areas needing improvement – 112 clients x 6 sessions each = 672 sessions x 25% coded with coaching, if needed = 168 sessions @ $150/session	$ 25,200.00
Data entry 6 hours @ $ 30.00/hour	$ 180.00
Data analysis 2 days @ $1000/day	$ 2,000.00
TOTAL	**$ 31,380.00**

Please let me know if you have questions or would like me to provide you with additional information.

Sincerely,

President
Cathy E. Crouch, PLLC
1741 Viking Drive
Houston, TX 77018
713.367.1740 (office)

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

LEGACY COMMUNITY HEALTH
3435 California St.
Houston, TX 77007
T (832) 548 5100
F (832) 548 5093
LegacyCommunityHealth.org

April 20, 2018

Diane Santa Maria, DrPH, RN
University of Texas Health Science Center
Cizik School of Nursing

Dear Dr. Santa Maria,
I am pleased to serve as a consultant to your study, "Come As You Are - Assessing the Efficacy of a Nurse Case Management HIV Prevention and Care Intervention among Homeless Youth". Your intervention will advance the science surrounding evidence-based programs to improve HIV prevention and care outcomes among youth and young adults experiencing homelessness and unstable housing in the greater Houston, TX area. Our sustained collaborative work around HIV pre-exposure prophylaxis (PrEP) and non-occupational post-exposure prophylaxis (nPEP) access, awareness, uptake, and adherence has paved a strong pathway to successful implementation of this important study.

As an Assistant Professor in the Division of Infectious Disease at Baylor College of Medicine, I established an HIV Prevention Program at Harris Health System's Thomas Street Health Center, which provides safety net care for poor and uninsured people in Harris County, TX. This program was one of the first comprehensive HIV prevention programs in the country established in a real-world setting that facilitated access to biomedical HIV prevention for marginalized communities that included both heterosexuals and men who have sex with men. My research has examined perspectives on HIV pre-exposure prophylaxis (PrEP), changes in sexual risk behavior in the setting of access to biomedical prevention and correlates of PrEP uptake.

Now, as Associate Chief Medical Officer at Legacy Community Health, the largest federally qualified health center in Texas, I understand the impact that homelessness and housing instability can have on perceived HIV risk, awareness of biomedical advances, and the experiences that contribute to risk behaviors and risky environmental factors among youth. While HIV prevention and care pathways are complex and burdened by the social and contextual factors of homelessness, your team, including myself, have comprehensive expertise to assure success. I contribute 6 years as an Infectious Disease physician caring for people with HIV or at high-risk for HIV. I have worked on several initiatives to improve the HIV care cascade for HIV positive people. I worked closely with Dr. Yasmeen Quadri, a co-investigator on this grant, on a HRSA funded Special Program of National Significance (SPNS) to facilitate access to HIV care for homeless individuals. I also have worked with Dr. Mary Paul as a clinician at Thomas Street Health Center and in developing and facilitating research proposals for adolescent youth. I have also worked with you on the "Knowledge and Attitudes about PrEP and nPEP among a 7-City Sample of Homeless Young Adults," which has been submitted for publication.

Connecting our communities to health every day, in every way.

United Way

LEGACY COMMUNITY HEALTH
1415 California St.
Houston, TX 77006
T (832) 548 5100
F (832) 548 5092
LegacyCommunityHealth.org

As a consultant on this project, I will assist you in the development, delivery, and evaluation of the nurse training regarding the continuum of HIV prevention including PrEP, nPEP, and patient assistance programs. I will participate in quarterly team calls. I will also connect you with healthcare providers and disseminate information about the study to facilitate recruitment among homeless youth seeking services.

I am excited about the potential for high impact on the HIV prevention and care outcomes of homeless youth both here locally and across the nation. While the majority of my role will concentrate in year 1 of the grant, please know that I would be happy to discuss any issues or concerns that you or your team may have during the study. I look forward to our continued collaborations and am excited about this opportunity to advance the science of HIV prevention and care among youth experiencing homelessness.

Sincerely,

Charlene A. Flash, MD, MPH
Associate Chief Medical Officer
Legacy Community Health
and
Assistant Professor of Medicine
Section of Infectious Diseases
Baylor College of Medicine

Connecting our communities to health
every day, in every way.

United Way

UTHealth The University of Texas Health Science Center at Houston
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

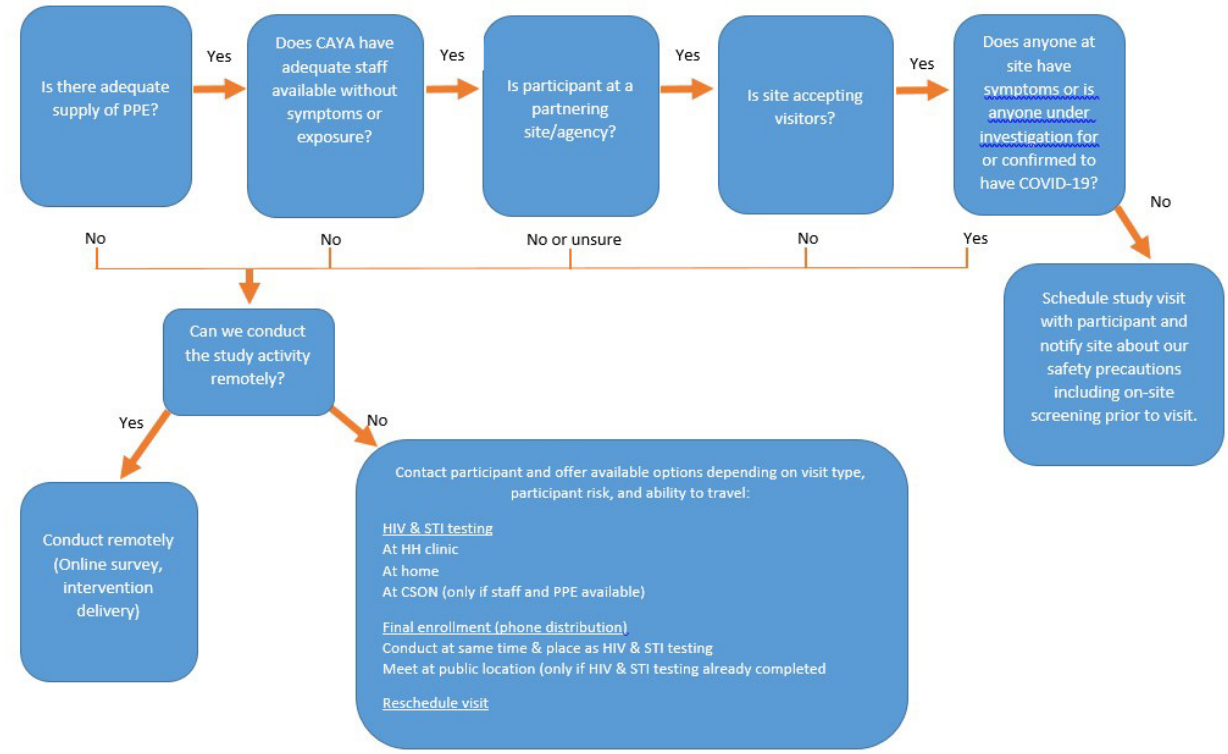
Appendix D: COVID-19 Risk mitigation plan

CAYA staged risk mitigation plan

IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

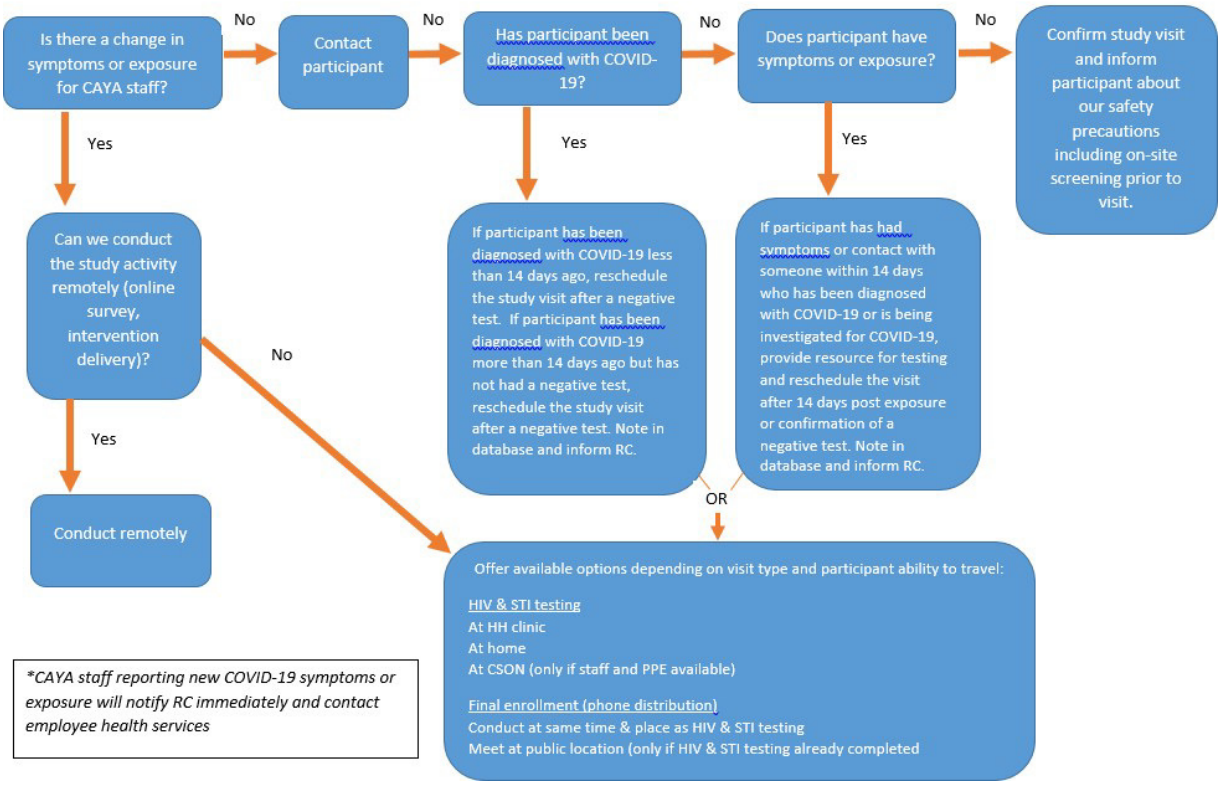
Risk mitigation flow to determine in-person study visits during Clinical trial phase 1, 2 and/or Harris County level 2

Day of scheduling visit for a participant due for study activity



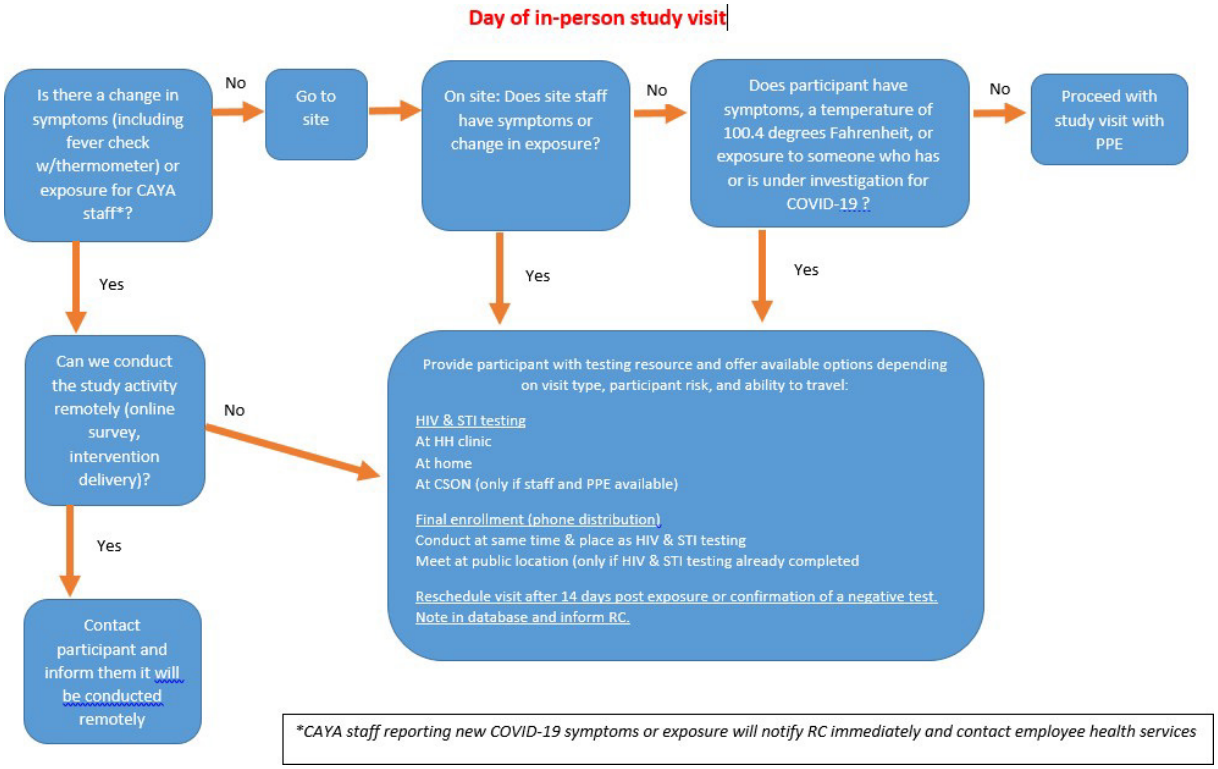
IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021

Day before scheduled in-person visit



**CAYA staff reporting new COVID-19 symptoms or exposure will notify RC immediately and contact employee health services*

IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021



IRB NUMBER: HSC-SN-18-0993
IRB APPROVAL DATE: 03/09/2021