

Text Messaging Intervention to Improve Antiretroviral Adherence among HIV-Positive Youth (TXTXT)

E2i Implementation Guide

An evidence-informed intervention, adapted for the Health Resources and Services Administration's Ryan White HIV/AIDS Program, that engages Black men who have sex with men with HIV into medical care through early orientation to the clinic, relationship building, and enhanced personal contact.

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Authors

Intervention developers (Ann & Robert H. Lurie Children's Hospital)

Lisa M. Kuhns, PhD

Robert Garofalo, MD, MPH

E2i Coordinating Center for Technical Assistance (The Fenway Institute and AIDS United)

Hilary Goldhammer, SM

Sean Cahill, PhD

Richard Cancio, MPH

Linda Marc, ScD, MPH

Mabel Sheau Fong Low, MPH

Massah Massaquoi, MPH

Alicia Downes, LMSW

Reagin Wiklund

Neeki Parsa

Hannah Bryant, MPH

Joseph D. Stango

Bryan Thompson,

Tess McKenney

Alex Keuroghlian, MD, MPH

E2i Evaluation Center (Center for AIDS Prevention, University of California San Francisco)

Kimberly Koester, PhD

Starley Shade, PhD

Mary Guze, MPH

Beth Bourdeau, PhD

Andres Maiorana, MA, MPH

Carol Dawson-Rose, RN, PhD, FAAN

Greg Rebchook, PhD

Janet Myers, PhD, MPH

Health Resources and Services Administration, HIV/AIDS Bureau

Demetrios Psihopaidas, PhD, MA

Nicole Chavis, MPH

Stacy Cohen, MPH

Antigone Dempsey, MEd



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Jeffrey M. Birnbaum, Ramesh Smith,
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EXECUTIVE SUMMARY

Text Messaging Intervention to Improve Antiretroviral Adherence among HIV-Positive Youth (TXTXT) is an evidence-informed intervention developed by HIV experts in collaboration with community members to improve health outcomes among young people with HIV, and especially young Black gay, bisexual, same-gender loving, and other men who have sex with men (MSM). TXTXT supports clients through daily, automated, and personalized interactive text messages that remind and encourage them to take their HIV medication as prescribed. TXTXT clients also receive medication adherence education and counseling, as well as referrals to supportive services when needed.

This Implementation Guide was developed for *Using Evidence-Informed Interventions to Improve Health Outcomes among People Living with HIV (E2i)*, which tested TXTXT within Health Resources and Services Administration's (HRSA) Ryan White HIV/AIDS Program (RWHAP) settings and evaluated its impact. Additional easy-to-use implementation tools, tips, and resources to support replication of TXTXT in the RWHAP and other HIV service organizations can be found in the [*TXTXT E2i Toolkit*](#).



i INTRODUCTION TO THE IMPLEMENTATION GUIDE



INTRODUCTION TO THE IMPLEMENTATION GUIDE

What is TXTXT?

TXTXT is designed to support young Black gay, bisexual, same-gender loving, and other men who have sex with men (MSM) in taking their HIV antiretroviral therapy (ART) as prescribed. At scheduled times each day, TXTXT clients receive automated, interactive text messages with a personalized and encouraging reminder about their HIV medication. TXTXT clients also receive education and counseling on medication adherence from a trained staff member at an HIV service organization, as well as biopsychosocial assessments followed by referrals to supportive services. TXTXT can be integrated into the daily routine of an HIV clinic or community-based organization.

Purpose of the Implementation Guide

The purpose of this Implementation Guide is to provide essential information and tools necessary for understanding, planning, and delivering TXTXT in the RWHAP and other HIV service organizations. This Guide is part of the [*TXTXT E2i Toolkit*](#), a comprehensive collection of helpful resources for implementing TXTXT.

Implementation Guide Background

This Guide was developed under the RWHAP Part F Special Projects of National Significance (SPNS) Program entitled *Using Evidence-Informed Interventions to Improve Health Outcomes among People Living with HIV (E2i)*, a four-year initiative (2017-2021) funded by the Health Resources and Services Administration's HIV/AIDS Bureau (HRSA HAB) of the U.S. Department of Health and Human Services. E2i was designed to improve HIV health outcomes for people with HIV who experience persistent gaps along the HIV care continuum, such as engagement in care, retention in care, adherence to ART, and viral suppression. Black MSM with HIV are among the priority populations most in need of interventions that promote high quality and culturally-tailored services.

The E2i initiative chose to pilot the implementation of TXTXT because of its demonstrated efficacy in improving health outcomes for Black MSM with HIV.¹ Through a competitive request for proposals, two HIV service organizations in the RWHAP were selected to implement TXTXT between 2018 and 2020. These sites reported implementation and client outcome data to a team of evaluators who then analyzed these data. The stories, experiences, and evaluation outcomes of these E2i sites are integrated and highlighted throughout this Guide.

¹Garofalo R, Kuhns LM, Hottom A, Johnson A, Muldoon A, Rice D. A randomized controlled trial of personalized text message reminders to promote medication adherence among HIV-Positive adolescents and young adults. *AIDS Behav.* 2016;20(5):1049-1059.

The E2i Implementation Sites

FIGURE 1. Location of the two sites that implemented TXTXT through the E2i initiative.



UNIFIED-HIV Health and Beyond (Detroit, Michigan)

- AIDS service organization/Community-based organization
- Recipient of RWHAP Part A funding
- 1,200 clients with HIV a year
- 25 employees provide HIV services
- Most common services accessed by clients with HIV: emergency financial (79%), health education (77%), non-medical case management (77%)

SUNY Downstate Medical Center, HEAT Program (Brooklyn, New York)

- University-based clinic providing HIV care
- RWHAP Part D recipient
- >125 clients with HIV
- 10 employees provide HIV services
- Most common non-medical services accessed by clients with HIV: health education (100%), psychosocial support (100%), non-medical case management (94%)

Implementation Science Evaluation

E2i used an implementation science approach to evaluate TXTXT. The evaluation aimed to answer the following questions:

- » “What does it take to implement TXTXT in an HIV service organization?”
- » “To what extent is successful implementation related to better HIV outcomes for the clients?”

E2i evaluators collected TXTXT client data from the two sites throughout the initiative to measure engagement in care, prescription of ART, retention in care, and viral suppression. They also collected and reviewed site staff surveys, client encounter forms, site visit reports, and meeting notes in order to learn more about the key factors for: successful implementation, challenges encountered by the interventionists, and adaptations made to meet the needs of local settings and priority populations. The major findings from the evaluation are reported throughout this Guide. For additional detail on the theoretical approach and methods, see [Appendix A](#). See also the [TXTXT E2i Toolkit](#) for additional evaluation findings reported in manuscripts.



TXTXT OVERVIEW



TXTXT OVERVIEW

Goal

The primary goal of TXTXT is:

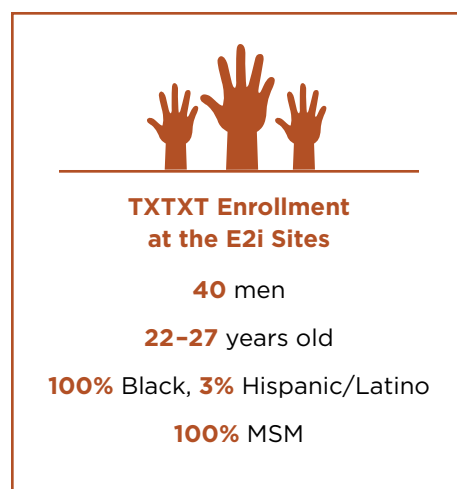
- » To promote adherence to ART and improve viral suppression among young Black MSM with HIV

Description

TXTXT clients receive daily, personalized, automated, two-way (bi-directional) short message service (SMS) text messages that remind and encourage them to take their HIV medication as prescribed. TXTXT clients also receive education and counseling on medication adherence, and biopsychosocial assessments followed by referrals to supportive services, as needed. TXTXT can be integrated into the daily routine of an HIV clinic or community-based organization.

Priority Population

- » Black MSM with HIV who:
 - Are newly diagnosed with HIV or are struggling to take their ART as prescribed,
 - Are taking ART (for at least one month) and are engaged in HIV care, and
 - Use text messaging on a cell phone.
- » TXTXT was originally designed for youth ages 16 to 29 years old who were primarily young Black MSM.¹⁻³ The E2i sites implemented TXTXT with young Black MSM. TXTXT, however, may be adapted for any population with HIV.



²Dowshen N, Kuhns LM, Gray C, Lee S, Garofalo R. Feasibility of interactive text message response (ITR) as a novel, real-time measure of adherence to antiretroviral therapy for HIV+ youth. *AIDS Behav.* 2013;17(6):2237-2243.

³Dowshen N, Kuhns LM, Johnson A, Holoyda BJ, Garofalo R. Improving adherence to antiretroviral therapy for youth living with HIV/AIDS: A pilot study using personalized, interactive, daily text message reminders. *J Med Internet Res.* 2012;14(2):e51.

Rationale

Among people with HIV who take ART, an estimated 40% miss at least one dose a month. One of the most frequently cited reasons for non-adherence to medications is forgetting.⁴ The low cost, convenience, and pervasiveness of text messaging makes it well-suited to helping people with HIV remember to take their medications.

Intervention Background

In research studies, TXTXT demonstrated feasibility and effectiveness in promoting adherence to ART among young Black MSM and other youth with HIV. Participants also reported high levels of satisfaction with the intervention.^{1,5,6} TXTXT is informed by Social Cognitive Theory, which asserts that a person’s health behaviors are influenced by self-regulation, self-reflection, and self-efficacy. Environmental conditions can enhance a person’s self-regulation.⁵ In TXTXT, self-efficacy and motivation for treatment adherence are enhanced and reinforced by personalized text messages that are timed to a client’s dosing schedule.

Duration

TXTXT research found that receiving six months of messages was enough time for clients to develop long-lasting adherence to their medication.¹

The E2i sites chose to extend TXTXT beyond six months for clients that had not yet met their adherence goals, and for clients who met their goals but wished to continue the intervention. There were additional texting platform licensing costs associated with extending the intervention beyond six months.

Setting

- » TXTXT can be conducted by any organization that serves people with HIV.

The E2i sites that implemented TXTXT were a community-based organization and an HIV clinic in a university-based system.

⁴Centers for Disease Control and Prevention. Behavioral and Clinical Characteristics of Persons with Diagnosed HIV Infection—Medical Monitoring Project, United States, 2015 Cycle (June 2015–May 2016). HIV Surveillance Special Report 2015. <https://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published May 2018.

⁵Bandura A. The anatomy of stages of change. *Am J Health Promot.* 1997;12:8-10.

⁶Psihopaidas D, Cohen SM, West T, et al. Implementation science and the Health Resources and Services Administration’s Ryan White HIV/AIDS Program’s work towards ending the HIV epidemic in the United States. *PLoS Med.* 2020;17(11):e1003128.

Staffing

Staffing for TXTXT depends on the unique structure of each organization.

Core staff

At minimum, TXTXT staffing requires:

- » **TXTXT specialist(s):** Peer counselors, case managers, community outreach specialists, patient navigators, or other staff can integrate TXTXT into their daily work routines. Although organizations may choose to hire a new staff member to serve as a TXTXT specialist, most can integrate TXTXT into an existing role. TXTXT specialists recruit, screen, and enroll clients into TXTXT; provide adherence education and counseling; personalize and test the texting platform; perform biopsychosocial assessments of TXTXT clients and help with referrals to supportive services based on the assessments; and check in regularly with clients.
- » **Program supervisor/manager:** Provides administrative supervision to the TXTXT specialist(s) and oversees program integration and strategic planning.
- » **Information technology (IT) specialist:** Advises on the selection of a vendor for the texting platform; tailors and troubleshoots the texting platform; and serves as a liaison with the vendor's technical support team.

TXTXT specialists at the E2i sites were peer leaders who also filled outreach and prevention roles. At one site, the specialist received close support and supervision from a physician who led the program. The other site functioned primarily with a community outreach specialist supported by a program manager.

Additional recommended staff

TXTXT specialists can coordinate with other organizational staff members to support TXTXT clients. These staff members may include:

- » **Case managers:** Refer clients to TXTXT and provide linkage to supportive services.
- » **Medical providers:** Refer clients to TXTXT.

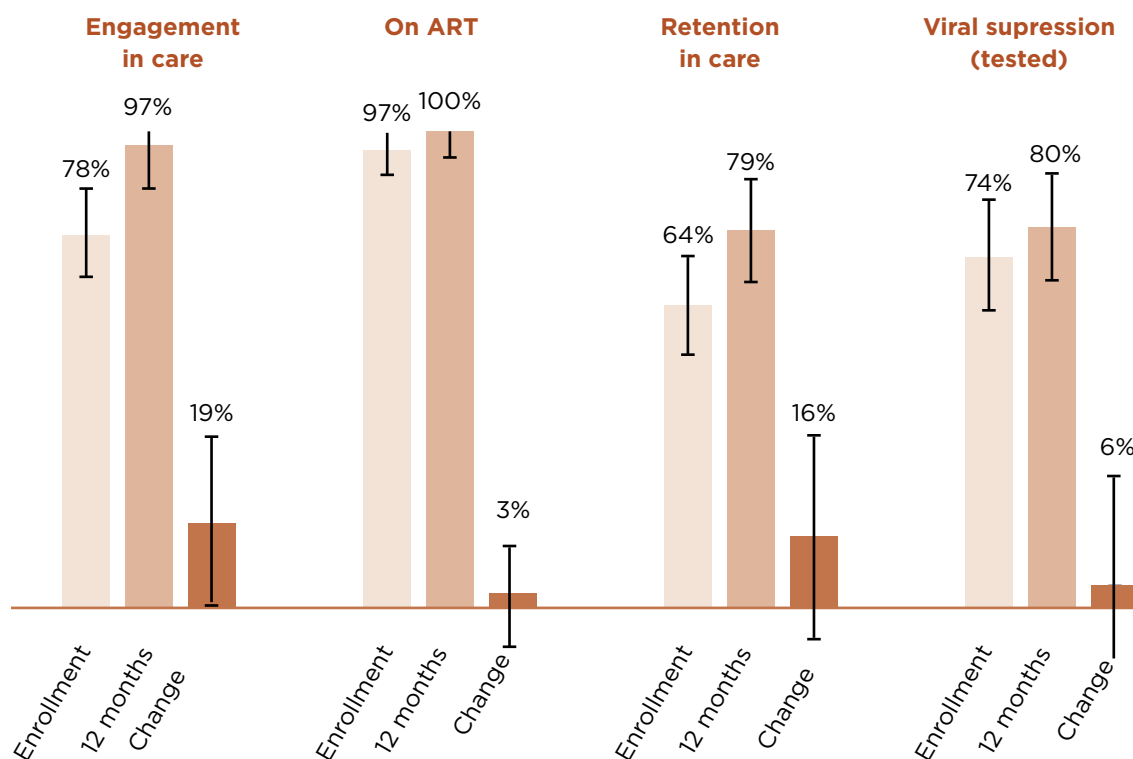


E2i EVALUATION:

TXTXT HIV CARE CONTINUUM OUTCOMES

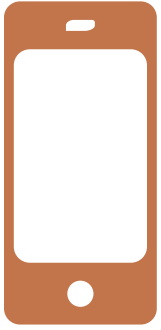
- ◆ **Enrollment:** During a 9 to 12 month period, the E2i sites enrolled 40 Black MSM with HIV into TXTXT. The enrolled men were between the ages of 22 and 27 years.
- ◆ **Outcomes:** E2i measured HIV care continuum outcomes of each client at time of enrollment in TXTXT and 12 months later. Among the enrolled clients, engagement in HIV care increased significantly from 78% to 97%. Prescription of ART remained high throughout the 12-month period. We did not observe statistically significant changes in retention in care or in viral suppression, possibly because of the relatively small number of enrolled men.

FIGURE 2. HIV care continuum outcomes among the 40 Black MSM enrolled in TXTXT as part of the E2i initiative.



Note: E2i used the following HRSA definitions for HIV care continuum outcomes:

- **Engagement in care** = At least one primary HIV care visit in the previous 12 months
- **On ART (adherence)** = Having been prescribed ART in the past 12 months
- **Retention in care** = At least two HIV care visits in the past 12 months
- **Viral suppression** = Having an HIV viral load test in the past 12 months AND having a result of less than 200 copies/mL at the last viral load test



CORE ELEMENTS



CORE ELEMENTS

Core elements are the “active ingredients” essential to achieving an intervention strategy’s desired outcomes. It is critical to adhere to the core elements when implementing an intervention; otherwise, the intervention may not work as intended. All other TXTXT activities, such as staffing arrangements and clinical workflows, can be adapted to fit the unique circumstances of the organization and priority population. However, adaptations should not compete with or contradict the core elements of TXTXT. **TXTXT has three core elements:**



1. Daily two-way personalized text message medication reminders

Each day, TXTXT clients receive three personalized, automated, two-way (bi-directional) SMS text messages that remind and encourage them to take their HIV medication. The messages are directed to the client (not a parent, caregiver, or other person). During the initial TXTXT visit, the client works with the TXTXT specialist to personalize the messages. The client can modify the messages during subsequent visits, as needed. The three messages work as follows:

Message #1:

- Sent at the time the client is scheduled to take their medication (timed with dosing)
- Reminds the client to take their medication (personalized using the client’s own words)

Message #2:

- Sent 15 minutes after message
- Asks if the client has taken the medication (personalized using the client’s own words)
- The client responds “yes” or “no”

Message #3:

- Automatically responds to the client’s text of “yes” or “no”
- Provides a positive affirmation if the client says “yes” (from a library of messages, sent in random order)
- Encourages client to take their medication if the client says “no” (from a library of messages, sent in random order)



2. ART adherence education and counseling

At the initial TXTXT visit, the TXTXT specialist counsels the clients on how to take their medications and on the importance of adherence.



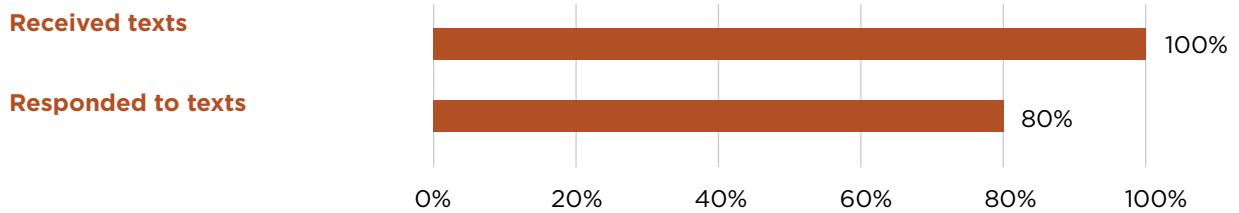
3. Biopsychosocial assessment

- At the initial TXTXT visit, the three-month follow-up visit, and the six-month follow-up visit, clients are assessed for HIV viral load, medication dosage, adherence behavior, medication self-efficacy, substance use, depression, anxiety, and HIV stigma.
- Staff use the assessment results to make referrals to counseling and other services to help address barriers to adherence.
- Assessments can also be used to measure intervention outcomes (e.g., comparing adherence and viral load at the initial visit versus the follow-up visits).



E2i EVALUATION: TXTXT PARTICIPATION OUTCOMES

FIGURE 3. Participation outcomes among the 40 clients enrolled in TXTXT as part of the E2i initiative.



- ◆ **Received texts:** Among the 40 clients enrolled in TXTXT, all (100%) received text message reminders over 12 months.
- ◆ **Responded to texts:** Most (80%) responded at least once to a text message received over one to five months.
- ◆ **Completion:** TXTXT was considered an ongoing intervention by the E2i sites; therefore, completion of TXTXT was not assessed. Clients received messages until they asked to stop the intervention.



PLANNING ACTIVITIES



PLANNING ACTIVITIES

This section provides recommended activities for planning to implement TXTXT. For helpful tools to support the planning of TXTXT, see:

Appendix B: General Best Practices for Planning to Implement an Intervention Strategy

Appendix C: TXTXT “Go Live” Worksheet

According to the E2i site teams, TXTXT is “an easy sell” to staff and leadership. Promoting adherence to HIV medications tends to be a priority for organizations that serve HIV clients. Using an automated system through text message reminders is therefore seen as value-added.

Assess Texting Usage Among Priority Population(s)

Early in the planning for TXTXT, it can be helpful to develop a better understanding of text messaging and phone usage among the young Black MSM (and other priority populations, if applicable) in your community. This process will help prevent barriers to implementation related to technology usage.

To assess texting usage, the TXTXT planning team can interview or hold focus groups with advisory boards, clients, and community leaders. Sample questions to ask include:

- » What types of cell phones do people in the community use?
- » How often do people change their phone numbers?
- » Does the priority population(s) like to use SMS texting?
- » Will costs related to texting be a barrier?
For example, will additional texts from TXTXT exceed typical texting plan limits?
- » What concerns might people have about the privacy of receiving text messages?
- » What might be other barriers and facilitators to successful implementation?

Some clients at the E2i sites could not respond to text reminder messages because the number of messages exceeded their monthly phone plan, or they did not have a data plan to support SMS text messaging. Clients also changed phone plans and numbers frequently, and broke or lost their phones.

Choose a Text Messaging Vendor

Before implementing TXTXT, it is necessary to identify and contract with a technology vendor that offers SMS gateway services. TXTXT does not come with a preferred vendor. An Internet search for “SMS gateway services” will bring up several technology companies that provide this service.

The following points are **very important** when selecting a vendor:

- » Explain to the vendor that you need a platform for sending personalized, automated, two-way text messages with medical clients.
- » Choose a platform that is compatible with the types of phones and texting plans used by your priority population(s).
- » Choose a platform that clinic staff of all ages and abilities would find intuitive and easy to use.
- » Look for a platform that allows staff to remotely monitor whether clients are receiving and responding to their messages.
- » Make sure the vendor will sign and honor a service agreement that guarantees technical support in a timely manner.
- » Ask the vendor how long it will take to tailor the platform for your organization’s TXTXT needs.

Technology glitches are bound to happen. It is therefore critical to:

- *Choose a vendor with high quality technical support*
 - *Have an IT staff person or other technology savvy person on the TXTXT team*
-

Customize and Test the Text Messaging Platform

- » Work with the vendor to customize the platform and its interface to suit your organization’s needs. This process takes time.
- » Develop a starter list of TXTXT messages (i.e., reminders and encouragements) to share with future clients ([Appendix D](#) has examples of messages).
- » Share the starter list with your vendor so they can program the terms into the platform.
- » Test the platform on several different types of devices and phone plans.
- » Work with the vendor’s technical support team to further customize the platform, if needed, and to troubleshoot any bugs in the system.

Decide on Eligibility Criteria

- » TXTXT is designed to help clients who regularly see an HIV provider but have difficulty taking their medication as prescribed, or who are newly diagnosed with HIV and just beginning to take medication. Your organization can determine additional criteria that makes sense for your clients and community. For example:
- » **Struggling with medication adherence** might be defined as clients who a) missed at least one dose in the last week, b) missed at least four doses in the last month, or c) simply would like support to improve or maintain adherence.
- » **Engaged in care** can mean a client who has had at least one (or two or more) HIV care visits in the past 12 months.
- » **Uses text messages daily** might be via different types of devices, phone plans, and apps, depending on the text messaging platform your organization decides to use.

One of the E2i sites decided to enroll all of their Black MSM clients in TXTXT, regardless of their viral load or medication adherence. They did this because they know that even when current adherence is going well, life stressors can unexpectedly get in the way of remembering to take medications.

Identify TXTXT Specialists

- » Identify staff members who can integrate TXTXT into their current work. The TXTXT specialist role is a good match for case managers, patient navigators, and peer counselors.
- » For organizations that need to hire a new staff member to act as their TXTXT specialist, look for someone with excellent communication and rapport-building skills. A peer from the community is often well-positioned to foster trusting relationships with the clients.

Train TXTXT Staff

TXTXT specialists need knowledge and training in:

- » HIV infection and treatment basics
- » Medication adherence education and counseling
- » Using the text messaging platform, including multiple practice sessions
- » Conducting biopsychosocial assessments with clients
- » Assessing and documenting client receptivity to TXTXT and client preferences for messaging, phrasing, and privacy

Professional development and training are important for TXTXT specialists, particularly those who have limited experience in the field of HIV. The E2i sites found the following training topics to be useful:

- *Self-care and resiliency*
- *Restorative and healing justice*
- *Trauma-informed care*
- *HIV “101”*

*Organizations that offer training and resources on these topics include **Black Emotional and Mental Health Collective (BEAM)** and **AIDS United**.*

Develop an Outreach and Recruitment Plan

Strategies for identifying potential TXTXT clients include:

In-reach

- » Ask for referrals of potential clients from medical providers and case managers.
- » Generate a list from organizational databases of clients who may meet your enrollment criteria (e.g., clients who are recently diagnosed, struggle with adherence, have not achieved viral suppression). Develop a process to recruit these clients.

The community-based E2i site recruited clients through internal referrals from case managers as well as external referrals from community partners, social media promotion, and outreach conducted at HIV testing events, clubs and bars. They even self-produced a recruitment video that ran on several social media platforms.

Outreach

- » Develop printed and electronic recruitment materials to increase awareness of TXTXT. Recruitment materials should summarize the intervention, specify eligibility, provide contact information, and mention incentives, if any. See the sample recruitment materials in *Appendix E*.
- » Enlist the help of peer staff to develop recruitment messaging and strategies:
 - What social media platforms does the priority population use?
 - What kinds of messages and images appeal to the priority population?
 - What are strategic places to post flyers and hand out brochures?
- » Distribute and post recruitment materials in waiting rooms, exam rooms, and affiliated pharmacies.
- » Post about TXTXT on websites and social media.

Community partners

Develop strong partnerships with community organizations to create bi-directional referral systems. Partners may include housing agencies, food assistance programs, health departments and other HIV testing sites, criminal justice partners, mental health and substance use treatment and counseling agencies, and other community-based organizations.

Incentives

Consider offering incentives, such as gift cards to local stores, for enrolling in TXTXT and attending follow-up visits.

Choose Biopsychosocial Assessment Tools

- » For the biopsychosocial assessment, it is recommended to choose standardized validated tools, such as those listed in [Appendix F](#). These tools assess:
 - Self-reported HIV medication adherence
 - Confidence, motivation, and perceived support in taking HIV medication
 - Alcohol, smoking, and substance use
 - Depression and anxiety symptoms
 - HIV stigma
 - Post-intervention client satisfaction
- » If your organization already uses assessments regularly with clients for case management or behavioral health, you can choose to continue using these same assessments.

Design a Process Flow

The process flow can be flexible based on your organization's programs, resources, and staffing.

- » Collaborate with all relevant staff to clarify the roles of TTXXT team members: who is doing what, when, where, and how.
- » Draw a map or diagram to illustrate the proposed flow.
- » Identify private space(s) to meet with clients.

Develop a Sustainability Plan

Sustainability refers to the ability to maintain programming and its benefits over time. A helpful resource for building capacity for sustainability is the [***Program Sustainability Assessment Tool***](#) developed by the Center for Public Health Systems Science at the Brown School, Washington University in St. Louis. This tool helps program planners achieve the following:

1. **Understand** the factors that influence a program's capacity for sustainability
2. **Assess** the program's capacity for sustainability
3. **Review** results from the Assessment
4. **Plan** to increase the likelihood of sustainability by developing an Action Plan

Achieving sustainability typically involves both applying for grants and accessing available reimbursement options. Organizations that employ peers to deliver services as part of TXTXT may be able to cover all or part of those services through their state's Medicaid program. RWHAP-funded organizations may be able to cover TXTXT under the Treatment Adherence service category, and may receive technical assistance on health coverage options from the [***Access, Care, and Engagement Technical Assistance \(ACE TA\) Center***](#).



E2i EVALUATION:

TXTXT IMPLEMENTATION OUTCOMES

To learn more about how TXTXT was viewed by the leadership and staff members at the E2i sites, E2i collected data from the people implementing the intervention. The data included: (1) an organizational survey completed by key site staff once during the planning period, and every six months during implementation; and (2) review of site documents created during implementation, including site visit reports, meeting notes, and cost workbooks (see [Appendix A](#)).

Measure (definition)	Results at the E2i sites
Acceptability: how well staff and leadership regard the intervention	Both sites found TXTXT highly acceptable for the duration of E2i. Each site believed that the intervention was a good fit for their organization’s mission and goals.
Adoption: the intention, initial decision, or action to implement the intervention	Both sites reported consistently high levels of adoption of TXTXT over time.
Appropriateness: the compatibility of the intervention to address a particular issue or problem	Both sites reported that TXTXT was highly appropriate and filled a service need.
Feasibility: the extent to which the intervention can be successfully carried out	Both sites considered TXTXT highly feasible for the duration of the initiative. However, feasibility was compromised when technical issues occurred.
Fidelity: the degree to which a site felt able to (a) implement the intervention as it was intended by the program developers, and (b) monitor progress	Both sites varied over time in having a full implementation team and being able to assess fidelity.
Penetration: the integration of the intervention within the organization	One site found integration of TXTXT activities increased into their organizational operations over time; the other site perceived the integration as declining over time.
Cost: the costs associated with planning and implementation, such as: personnel, training, supplies, incentives, and outreach activities	<p>Costs included both direct and in-kind expenses. Average site expenditures were:</p> <ul style="list-style-type: none"> • <i>Planning period:</i> \$17,114 • <i>Recruitment:</i> \$353 per client enrolled • <i>Implementation activities:</i> \$1,092 per client enrolled • <i>Supervision and management:</i> \$1,032 per client enrolled <p>These numbers do not necessarily reflect what it would cost to implement TXTXT at other HIV service organizations. Costs per client would be lower in settings with larger populations of Black MSM with HIV, because more participants could be recruited.</p>



IMPLEMENTATION ACTIVITIES



IMPLEMENTATION ACTIVITIES

Eligibility Screening and Enrollment

- » Screening for TXTXT eligibility can occur over the phone or in person. Organizations can adapt the **Sample Eligibility Screening Tool** ([Appendix G](#)).
- » Remember to screen for a client's ability and willingness to use two-way SMS texting on their cell phone.
- » Consider using a spreadsheet to track the number of individuals screened and enrolled, and to document reasons for disinterest or ineligibility; if enrollment is low, the spreadsheet can help with understanding why.
- » When possible, screen and enroll clients during or immediately after their medical appointments, rather than trying to schedule a second appointment; this process reduces effort and increases recruitment numbers.

To facilitate enrollment in TXTXT, one of the E2i sites would enroll clients as soon as the client expressed interest, rather than set up an appointment for a later date. The downside to this quick sign-up process was that there was not always time to do a biopsychosocial assessment or adherence education and counseling.

Initial Visit

The **Client-level Implementation Checklist** ([Appendix H](#)) is a helpful tool for structuring and maintaining fidelity to the TXTXT activities.

Biopsychosocial assessment

At the initial TXTXT visit, the TXTXT specialist welcomes the client and helps them complete a baseline biopsychosocial assessment using the tools selected in the planning stage. The assessment:

- » Establishes baseline viral load count, medication dosage, adherence behavior, and medication self-efficacy
- » Screens for substance use, depression, anxiety, and HIV stigma

After the client completes the assessment, the TXTXT specialist talks with the client about starting to address potential barriers to adherence and refers the client to mental health and substance use counseling, as needed.

Text messaging personalization

Next, the TXTXT specialist works with the client to complete the **Text Messaging Personalization Form** ([Appendix I](#)). This form collects information on the client's medication dosage, timing, and preferences for the text messages.

TXTXT specialists work closely with each client to ensure that the wording of each message is encouraging, meaningful, and appealing to the client. For privacy reasons, it is also critical to design messages that do not reveal HIV status.

The Encouraging Messages Tool ([Appendix D](#)) provides a sample starter list of 60 messages designed to encourage ongoing adherence motivation and support. These messages were designed for youth in 2014, and therefore may need updating and tailoring for your community.

Below are examples of personalized messages:

Example 1:

- » *Initial reminder:* “Take your vitamins”
- » *Second message* (15 minutes later): “Have you taken your vitamins?”
- » *Client answers yes*
 - “Great job!”
- » *Client answers no*
 - “Go for it, you still have time!”

Example 2:

- » *Initial reminder:* “It’s time for your breakfast”
- » *Second message* (15 minutes later): “Have you had your breakfast?”
- » *Client answers yes*
 - “😊”
- » *Client answers no*
 - “Bummer! Don’t quit!”

Protecting confidentiality

The TXTXT specialist next provides clients with additional tips and strategies to protect confidentiality and privacy, such as:

- » Deleting messages immediately after taking medication
- » Always using a passcode or other measure to lock their device

The **Confidentiality Tool** ([Appendix J](#)) offers a handout with tips and strategies to help protect the confidentiality of the client's text messages. Review this with the client as part of the initial visit.

Text messaging testing

Once the Text Messaging Personalization Form is completed, the TXTXT specialist enters the information into the text messaging platform, which then deploys the messages to the participant's phone.

Important! The TXTXT specialist must run a test with the client's phone to ensure that all three stages of messaging are working as expected. Troubleshoot any issues with the text messaging services.

Adherence education and counseling

During the visit, the TXTXT specialist provides basic adherence education and counseling to the client. If your organization does not already have standard practices/policies for adherence counseling, TXTXT specialists should, at a minimum, review:

- » The client's current list of medications
- » How each medication should be taken
- » Basic facts on the importance of adherence, such as those described by the website HIV.gov

Young clients tend to change their phone number often due to service disconnection, phone loss, breakage, theft, etc. To keep up with these changes, the E2i sites recommend documenting multiple modes of communication for each client, including cell phone number, email address, mailing address, landline, and social media handles. TXTXT specialists should also encourage clients to notify them immediately of any changes in phone service.

Scheduling of follow-up visits

Before the client leaves, the TXTXT specialist schedules the next follow-up visit. Organizations should set up a system to remind clients of their follow-up visit a day or two before the scheduled visit.

Follow-up visits occur at three months and at six months. Your organization may choose to extend the intervention beyond six months for clients that need more time to become or remain adherent. If your organization would like to offer this option, keep in mind that there is usually a cost for licensing and sending texts through the texting platform. Additionally, consider whether you will also continue to offer follow-up visits, and if so, if your organization's budget and schedule can accommodate the visits.

According to the E2i sites, clients who chose to remain in TXTXT after the six-month follow-up visit expressed that receiving daily text reminders helped them continue to take their HIV medications on time.

Check-ins With Clients

In between visits, TXTXT specialists should check-in regularly with clients to see how the experience with the text messaging is going. The frequency of check-ins will depend on the individual clients; some will require weekly, while others may only need monthly check-ins.

One of the E2i sites checked in monthly with their TXTXT clients rather than every six weeks. In addition, the specialist informally checked in with clients who were visiting for support groups or case management.

- » Check-ins can occur through text, email, phone calls, or before or after a client's appointments with other providers and services at your organization.
- » TXTXT specialists have reported that check-ins are essential to engagement in the intervention; maintaining a personal connection is important, as is having someone to help with troubleshooting technical issues, improving personalization, and making further referrals for psychosocial and basic health needs.

Follow-up Visits

At the **three-month follow-up visit**, the TXTXT specialist meets with the client to:

- » Continue to build rapport
- » Conduct the biopsychosocial assessment and make additional referrals as needed
- » Troubleshoot any issues with the text messaging
- » Update the Personalization Form
- » Provide adherence education and counseling
- » Ensure accuracy of all contact information (for visit reminders and scheduling)
- » Schedule the date of next appointment
- » Thank the client

At the **six-month visit**, the TXTXT specialist meets with the client to:

- » Conduct the biopsychosocial assessment (if you are doing an evaluation, this will measure how much the patient has improved over the time period)
- » Ask if the client wishes to continue with the service (if you are offering this option)
- » If the client wishes to continue:
 - Update the Personalization Form
 - Ensure accuracy of all contact information (for visit reminders and scheduling)
 - Schedule the date of next appointment
- » If this is the last appointment with the client:
 - Ask the client to complete a client satisfaction form
 - Discuss ways to maintain adherence without TXTXT (e.g., set an alarm in their phone)
 - Turn off messages to the client in the text messaging platform
- » Thank the client



E2i EVALUATION: TXTXT ADAPTATIONS

During implementation, the E2i sites made changes to the original intervention to meet the specific needs of their clients and staff members:

- ◆ **Frequency of text messages:** E2i sites adjusted the frequency of the text messages based on feedback from clients who were no longer responding to the daily messages. Clients could choose to receive TXTXT messages on a timeframe that worked better for their situation; for example, moving from daily to weekly text reminders.
- ◆ **Duration of intervention:** In the original intervention, the text messages ended after six months. The E2i sites allowed clients to continue receiving messages as long as they wanted.



E2i EVALUATION: CHALLENGES, SUCCESSES, AND LESSONS LEARNED

The E2i sites shared barriers and facilitators to meeting their implementation goals. Here is a summary of lessons learned. Additional information about the sites' experiences can be found in the Program Spotlights below.

- ◆ **Recruitment:** The community-based organization struggled to recruit young men into the intervention; the clinic-based program, however, had no trouble recruiting their young clients into the intervention.
- ◆ **Specialist attributes:** Working with a TXTXT specialist who was seen as a member of the community of young, gay, or bisexual men facilitated recruitment and engagement of clients over time. Sites reported that having a specialist who is technically savvy would also be helpful.
- ◆ **Technology:** Both sites had difficulty using the SMS texting platform. It is strongly recommended that future sites work with a vendor who will provide timely and effective technical support.
- ◆ **Tracking system for assessments:** The community-based organization found it difficult to maintain a system to track when clients were due for biopsychosocial assessments; the clinical site, however, had existing systems that helped them with tracking.



PROGRAM SPOTLIGHTS

PROGRAM SPOTLIGHT

SUNY Downstate Medical Center, HEAT Program



Organizational Background

HEAT (Health & Education Alternatives for Teens) is a program of the State University of New York (SUNY) Downstate Medical Center in Brooklyn, NY. A recipient of RWHAP Part D funding, HEAT offers affirming and culturally responsive comprehensive care for youth (13-24 years) with HIV or at-risk for HIV, and particularly LGBTQ+ people of color. HEAT’s “one-stop shopping” model provides HIV care, mental health counseling, gender-affirming hormone therapy, and prevention services by an interdisciplinary team. Although most of their clients reside in Brooklyn, HEAT also serves youth from across New York City.

Implementation Goals and Context

HEAT chose to implement TXXT as a key tool for enhancing their existing antiretroviral adherence counseling services for young Black MSM ages 16-29 years.



Recruitment and Delivery

HEAT's TXTXT team consists of a full-time TXTXT specialist who manages recruitment, enrollment, and follow-up with clients. HEAT has stressed the value of identifying a specialist who represents the community of interest for TXTXT, and who therefore can develop trusting relationships with clients. As a fully integrated member of the clinical team, the specialist is also able to provide HEAT's clinicians with the clients' perspective and care needs that do not come up during medical visits.

Rounding out the TXTXT team are the clinic director who provides strategic direction, a data manager who provides onsite support of the texting platform, and a fiscal manager. The TXTXT specialist has successfully enrolled nearly all eligible existing clients from the HEAT clinic and SUNY's adult HIV care program by approaching clients in the waiting room and receiving referrals from in-house case managers and primary care providers. To enhance enrollment, HEAT has also reached out to community partners for referrals, conducted outreach on social media, and collaborated on outreach events with Kiki Houses (LGBTQ+ youth-led groups of chosen family members that provide youth a refuge and cultural identity).

To develop the SMS texting platform for TXTXT, HEAT contracted with a private company that had worked with the intervention developers and that specializes in designing mobile applications for patient-level disease management in low-resource settings. From the start, HEAT staff have recognized the advantages of TXTXT for a population that universally uses mobile phones and already receives appointment reminders by text message. Clients have been very receptive to trying the intervention. They have commented on the convenience of having automated reminders to take their HIV medications and appreciated an intervention that allows for privacy of HIV status.



Adaptations and Innovations

- » **Eligibility criteria:** Although TXTXT was designed for people new to HIV treatment or struggling with adherence, HEAT opened up enrollment to all Black MSM clients, regardless of their current viral load or medication adherence. They did this with the understanding that even when current behaviors are optimal, life stressors can unexpectedly interfere with adherence. A few clients, however, did not see the need for TXTXT when they were already doing well with adherence.
- » **Social media presence:** To keep clients up to speed on the programs offered at the clinic, HEAT staff hold weekly Facebook live sessions. The HEAT team also collaborates with young MSM staff to engage individuals interested in seeking services at the clinic through social media.
- » **COVID-19 pandemic:** HEAT adapted to the challenges brought on by the pandemic by providing routine check-ins via phone or text.

Program Integration

All HEAT employees have demonstrated commitment to TXTXT and provide support for recruitment, administration, and case management. At the end of the E2i funding period, HEAT plans to migrate TXTXT to a new platform being offered through a project funded by the New York State Department of Health AIDS Institute. Because this new platform will be web-based (instead of SMS), it will allow users to send and receive texts without associated mobile phone charges. The new service will also offer features such as appointment scheduling capabilities.

“Having the whole clinic involved in TXTXT is really important to making this intervention work—it can’t just be the specialist working alone. The team must do their best to work together to support each other and their clients.” —SUNY HEAT staff member



Lessons Learned

- » **Technical limitations:** The HEAT staff encountered limitations and technical issues with their TXTXT platform, including not being able to access the information that confirms whether clients are successfully receiving and responding to the text messages. HEAT staff hope that by adopting a new platform, they will have an easier time accessing this information.
- » **Population-specific barriers:** Over time, it became clear that some clients do not use the two-way texting because they have limited phone and data plans. Clients also change phone plans and numbers frequently because of broken or lost phones. The HEAT team believes that changing to a web-based platform will reduce the impact of these issues.

Contact Information

**The Research Foundation for the State University of
New York, HEAT Program**

450 Clarkson Ave, Brooklyn, NY 11203 • 718.613.8543
heatprogram450@gmail.com • heatprogram.org

PROGRAM SPOTLIGHT

UNIFIED-HIV Health and Beyond



Organizational Background

UNIFIED-HIV Health and Beyond is an AIDS service organization located in the city of Detroit that serves ten counties in Southeast Michigan. A recipient of RWHAP Parts A and B funding, UNIFIED is dedicated to helping people with HIV, or affected by HIV, achieve optimal health through compassionate direct care, support services, prevention, and education. UNIFIED is widely recognized for its programming and outreach to young Black MSM and LGBTQ+ people more broadly. Young Black MSM in Detroit and surrounding areas face high levels of poverty, social marginalization, homelessness, and HIV.

Implementation Goals and Context

UNIFIED implemented TXTXT with the goal of supporting adherence to HIV medications among Black MSM ages 18–29 years.



Recruitment and Delivery

To develop their TXXXT SMS platform, UNIFIED contracted with a private company that specializes in designing mobile applications for patient-level illness management in low-resource settings and that had previously worked with the intervention developers. UNIFIED's program specialist and information technology specialist worked with the company to tailor the platform and receive training in its usage.

UNIFIED recruits TXXXT clients through multiple avenues, including internal referrals from case managers, external referrals from community partners, social media promotion, and outreach conducted at HIV testing events, clubs and bars, and other venues where young Black MSM socialize. UNIFIED even self-produced a recruitment video that ran on several social media platforms. Specialists also visit a local HIV clinic weekly to receive warm hand-offs and enroll clients on site. Once clients have TXXXT installed on their phones, the specialist calls them monthly to find out about their experience with the text messages, and to ask if clients wish to change their messages or texting frequency.

Adaptations and Innovations

- » **Check-ins:** The original TXXXT intervention calls for initial follow-up with clients at six weeks. UNIFIED found that clients needed more frequent check-ins, and therefore changed the check-in intervals to monthly. In addition, the specialist conducts informal check-ins with clients who are visiting for support groups or case management.
- » **Client feedback during follow-up:** UNIFIED added questions to their follow-up surveys to assess each client's experience with the program.
- » **COVID-19 pandemic:** During the pandemic, UNIFIED intensified their virtual outreach and recruitment through the agency's social media platforms and continued to work with community partners to promote TXXXT. They also delivered care packages that included TXXXT program information to clients engaged with the agency's social media platform. Staff also started using a software that enabled them to enroll clients virtually and started calling existing clients more often to check on their mental health and well-being.



Program Integration

While TXTXT was well-received by all staff from the beginning, buy-in grew even stronger as the TXTXT team engaged other agency staff and the Community Advisory Board in quality improvement methods. UNIFIED is further integrating TXTXT by training all case managers on TXTXT, rather than depending on a specialist to enroll all clients. This cross-department training should also prevent gaps in TXTXT services caused by staff turnover. In 2021, UNIFIED was awarded federal funding through the Ending the HIV Epidemic Plan, to expand TXTXT services to people of all genders, sexual orientations, race/ethnicities, and ages after the E2i funding period ends. They plan to adapt the platform through a partnership with the University of Michigan that will add features to TXTXT such as social support mechanisms.

“The word of mouth about TXTXT has been: ‘No one’s heard of such a thing before.’ ‘Where can we sign up?’ ‘And this is amazing!’” —UNIFIED staff member



Lessons Learned

- » **Time needed to build the platform:** Hiring the SMS gateway services vendor and developing the platform took longer than expected. UNIFIED decided to use that additional time to develop a recruitment plan and materials.
- » **Enrollment at first encounter:** TTXXT staff aim to enroll clients as soon as the client expresses interest, in order to prevent loss to follow-up. The downside to this quick sign-up process is that the specialists are not always able to do a biopsychosocial assessment or adherence education and counseling at that time.
- » **Technology challenges:** As with all technology products, the SMS platform did not always work as intended on all client devices. UNIFIED needed to work with the software company and their information technology specialist to troubleshoot issues.
- » **Phone plan challenges:** Some clients would not respond to their reminder messages because of limited phone and data plans. Clients also changed phone plans and numbers frequently, and broke or lost their phones. These issues limited the interactive element of TTXXT, although clients reported that just receiving reminders was still helpful.
- » **Inter-departmental communication:** Once UNIFIED began involving case managers in the TTXXT enrollment processes, they needed to adjust their process flow to clarify roles and responsibilities. Ultimately, they found it helpful to hold bi-weekly combined departmental meetings to discuss shared clients and other TTXXT updates.

Contact Information

UNIFIED-HIV Health & Beyond

3968 Mt Elliott St, Detroit, MI 48207
313.446.9800 • <https://miunified.org>



APPENDICES

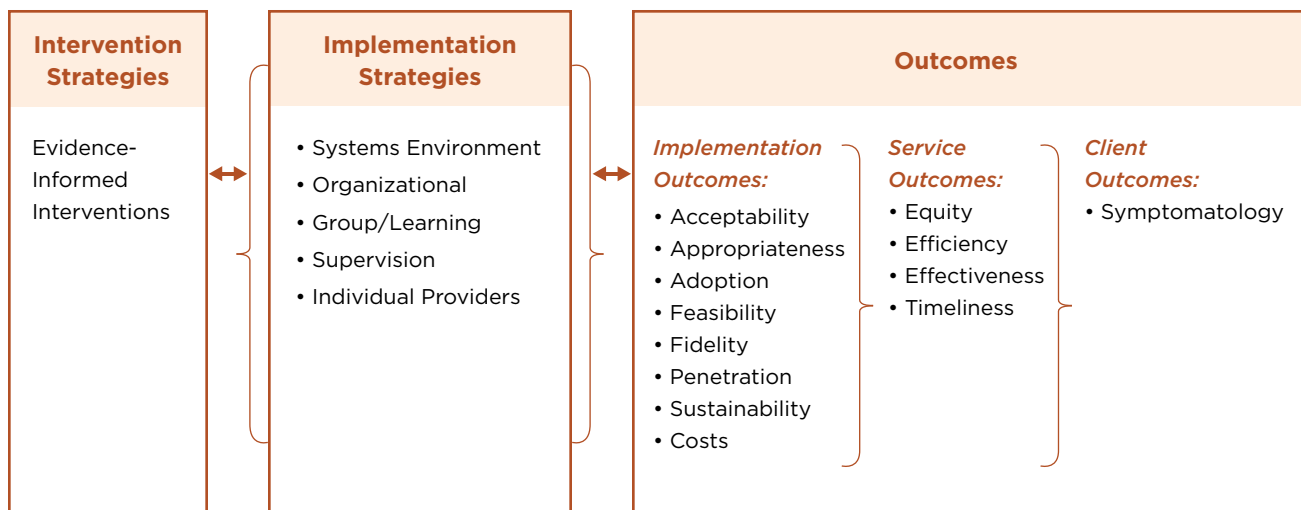


APPENDIX A. IMPLEMENTATION SCIENCE AND EVALUATION: FRAMEWORK AND METHODS

The Center for AIDS Prevention Studies (CAPS) at the University of California San Francisco conducted the evaluation of the E2i program implementation. The evaluation used the Proctor Model Framework for Implementation Research.⁷ This approach suggests that program assessment should include an understanding of the process of implementation and its impact on all people and systems that are involved in the implementation:

1. The core elements of the program (intervention strategies).
2. The efforts to put the program into place (implementation strategies).
3. How the program is viewed by the people involved (implementation outcomes).
4. How the program is delivered (service outcomes).
5. The impact on the participants (client outcomes).

The E2i Proctor Model



⁷ Proctor E, Silmere H, Raghavan R, et al. Outcomes for implementation research: Conceptual distinctions, measurement challenges, and research agenda. *Adm Policy Ment Health*. 2011;38(2):65-76.

Six types of information were gathered over the three years of program implementation. These include:

Organizational Assessment: Every six months the program director completed a survey. This survey had questions about the organization (e.g., number of patients, types services provided, and staffing). It also included questions about program delivery and staff views of the program.

Proctor Concepts

- » Implementation strategies (systems environment, organizational, group/learning, supervision)
- » Implementation outcomes (acceptability, appropriateness, adoption, feasibility, fidelity, penetration, sustainability, costs)

Document Review: Evaluators reviewed documents that were created during implementation and technical assistance activities. Documents were created by either the sites themselves or by Fenway/AIDS United and included grant applications, site visit reports, quarterly reports, monitoring call notes, cohort call notes, and presentations in meetings.

Proctor Concepts

- » Implementation Strategies (systems environment, organizational, group/learning, supervision, individual providers, individual patients)
- » Implementation Outcomes (acceptability, appropriateness, adoption, feasibility, fidelity, penetration, sustainability)

Observations: Sites participated in two Learning Session Meetings each year. Evaluators took notes on discussions and presentations. These notes focused on barriers and facilitators to implementation.

Proctor Concepts

- » Implementation Strategies (systems environment, organizational, group/learning, supervision, individual providers, individual patients)

Costing Data: Program managers and financial administrative staff completed two cost workbooks. One was for the three-month preparation/planning period and the first year of program implementation. The other was for the second year. These included personnel and expenses paid for by E2i as well as in-kind donations.

Proctor Concepts

- » Implementation Outcomes (costs)

Intervention Exposure: Information was collected on participants who enrolled between September 2018 and December 2020. Demographic information was collected on enrollment forms. Intervention exposure forms were collected whenever staff had program-related interactions with participants. These forms included the things like the date of the interaction, the staff person who had contact, type of interaction, activities completed, and outcomes of the activities.

Proctor Concepts

- » Service Outcomes (fidelity, penetration, equity, efficiency, effectiveness, timeliness)

Medical Records: Medical records were collected on participants for the 12 months before enrollment in the program and for the 12 months after enrollment in the program. The information was specific to HIV-related medical care, such as: appointment dates; prescription of ART; viral load test dates; and viral load test results.

Proctor Concepts

- » Client Outcomes (symptomatology)

Quantitative Analysis: Organizational assessment data was used to describe organization characteristics and readiness for implementation based on Proctor Concepts. Client level enrollment and intervention exposure data was analyzed using descriptive statistics to understand client demographics, proportions of clients receiving intervention services, and frequencies of exposures. When appropriate, proportion of clients completing the intervention was included. Repeated measures modeling methods were used to assess changes in HIV Care Continuum outcomes for clients enrolled in the intervention. This compared data from 12 months prior to enrollment to 12 months following enrollment. Costing data was analyzed to provide information on cost of intervention implementation per client enrolled.

Qualitative Analysis: Documents and observations were thematically analyzed using the Proctor Concepts. The intervention was the primary unit of analysis.



APPENDIX B. GENERAL BEST PRACTICES FOR PLANNING TO IMPLEMENT AN INTERVENTION STRATEGY

The following are **general** recommendations for planning an intervention in an HIV service delivery organization. They are not specific to TXTXT.

Create a Planning Team

- » Assemble a team of staff “champions” who are invested in the success of the intervention: who will meet regularly to drive planning, implementation, and sustainability; and who will remain committed to overcoming hurdles and moving implementation forward.
- » Consider how to meaningfully involve at least one peer (a person who represents the priority population) in the planning and implementation of the intervention (see [*AIDS United’s resources on meaningful involvement of people with HIV*](#)).
- » Hold weekly team meetings or daily “huddles” (i.e., short meetings at the beginning of the day to review client status and discuss recruitment and retention issues, etc.).

Engage Leadership and Staff

Implementing a new service into an established program may require changes in routines, job duties, and administrative procedures. It is essential to obtain buy-in and a firm commitment from the entire organization as early in the planning process as possible.

- » Meet with executive leadership to discuss:
 - How the intervention will support the organization’s mission and goals
 - The benefits of the intervention for clients and the organization as a whole
 - The resources needed to implement the intervention
 - The organizational systems and procedures that will be affected by implementation
 - The importance of leadership communicating their commitment to the intervention to all staff
 - How the intervention team will regularly share the status of the intervention with regard to planning, implementation, enrollment, and client outcomes

⋮ **Appendix B.** *General Best Practices for Planning to Implement an Intervention Strategy*

- » Meet with staff members directly and indirectly affected by the intervention to discuss:
 - The benefits of the intervention for clients and the organization as a whole
 - How staff can help with recruitment and referrals
 - Suggestions for outreach and implementation processes
 - How the intervention team will regularly share the status of the intervention with regard to planning, implementation, enrollment, and client outcomes

Assess Community Needs

Early in the planning process, organizations should consider conducting an informal or formal needs assessment to better understand the needs of the priority population(s) and how to best tailor the intervention to their needs. Engaging with the local community also helps to establish trust, build recruitment visibility, and grow your referral networks.

Community needs assessment strategies include:

- » Review existing client data on engagement, adherence, retention, and viral load.
 - What does the data tell you about the needs of your client population?
- » Discuss the intervention with community members, providers, clients, and service agencies through forums, interviews, or focus groups. Ask for their input on the intervention:
 - What can make the intervention appealing and accessible?
 - What might be barriers to enrollment and participation? What can be done to overcome these barriers?

Train All Staff

When implementing an intervention for people with HIV, it is important to train all organizational staff in reducing stigma, identifying and addressing trauma, enhancing cultural humility, and providing affirming, culturally responsive care to all people with HIV, including lesbian, gay, bisexual, queer, transgender and gender diverse people. Training and resources are available from [TargetHIV](#), [AIDS Education and Training Center Program](#), and [National LGBTQIA+ Health Education Center](#). Peer hires may also need additional training to acquire office skills and other professional competencies.

Conduct a Pilot Test

Prior to full implementation, conduct a pilot test under “real world” conditions to evaluate the feasibility and acceptability of the process flow, forms, and procedures.

- » Consider piloting TXTXT with one specialist and a small group of clients first.
- » Use a validated [quality improvement method](#) to guide your pilot test.
- » After the pilot, communicate to all staff the results of the pilot: what worked, what did not work, and what changes were made to improve operations.



APPENDIX C. TXTXT “GO LIVE” WORKSHEET

Purpose

The purpose of the “Go Live” Worksheet is to:

1. Guide organizations in carrying out the intervention’s planning steps and activities
2. Monitor progress in meeting implementation goals and objectives

Instructions

The team that is leading the intervention should identify a team member to complete this worksheet over time. Use the worksheet to:

- » Develop and drive team meeting agendas
- » Document decisions made by the team
- » Track progress towards goals

Name of organization	
Name (Who is completing this worksheet?)	
Intervention Goal	To promote adherence to antiretroviral therapy (ART) and improve viral suppression among people with HIV
Core elements (These are essential to the intervention and cannot be changed)	<ol style="list-style-type: none"> 1. Daily personalized two-way text message medication reminders 2. Medication adherence education and counseling 3. Biopsychosocial assessment
Planning Steps	
Planning Team (Who is on the planning team?)	1.
	2.
	3.
	4.
	5.
Eligibility criteria	<ol style="list-style-type: none"> 1. Diagnosed with HIV 2. On ART for at least 1 month and engaged in HIV care 3. Reports interest in getting help with adherence to ART 4. Uses text messaging on a cell phone
Priority population(s) (Who will you recruit for the intervention?)	1.
	2.
	3.
	4.

Geographic catchment area(s) (From which communities will you recruit clients?)	1.
	2.
	3.
Language(s) (In what languages will you deliver the intervention?)	1.
	2.
Engaging stakeholders (What strategies will you use to gain “buy-in” and feedback?)	1. Organizational leadership:
	2. Relevant staff:
	3. Local community members:
	4. Clients:
Recruitment and outreach (What are your recruitment strategies?)	1.
	2.
	3.
	4.
	5.
Incentives (What incentives, if any, are you using?)	

Intervention Staff (Who will do what?)	Role/Task	Staff Responsible
	Outreach and recruitment	
	Intake/enrollment/ personalization forms	
	Adherence education and counseling	
	Biopsychosocial assessments and referrals	
	Check-ins	
	Follow-up visits	
	Other:	
Staff training requirements (Check each box when completed)	<input type="checkbox"/> HIV infection and treatment basics <input type="checkbox"/> Medication adherence education and counseling <input type="checkbox"/> Using the text messaging platform <input type="checkbox"/> Conducting biopsychosocial assessments <input type="checkbox"/> Screening for client eligibility interest <input type="checkbox"/> Using the Personalization Form <input type="checkbox"/> Cultural humility and affirming care for priority populations	
Staff training plan (When, where, and how will staff be trained?)		

<p>SMS Gateway services vendor</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Choose SMS Gateway services vendor <input type="checkbox"/> Customize platform with vendor <input type="checkbox"/> Tailor the starter list of encouraging messages <input type="checkbox"/> Test platform on multiple devices
<p>Biopsychosocial assessment tools (What screening instruments will you use?)</p>	<ol style="list-style-type: none"> 1. Antiretroviral therapy (ART) adherence (e.g., <i>HIV Medication Adherence Visual Analogue Scale</i>): 2. Medication self-efficacy (e.g., <i>HIV Medication Taking Self-Efficacy Scale</i>): 3. Substance use (e.g., <i>Alcohol, Smoking, and Substance Involvement Screening Test/ASSIST</i>): 4. Medication self-regulation (e.g., <i>Self-Regulation of Medication Adherence Battery/SRMAAB</i>): 5. Depressive and anxiety symptoms (e.g., <i>Brief Symptom Inventory/BSI</i>): 6. HIV stigma (e.g., <i>HIV Stigma Scale</i>): 7. Viral load (e.g., medical records):
<p>Additional Tools (e.g., referral forms, client satisfaction and feedback surveys, client tracking tool)</p>	<ol style="list-style-type: none"> 1. 2. 3. 4.
<p>Referrals (who will you partner with for referrals to services not offered by your organization?)</p>	<ol style="list-style-type: none"> 1. 2. 3. 4.

<p>Check-in Calls/Texts (How often will you check in with clients? What messages will you give? What will you do if the client does not respond?)</p>	
<p>TXTXT process flow (Describe or draw the process from recruitment through follow-up visits. Consider: who, when, what, and where)</p>	
<p>Sustainability (What are you doing to make your program sustainable?)</p>	
<p>SMART goals (What are your Specific, Measurable, Achievable, Relevant, Time-Bound goals for the year?)</p>	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.



APPENDIX D. ENCOURAGING MESSAGE TOOL

Sample list of encouraging messages that can be programmed for automated reply

Replies for “Yes” (when asked if they have taken medication):

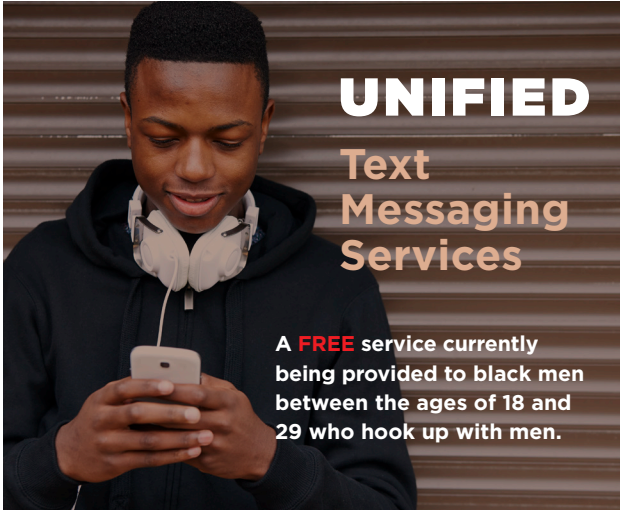
- | | | |
|-------------------------------|--------------------------|--------------------------|
| 1. Great job! | 15. That’s amazing! | 29. Splendid |
| 2. Way to go! | 16. You’re awesome! | 30. You are so magical |
| 3. Keep it up! | 17. That is excellent | 31. Tremendous! |
| 4. Good work! | 18. You should be proud! | 32. Marvelous |
| 5. You rock! | 19. Fabulous! | 33. You’re extraordinary |
| 6. Nice! | 20. That’s fantastic! | 34. YAS! |
| 7. That’s great! | 21. Super duper | 35. Awesome! |
| 8. Sweet! | 22. You’re a rock star | 36. Killing it! |
| 9. Woo who! | 23. High five! | 37. You got this! |
| 10. YEAH!! | 24. Thumbs up! | 38. 😊 |
| 11. Good work! | 25. 😊 | 39. 😊 |
| 12. I’m so glad to hear that! | 26. Hurray! | 40. 😍 |
| 13. Yay! | 27. Woot! Woot! | |
| 14. That’s wonderful! | 28. Spectacular! | |

Replies for “No” (when asked if they have taken medication):

- | | | |
|--|--|---------------------------------------|
| 1. You can do it! | 9. You’ve got it, you still have time! | 17. Aw crud. Better late, than never. |
| 2. Go for it, you still have time! | 10. Try, try again | 18. Darn! You still have time! |
| 3. Ooops! How about now? | 11. Just do it! | 19. Dangit! |
| 4. Uh oh, but you still have time. | 12. Dang! Now! | 20. It is what it is. You got this! |
| 5. Come on! You got this! | 13. Drat, you still got this! | 21. 😞 |
| 6. Oh no! You got this, don’t quit! | 14. Bummer! Don’t quit! | 22. 😞 |
| 7. Shoot! Better a little late than never. | 15. Fooley, do it now! | 23. 😞 |
| 8. Shucks, you still have time. | 16. Blast. Do it now! | |



APPENDIX E. SAMPLE RECRUITMENT MATERIALS



UNIFIED
Text
Messaging
Services

A **FREE** service currently being provided to black men between the ages of 18 and 29 who hook up with men.

- ▶ Reminders To Take Your Meds
- ▶ Customizable & Discreet Daily Text Messages
- ▶ Fast & Easy Response
- ▶ Improve Treatment Adherence

Enrollment Contacts
Sample Name 1 • XXX.XXX.XXXX • Sample Email
Sample Name 2 • XXX.XXX.XXXX • Sample Email

A program of UNIFIED - HIV Health and Beyond.
Text messaging charges may apply depending on your cell phone provider*
IRB Number: XXXXXXXXX
Individuals in the photos are models and used for illustrative purposes only unless otherwise noted - no representation regarding HIV status or sexual orientation is made and should not be inferred.

Want to improve your treatment adherence?

Could daily text reminders help you remember to take your medications?

**UNIFIED
Text
Messaging
Services**

- Discrete Tailored Text Messages
- Fast & Easy Response



Contact Sample Name at
Sample Email or
XXX.XXX.XXXX

*This service is currently being provided to Black Men between the ages of 18 and 29 who hook up with men.

Materials provided by Unified-HIV Health and Beyond, Detroit, MI and recreated by Fenway Health for this publication



APPENDIX F. SUGGESTED ASSESSMENT TOOLS

The following tools can be used for conducting biopsychosocial assessments at the initial, three-month, and six-month follow-up visits for TXTXT.

1. *HIV Medication Adherence*⁸
 - 30-day recall visual analogue scale of adherence (i.e., scale 0=100)
 - Viral load from medical record in past 3 months
2. *HIV Medication Taking Self-Efficacy Scale*⁹
3. *Self-regulation of Medication Adherence Battery (SRMAAB)*¹⁰
4. *Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST)*¹¹
5. *Brief Symptom Inventory* (depressive, anxiety symptoms)¹²
6. *HIV Stigma*¹³
7. Client Satisfaction Questionnaire; **post-program only**¹⁴

⁸Giordano TP, Guzman D, Clark R, Charlebois ED, Bangsberg DR. Measuring adherence to antiretroviral therapy in a diverse population using a visual analogue scale. *HIV Clinical Trials*. 2004;5:74-79.

⁹Erlen JA, Cha ES, Kim KH, Caruthers D, Sereika SM. The HIV Medication Taking Self-efficacy Scale: Psychometric evaluation. *J Adv Nurs*. 2010;66(11):2560-2572.

¹⁰Tucker CM, Peterson S, Herman KC, Fennell RS, et al. Self-regulation predictors of medication adherence among ethnically different pediatric patients with renal transplants. *J Pediatr Psychol*. 2001;26(8):455-464.

¹¹Humeniuk R. Validation of the alcohol, smoking and substance involvement screening test (ASSIST) and pilot brief intervention: A technical report of phase II findings of the WHO ASSIST project. Geneva: World Health Organization; 2006.

¹²Derogatis, LR. *BSI Brief Symptom Inventory: Administration, Scoring, and Procedure Manual (4th Ed.)*. Minneapolis, MN: National Computer Systems; 1993.

¹³Wright K, Naar-King S, Lam P, Templin T, Frey M. Stigma scale revised: Reliability and validity of a brief measure of stigma for HIV + youth. *J Adolesc Health*. 2007;40(1):96-98.

¹⁴Larsen DL, Attkisson CC, Hargreaves WA, Nguyen TD. Assessment of client/patient satisfaction: Development of a general scale. *Eval Program Plann*. 1979;2:197-207.



APPENDIX G. SAMPLE ELIGIBILITY SCREENING FORM

Date: _____ Staff: _____ Client: _____

Please leave a checkmark (✓) in the selected boxes.

Yes No

Eligibility questions:

- | | | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Is the client diagnosed with HIV? |
| <input type="checkbox"/> | <input type="checkbox"/> | Is the client engaged in HIV care (had at least 1 visit in the past 12 months)? |
| <input type="checkbox"/> | <input type="checkbox"/> | Does the client use text messaging on a cell phone? |
| <input type="checkbox"/> | <input type="checkbox"/> | Does the client's cell phone data plan support two-way text messaging? |
| <input type="checkbox"/> | <input type="checkbox"/> | Would the client like support to enhance ART adherence? |
| <input type="checkbox"/> | <input type="checkbox"/> | Optional: Does the client meet priority population criteria (e.g., race, age, sexual orientation)? |

If yes to all of the above, client is eligible.

- | | | |
|--------------------------|--------------------------|---------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Did the client enroll in TXTXT? |
|--------------------------|--------------------------|---------------------------------|

If screening was not done or is incomplete, or if client was eligible but did not enroll, explain why below:



APPENDIX H. TXTXT CLIENT-LEVEL IMPLEMENTATION CHECKLISTS

Purpose

The purpose of the client interaction checklist is to:

- » Guide staff on important components of the intervention
- » Encourage staff to reflect on what activities they did or did not complete
- » Monitor how closely staff is delivering the intervention as intended
- » Serve as a tool for supervisors to provide feedback to staff delivering the intervention

Instructions

Staff who are delivering the intervention should use one checklist per interaction with each client. It can be completed during the interaction (to serve as a guide), or shortly after the interaction.

Staff should check “Yes” for all activities completed and provide an explanation for activities that were not carried out.



Date: _____ Staff: _____ Client: _____

TXTXT Initial Visit Checklist

Did you complete the following activities?

- | Yes | No | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Conduct biopsychosocial assessments |
| <input type="checkbox"/> | <input type="checkbox"/> | Antiretroviral therapy (ART) adherence |
| <input type="checkbox"/> | <input type="checkbox"/> | Medication self-efficacy |
| <input type="checkbox"/> | <input type="checkbox"/> | Medication self-regulation |
| <input type="checkbox"/> | <input type="checkbox"/> | Substance use |
| <input type="checkbox"/> | <input type="checkbox"/> | Depression and anxiety symptoms |
| <input type="checkbox"/> | <input type="checkbox"/> | HIV stigma |
| <input type="checkbox"/> | <input type="checkbox"/> | Viral load, refer to medical records |
| <input type="checkbox"/> | <input type="checkbox"/> | Make referrals as needed |
| <input type="checkbox"/> | <input type="checkbox"/> | Complete Text Messaging Personalization Form |
| <input type="checkbox"/> | <input type="checkbox"/> | Refer to Encouraging Message Tool for a list of sample messages |
| <input type="checkbox"/> | <input type="checkbox"/> | Send test text and see if client successfully receives it |
| <input type="checkbox"/> | <input type="checkbox"/> | If client does not receive it, troubleshoot using the instructions provided by the TXTXT platform developers |
| <input type="checkbox"/> | <input type="checkbox"/> | Review <i>Protect Confidentiality Tool</i> with client and provide tips to help protect confidentiality and privacy |
| <input type="checkbox"/> | <input type="checkbox"/> | Provide ART adherence education |

... *Appendix H. TTXt Client-level Implementation Checklists*

- | Yes | No | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Provide client-specific ART adherence counseling |
| <input type="checkbox"/> | <input type="checkbox"/> | Review current list of medications prescribed to client |
| <input type="checkbox"/> | <input type="checkbox"/> | Review how each medication should be taken |
| <input type="checkbox"/> | <input type="checkbox"/> | Make sure client knows how to take their medication |
| <input type="checkbox"/> | <input type="checkbox"/> | Ensure accuracy of all contact information (for visit reminders and scheduling) |
| <input type="checkbox"/> | <input type="checkbox"/> | Schedule date of next appointment |
| <input type="checkbox"/> | <input type="checkbox"/> | Thank the client |

If any item on this list is not done or is incomplete, explain why below:

Date: _____ Staff: _____ Client: _____

TXTXT Check-In Checklist

Did you complete the following activities?

- | Yes | No | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Call or text client after in-person visit (at least once a month) |
| <input type="checkbox"/> | <input type="checkbox"/> | Check for any problems or issues with receipt of text messages |
| <input type="checkbox"/> | <input type="checkbox"/> | If any, troubleshoot |
| <input type="checkbox"/> | <input type="checkbox"/> | Update contact information |
| <input type="checkbox"/> | <input type="checkbox"/> | Confirm date of next visit |

If an activity is not completed, explain why below:

Date: _____ Staff: _____ Client: _____

TXTXT Follow-Up Visit Checklist

Did you complete the following activities?

- | Yes | No | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Remind client the day before the scheduled visit |
| <input type="checkbox"/> | <input type="checkbox"/> | Conduct biopsychosocial assessments |
| <input type="checkbox"/> | <input type="checkbox"/> | Antiretroviral therapy (ART) adherence |
| <input type="checkbox"/> | <input type="checkbox"/> | Medication self-efficacy |
| <input type="checkbox"/> | <input type="checkbox"/> | Medication self-regulation |
| <input type="checkbox"/> | <input type="checkbox"/> | Substance use |
| <input type="checkbox"/> | <input type="checkbox"/> | Depression and anxiety symptoms |
| <input type="checkbox"/> | <input type="checkbox"/> | HIV stigma |
| <input type="checkbox"/> | <input type="checkbox"/> | Viral load, refer to medical records |
| <input type="checkbox"/> | <input type="checkbox"/> | Make referrals as needed |
| <input type="checkbox"/> | <input type="checkbox"/> | Assess client's satisfaction with TXTXT |
| <input type="checkbox"/> | <input type="checkbox"/> | For visits at 6 months or later, ask if client would like to continue receiving texts |
| <input type="checkbox"/> | <input type="checkbox"/> | If no, skip next three activities and discuss how client can continue to remain adherent to ART |
| <input type="checkbox"/> | <input type="checkbox"/> | Review and update <i>Text Messaging Personalization Tool</i> |
| <input type="checkbox"/> | <input type="checkbox"/> | Ensure accuracy of all contact information for visit reminders and scheduling |

Yes No

 Schedule date of next appointment

 Thank the client

If an activity is not completed, explain why below:



APPENDIX I. TEXT MESSAGING PERSONALIZATION FORM

1. What is the name of your cell phone provider?

AT&T

Tello

Verizon

Boost Mobile

T-mobile

Virgin

Cricket

TracFone

Other; specify:

MetroPCS

US Cellular

Sprint

US Mobile

2. What is your cell phone number? _____ - _____ - _____

Note: Counsel the participant to text “STOP” if they want to stop receiving texts.

For first medication dose:

3. What time would you like to receive the text message reminder to take your medication? _____:_____AM/PM

3a. What do you want the text message reminder to say? (Limit 160 characters)

Note: Does chosen text message disclose status? If so, discuss with participant and suggest alternate options.

Note: Set reply text to send 15 minutes after the first text.

3b. Fifteen minutes after you receive the first text, we will send you another text that will ask you to respond (via text) once you have taken your medication. What do you want this text message to say?

Note: Explain to client to respond “Yes” if you took your medication, “No” if you did not.

For second medication dose:

Note: If only one medication dose, skip to Q7.

4. Time ____:____AM/PM

4a. What do you want the text message reminder to say? (Limit 160 characters)

Note: Does chosen text message disclose status? If so, discuss with participant and suggest alternate options.

Note: Set reply text to send 15 minutes after the first text.

4b. Fifteen minutes after you receive the first text, we will send you another text that will ask you to respond (via text) once you have taken your medication. What do you want this text message to say?

For third medication dose:

Note: If only two medication doses, skip to Q7.

5. Time ____:____AM/PM

5a. What do you want the text message reminder to say? (Limit 160 characters)

Note: Does chosen text message disclose status? If so, discuss with participant and suggest alternate options.

Note: Set reply text to send 15 minutes after the first text.

5b. Fifteen minutes after you receive the first text, we will send you another text that will ask you to respond (via text) once you have taken your medication. What do you want this text message to say?

For fourth medication dose:

Note: If only three medication doses, skip to Q7.

6. Time ____:____AM/PM

6a. What do you want the text message reminder to say? (Limit 160 characters)

Note: Does chosen text message disclose status? If so, discuss with participant and suggest alternate options.

Note: Set reply text to send 15 minutes after the first text.

6b. Fifteen minutes after you receive the first text, we will send you another text that will ask you to respond (via text) once you have taken your medication. What do you want this text message to say?

For weekend reminders:

7. Would you like to receive different reminders on the weekend? (Circle): Yes No
(Circle): Friday Saturday Sunday
Time ____:____AM/PM

7a. What do you want the text message reminder to say? (Limit 160 characters)

Note: Does chosen text message disclose status? If so, discuss with participant and suggest alternate options.

Note: Set reply text to send 15 minutes after the first text.

6b. Fifteen minutes after you receive the first text, we will send you another text that will ask you to respond (via text) once you have taken your medication. What do you want this text message to say?



APPENDIX J. CONFIDENTIALITY TOOL

Tips for Protecting Cell Phone Privacy

» **Want to password protect your phone?**

Most phones will allow you to “lock” your phone to prevent others from opening and reading your texts and other information. For most phones, the Settings menu gives you options for choosing a password, fingerprint lock, or face recognition.

» **Want to stop having your text message show up on the screen?**

Some phones display a preview of a recently received text message on the screen. If you would like to turn this off, look in the Settings menu under “Notifications,” or in the Settings of the text messaging app.

» **Want to stop getting a paper bill in the mail?**

Because the automated text messages come from a five-digit number instead of a traditional ten-digit number, someone seeing your bill may ask you about it. Not getting a paper bill in the mail anymore would limit this possibility.

Cell phone company websites usually allow you to create a log-in and select the option for paperless billing. You will then get an email or text reminder when your bill is posted online.

You can also call your cell phone company customer service line to activate paperless billing.