BMJ Open Assessing preferences for HIV preexposure prophylaxis (PrEP) delivery services via online pharmacies in Kenya: protocol for a discrete choice experiment

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ABSTRACT

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Correspondence to Yilin Chen; ylchen95@uw.edu **Introduction** Pre-exposure prophylaxis (PrEP) is highly effective at preventing HIV acquisition, but coverage remains low in high prevalence settings. Initiating and continuing PrEP via online pharmacies is a promising strategy to expand PrEP uptake but little is known about user preferences for this strategy. We describe methods for a discrete choice experiment (DCE) to assess preferences for PrEP delivery from an online pharmacy.

Methods and analysis This cross-sectional study is conducted in Nairobi, Kenya, in partnership with MYDAWA, a private online pharmacy retailer with a planned sample size of >400 participants. Eligibility criteria are: ≥18 years, not known HIV-positive and interested in PrEP. Initial DCE attributes and levels were developed via literature review and stakeholder meetings. We conducted cognitive interviews to assess participant understanding of the DCE survey and refined the design. The final DCE used a D-efficient design and contained four attributes: PrEP eligibility assessment, HIV test type, clinical consultation type and user support options. Participants are presented with eight scenarios consisting of two hypothetical PrEP delivery services. The survey was piloted among 20 participants before being advertised on the MYDAWA website on pages displaying products indicating HIV risk (eq, HIV self-test kits). Interested participants call a study number and those screened eligible meet a research assistant in a convenient location to complete the survey. The DCE will be analysed using a conditional logit model to assess average preferences and mixed logit and latent class models to evaluate preference heterogeneity among subaroups.

Ethics and dissemination This study was approved by the University of Washington Human Research Ethics Committee (STUDY00014011), the Kenya Medical Research Institute, Nairobi County (EOP/NMS/HS/128) and the Scientific and Ethics Review Unit in Kenya (KEMRI/ RES/7/3/1). Participation in the DCE is voluntary and subject to completion of an electronic informed consent. Findings will be shared at international conferences and peer-reviewed publications, and via engagement meetings with stakeholders.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This study uses a discrete choice experiment (DCE) to elicit the user preferences on initiating and continuing pre-exposure prophylaxis (PrEP) from an online pharmacy in Kenya.
- ⇒ DCE results will provide a quantitative assessment of how users value different characteristics of an online PrEP delivery model; this can inform the design of online HIV PrEP delivery programmes to optimise uptake.
- ⇒ We are collecting information on the willingnessto-pay for each component of online PrEP services, which can inform policy decisions and resource allocation.
- ⇒ DCE scenarios are hypothetical, and individuals' stated preferences may not represent their actual choices in real-world settings.
- ⇒ Online PrEP delivery requires access to the internet and ability to pay for HIV self-testing and PrEP delivery services; therefore, this platform is designed for the growing middle class in Kenya, but other PrEP service delivery strategies are needed to reach those with low-income and/or lack of internet access.

INTRODUCTION

Kenya has one of the largest HIV epidemics globally, with a national prevalence of 4.2%.¹⁻³ Despite significant strides in HIV prevention, approximately 32000 new HIV infections occurred in Kenya in 2021.⁴ Pre-exposure prophylaxis (PrEP) is highly effective at preventing HIV acquisition and is recommended by the WHO and the Kenya Ministry of Health for persons at risk of HIV.⁵ However, PrEP coverage remains low among those with risk indications.⁶ ⁷ Currently, PrEP is mainly delivered through healthcare facilities and barriers to widespread use include long wait times and travel distance, limited hours of operation, privacy concerns, stigma and understaffing.^{8 9} Additionally, PrEP demonstration projects in East Africa have found low PrEP retention among those who initiate PrEP at clinics, due in part to challenges returning to the clinic for frequent continuation visits.^{10 11}

Initiating and continuing PrEP online is a novel approach that could expand PrEP coverage to individuals not accessing clinic-based PrEP and improve PrEP continuation.¹² Delivery of PrEP services closer to the client can reduce opportunity costs associated with clinic-based PrEP provision. A growing telehealth ecosystem in sub-Saharan Africa, recently expanded due to the COVID-19 pandemic, provides private and convenient options for remote consultation, purchasing and delivery of medications to patients.^{13–15} Coupled with Kenya's national commitment to PrEP roll-out, online PrEP delivery is a promising strategy to expand PrEP access. Our team is currently conducting a pilot study of the first online care model for PrEP delivery (NCT05377138) through collaboration with Kenya's first e-pharmacy retailer MYDAWA.¹⁶

Successful PrEP scale up requires an understanding of user preferences to tailor services to optimise uptake, adherence and retention. There are several potential options for structuring PrEP delivery services via an online pharmacy including the use of different HIV testing modalities and user support options. As online PrEP delivery is not yet available in Kenya, user preferences for components of this service are unknown. Discrete Choice Experiments (DCEs) are an ideal method for assessing user preferences in cases when there is no observed behaviour. With a foundation in economic theory, DCEs assume that individuals choose the service that maximises their expected benefit.¹⁷ DCEs evaluate how individuals value selected features of a service by repeatedly asking them to choose between different sets of hypothetical alternatives. Resulting data can provide a quantitative assessment of user preferences including the relative importance of each attribute and likelihood of service uptake, which can help inform policy decisions and resource allocation. DCEs have been applied to a range of health policy decisions and are increasingly used to assess preferences for PrEP services. Prior DCEs assessing PrEP have examined user preferences for dosing regimen, type of PrEP products, side effects, cost, dispensing venue, and support services.¹⁸⁻²³ However, this is the first study to assess user preferences for online PrEP (ePrEP) delivery.

Here we describe the design and methods from our ongoing DCE to assess user preferences for PrEP delivery from an online pharmacy in Kenya. This study adds to the small but growing literature of DCE protocols for HIV prevention^{24–28} and additionally provides detailed information on DCE attribute selection and refinement, materials used for staff training and methods for participant recruitment. The methods described along with slide decks of training materials and survey guides can assist other researchers interested in designing DCEs for HIV prevention. The results of this DCE can inform the design

of online PrEP delivery models to increase PrEP uptake among persons at risk of HIV.

METHODS AND ANALYSIS Setting and participants

This study is conducted in Nairobi, Kenya, in partnership with MYDAWA, Kenya's first licensed online pharmacy.^{29 30} MYDAWA's online platform provides affordable access to wellness products, prescription and over-the-counter medicines delivered directly to the consumer, including products related to sexual health (eg, HIV self-test kits and emergency contraception). The majority of MYDA-WA's customer base is located in Nairobi.^{16 29} Our target population is selected to closely mirror persons who would likely be clients of ePrEP delivery. Inclusion criteria are: age ≥ 18 years, not known to be HIV-positive, interested in PrEP, and able and willing to provide informed consent.

Patient and public involvement

We developed the care pathway for online PrEP service delivery in collaboration with Kenyan stakeholders, including members from the Ministry of Health, implementing organisations, researchers and professional organisations. We refined the list of attributes and levels via stakeholder discussions with individuals in Kenya with expertise in HIV prevention and PrEP delivery and representatives from MYDAWA. We plan to share study findings with both local and international audiences. We will disseminate results at engagement meetings with key informants including Kenya's National AIDS and STIs Control Programme (NASCOP), patients groups, service providers, and other stakeholders.

Care pathway for online PrEP service delivery

We collaboratively developed a care pathway for online PrEP service delivery, based on an ongoing model of pharmacy-based PrEP service delivery in Kenya.³¹ The core components are: (1) PrEP eligibility assessment: Based on NASCOP PrEP Rapid Assessment Screening Tool, routinely used at public clinics in Kenya to assess HIV risk and PrEP eligibility; (2) HIV testing: Individuals who are potentially eligible for PrEP complete an HIV test to ensure they are HIV-negative prior to starting PrEP; (3) Clinical consultation and PrEP prescribing: Individuals testing HIV-negative undergo a medical risk assessment with a clinical officer to ensure PrEP is safe for them and receive a PrEP prescription; (4) PrEP delivery: A 1-month supply of PrEP is delivered to a setting of the client's choice at initiation. For all future refills, clients receive a 3-month PrEP supply, consistent with the guidelines for PrEP dispensing at public clinics in Kenya. Clients complete the HIV testing process described above prior to each refill visit; and (5) PrEP support: Individuals can opt-in to receive ongoing support to answer questions about PrEP use and to report concerns and side effects. Each step in the care pathway for online PrEP delivery can



Figure 1 Study design flowchart. DCE, discrete choice experiment; ePrEP, online PrEP; PrEP, pre-exposure prophylaxis.

be optimised to align with user preferences and was evaluated for inclusion in the final DCE.

Overview of DCE approach

DCE participants are presented with scenarios consisting of two or more hypothetical services with different characteristics or 'attributes' with varying 'levels' and are asked to choose their preferred services. Surveys generally contain 7–10 scenarios with different levels for each attribute. The experimental design determines the scenario pairs and the series of questions presented to participants. Analysis of DCEs can quantify the impact of each aspect of a service on participants' preference and assess the trade-offs they are willing to make to obtain their preferred service.

Design and administration of the DCE is divided into several stages (figure 1): (1) formative stage, (2) refinement stage, (3) experimental design, (4) survey administration and (5) data analysis and dissemination. First, in the formative stage, we selected attributes and levels for the DCE and developed survey questions to accompany the DCE. Second, in the refinement stage, we conducted cognitive interviews to assess participant understanding of the hypothetical scenarios and associated illustrations (see online supplemental file 1 (cognitive interview guide) and online supplemental file 2 (staff training materials)). We refined our DCE attributes and levels based on participant feedback. In the third stage, we developed the experimental design using a D-optimal design with eight choice tasks per participant. Our study design followed

The Professional Society for Health Economics and Outcomes Research (ISPOR) Good Research Practice for Conjoint Analysis.³² We piloted the DCE to estimate the time needed to complete the questionnaire and assess participant fatigue. The survey administration adopts a hybrid approach, including in-person administration by research assistants or self-administration by online participants to achieve sufficient sample size and reach our target population more efficiently. Finally, we conduct data analysis to estimate average preferences of each attribute level and explore heterogeneity of responses.

Software

We use Research Electronic Data Capture (REDCap) electronic data capture tools hosted at the University of Washington for screening and informed consent data.³³ The DCE questionnaire is programmed in Sawtooth Software's Lighthouse Studio modules for general questionnaires and choice-based conjoint scenario designs, and hosted on the Sawtooth servers.³⁴ We contacted a Sawtooth representative and obtained the software at a discounted price. Screening and informed consent forms are constructed as separate, chained surveys in REDCap. Completion and submission of informed consent forms via REDCap directs online participants to the Sawtooth questionnaire via an external link for online participants. DCE questionnaires are administered via Sawtooth's offline data capture application for in-person participants.

Attribute and description	Levels
PrEP eligibility assessment (Method for conducting client eligibility assessment for PrEP)	1. Online self-assessment using screening questions (phone number provided in case of questions)
	2. Guided assessment with a remote clinical provider (via a phone call or WhatsApp)
HIV test type (Type of HIV test delivered for PrEP initiation)	1. Oral fluid HIV self-test (at setting of your choice)
	2. Blood-based HIV self-test (at setting of your choice)
	3. Provider administers HIV Test at setting of your choice (blood-based)
Clinical consultation for prescribing PrEP (Consultation needed to prescribe PrEP)	1. Remote clinical consultation with provider (via a phone call or video chat)
	2. In-person clinical consultation with provider after completing HIV test (at a setting of your choice)
User support options for PrEP (Method for discussing your questions for PrEP with a healthcare provider)	1. Short messaging service
	2. Phone/video call
	3. Email
DCE discrete choice experime	nt: PrEP pre-exposure prophylaxis

DCE, discrete choice experiment; PrEP, pre-exposure prophylaxis.

DCE procedures

Stage I: formative phase—selection of attributes and levels, development of data collection instruments, training *Collaborative attribute and level selection*

We developed an initial list of attributes and levels based on the care pathways of the ePrEP delivery model and a review of the PrEP literature.^{5 7 35–37} This list was refined during stakeholder discussions with individuals in Kenya with expertise in HIV prevention and PrEP delivery and representatives from MYDAWA. Five attributes were included in the formative list: PrEP eligibility assessment, HIV test type, clinical consultation, user support options and cost of PrEP delivery. Each attribute consists of two to three levels (table 1).

Questionnaire development

We developed a survey to accompany the DCE which includes the following: PrEP eligibility assessment, PrEP interest and knowledge, online pharmacy and HIV testing interest, knowledge and engagement, and participant demographics, and sexual behaviour (see online supplemental file 3 for survey questionnaire). We also assessed maximum willingness to pay (WTP) for different components of online PrEP delivery including both oral and blood-based HIV self-testing, remote clinical encounter and delivery of PrEP drugs. The

Which of these two options for online PrEP delivery would you most prefer (1 of 8)



Figure 2 Example of DCE choice task. DCE, discrete choice experiment; PrEP, pre-exposure prophylaxis; SMS, short messaging service.

structure of the WTP questions was informed by a literature review.^{38–40} The DCE begins with a brief overview of DCEs, definition of attributes and levels. Participants then complete the choice tasks. For each DCE scenario, participants are first asked to choose their preferred service followed by an opt-out question: 'Would you choose to get PrEP using this service if it were available?' (figure 2).

Staff training

We conducted a training with study investigators, data mangers and in-country research staff responsible for administering the survey; it was held over Zoom split over two half-day sessions to accommodate the time difference between Seattle and Kenya. The training consisted of presentations on the background of HIV in Kenya, the role of PrEP for HIV prevention, barriers to accessing PrEP via current delivery modalities and the potential ePrEP delivery to increase PrEP coverage. On the first day, we explained the DCE administration, including the REDCap pre-screening form, process for scheduling in-person visits, REDCap e-consent forms, and the Sawtooth survey. On the second day, we discussed the process for conducting cognitive interviews and piloting and launching the DCE. Study staff practiced administering the cognitive interviews and DCE instruments in groups of two and provided feedback on study instruments (see online supplemental file 2 for slide deck and training materials).

Stage II: refinement of DCE attributes and levels, and cognitive interviews

DCE image design and cognitive interviews

We used images to pair with each level of DCE attributes to make the survey more engaging and understandable. Most of the images were adapted from the Noun Project, a free online image bank.⁴¹ We chose simple images to minimise the possibility of biasing participants. For example, images of healthcare providers are depicted with neutral expressions and their gender is not specified. In addition, images of fingerpicks for HIV testing scenarios are not portrayed with big needles or large amounts of blood.

Cognitive interviews

We recruited individuals from the HIV research community in Kenya for cognitive interviews to assess the clarity of DCE images, scenarios and WTP questions (see online supplemental file 1 for cognitive interview guide). Participants were asked to interpret each attribute image and assess its accuracy in conveying the specified DCE level. They were then presented with alternative images for each attribute and asked if any were a better match for the attribute description than the current image. The cognitive interviews also presented participants with two example DCE choice tasks to assess their understanding of the scenarios and ease of completion. Additionally, we assessed participants' understanding of WTP questions. We initially sought to audio-record the cognitive interviews but after consultation with the in-country staff, decided that it may hinder participants' ability to speak freely; therefore, study staff took notes during the interviews.

Stage III: experimental design and pilot testing

We used a D-efficient design to construct the DCE.³² The algorithm behind this design identifies the subset of the most meaningful comparisons across profiles from all possible choice tasks—1296 (ie, $(2\times3\times2\times3)^2$ in our study.⁴² The design enhances data efficiency and attempts to balance statistical power and sample size.⁴³ ⁴⁴ First, we considered the complete specification of the utility functions based on the chosen attributes and levels and multinomial logit as the analytical model.⁴² We defined a main-effects utility function for each of the two alternatives in a choice task. The structure for the *i*-th utility function, *U* is defined as:

$$U_i = V(\beta, X_i) + \epsilon_i$$
$$V(\beta, X_i) = \beta_1 * X_1 + \dots + \beta_k * X_k$$

Where $V(\beta, X_i)$ is the deterministic portion of the utility and a function of the *k* attribute-levels considered in the alternative; the β coefficients represent the average preference weight that the sample places on each attributelevel. The error term, ϵ_i , indicates the inability to perfectly measure the utility of each alternative, which is consistent with random utility theory. We did not use priors for the utility-function coefficients since none of the selected attributes had a natural order (ie, an ascending order example is 'pain' as we assume that most people prefer low to high pain).

Each scenario consists of a forced-choice task, followed by an opt-out question: 'Would you choose to get PrEP using this service if it were available?' (figure 2).⁴⁵ The goal of the opt-out option was to represent the status quo where participants can decide against uptake of a new product.⁴⁶ This format allows us to gather data about user preferences while not drawing too much attention to the opt-out. Studies suggest potential for cognitive biases to preserve the status quo in three-alternative choice tasks.^{47 48}

Sample size

The DCE literature has not yet reached a consensus on the best method to estimate the sample size required to return meaningful, statistically robust parameter estimates.⁴⁹⁵⁰ Some experts suggest using a minimum sample size of 300.⁴⁹ Johnson and Orme provide another rule of thumb using an equation that considers the number of choice questions, alternative scenarios presented and attributes and levels.⁵⁰⁵¹ Additionally, the more tasks per participant, the smaller sample size required to achieve comparable levels of uncertainty in coefficients. During the formative phase of our study, most participants stated that they could answer between 7 and 10 choice tasks before becoming fatigued.

A criticism to rules of thumb for DCE sample estimation is the lack of robustness to different product characteristics or consumers behaviour.⁵² Given this uncertainty, we implemented a scenario analysis considering all possible tasks per participant, from 6 to 10 with a sample size varying from 200 to 500 in 50 increments. For each scenario, we evaluated the standard error (SE) of coefficients and the D-efficiency measure for the overall design. We found that improvements were diminishing above a sample size of 350. Therefore, we chose a design with 8 choice tasks per participant and a sample size of 400, which had an expected standard deviation (SD) of 0.049 per coefficient. This sample size was slightly higher than 350 to account for the possibility of preference heterogeneity and incomplete DCE surveys.^{32 53}

Stage IV: pilot testing, DCE recruitment and administration *Pilot testing and survey refinement*

After revising the DCE survey based on feedback from the cognitive interviews, we piloted it in two phases. First, we administered the survey to individuals from the HIV research community in Kenya. Based on participants' feedback, we found the cost attribute seemed to be a strong driver of participant preferences, with many participants selecting the cheaper PrEP service regardless of other attributes. To avoid the possibility of having one attribute overwhelming participant decision-making, we removed the cost attribute from the final version of the DCE and instead assessed cost preferences only through direct WTP questions (table 1). Additionally, we moved the DCE scenario questions to the beginning of the survey to minimise participant fatigue. Since several participants expressed hesitancy in answering sensitive sexual behaviour questions at the beginning of the survey, we moved these questions to the end to provide increased opportunity for staff to develop rapport with participants; we also gave participants the option of self-administering these questions by taking the tablet and filling out this section on their own. Finally, participants found the DCE eligibility questions from the HIV Risk Assessment Tool to be invasive and too sensitive to answer over the phone, so we revised the pre-screening process to only ask if participants are interested in obtaining PrEP. In the second phase, we piloted the survey to 20 individuals recruited through the MYDAWA platform using study eligibility criteria. We assessed data quality, survey flow and time needed for survey administration.

Recruitment

Similar to other DCEs in the literature, we use online recruitment strategies.^{23 24} Participants are recruited through banner advertisements on the MYDAWA online pharmacy website. To target persons at risk of HIV acquisition, only those who click on HIV self-test kits on the MYDAWA platform see the online recruitment banners. In addition, persons who purchase HIV self-test kits (HIVSTs) from MYDAWA are mailed a flyer with their purchases that advertises the DCE (see online supplemental file 4 for the recruitment banner). We are also planning to expand DCE recruitment by advertising on social media pages that provide information on HIV prevention as well as through the MYDAWA call in centre where persons can access support related to sexually transmitted infection purchases.

Survey administration

Interested participants can voice call or send an short messaging service to the study phone number provided on recruitment materials. Study staff assess eligibility via a phone pre-screening and schedule time to meet participants at a convenient location to complete the survey (see online supplemental file 5 for the pre-screening script). Participants are reimbursed 1000 Kenyan shilling (US\$8.70) for their time. The in-person data collection was initiated on 1 June 2022 and expected to be completed by 28 February 2023. We plan to launch the online selfadministered DCE after we finish data collection for the in-person component. For the online DCE, participants will follow the DCE link on the recruitment banner to an online screening tool, self-administered via REDCap survey. Once the screening survey is submitted, eligible participants will automatically be directed to complete online consent forms via REDCap, and subsequently the DCE questionnaire via Sawtooth.

Stage V: data management and data analysis

Data are stored in a central location on the Sawtooth administration site which allows users to examine survey responses or download a csv file for further analysis. We monitor data quality on a weekly basis, including checking number of interviews, duplicate entries, incomplete surveys, and substantial missingness or outliers in responses (see online supplemental file 6 for R script used for data management).

To analyse the data, we will fit a conditional logit model with an alternative specific constant for the opt-out. The coefficients (ie, preference weights) represent the average relative utility for each attribute-level, compared with the reference. 54 55 In addition, we will generate a ranking of importance across attributes calculated as the ratio of their preference weights over the preference weights of the attribute with the lowest impact in the decision-making process (ie, the attribute with the lowest preference weights). This ranking will provide information about the relative importance of each attribute, and respondents' willingness to trade one attribute for another. We will conduct a two-part analysis for the main model: First, we will analyse only the forced-choice data (ie, ignoring the opt-out question), and second, we will use a mixed logit regression model (ie, random parameters logit) to account for preferences' heterogeneity in all coefficients. We will qualitatively assess if our conclusions are consistent in both analyses and compare the goodness of fit of the models using Akaike information criteria (AIC) and Bayesian information criteria (BIC).

Further, we will elicit preference heterogeneity by participant demographics and other characteristics. Latent class analysis will be performed to examine variation in preference by using the data to identify groups of respondents with similar preferences.⁵⁶ We will fit 2–10 classes and assess the goodness of fit of each one using McFadden's pseudo $\mathbb{R}^{2,54}$ log likelihood test and adjusted-AIC and adjusted-BIC. In a scenario in which a covariate is an important predictor of class membership, we will assess its potential impact as an effect modifier and assess the results separately for each category of the covariate.

Descriptive analysis will be conducted to summarise participants' demographic characteristics, sexual behaviours, WTP for online PrEP services, and online pharmacy interest/engagement. Data analysis will be conducted using Sawtooth's built-in analysis capabilities and R Version 4.1.2.

ETHICS AND DISSEMINATION Ethics considerations

This study was approved by the University of the Washington Human Research Ethics Committee (STUDY00014011), the Kenya Medical Research Institute (KEMRI), Nairobi County (EOP/NMS/HS/128) and the Scientific and Ethics Review Unit (SERU) in Kenya (KEMRI/RES/7/3/1). Participation in the DCE is voluntary and subject to completion of an electronic informed consent. Respondents' personal information is kept secure and confidential. Participants are not required to use their real names and we do not collect any identifiable

information. Participants are told that they can withdraw from the survey at any time.

Dissemination

Findings will be shared at international conferences and peer-reviewed publications. We will disseminate results at engagement meetings with key informants including Kenya's NASCOP and other stakeholders. Preliminary results will be used to inform the design of the ePrEP Kenya Pilot study (NCT05377138) which will evaluate uptake and continuation rates for online PrEP delivery via MYDAWA in Nairobi, Kenya. Our results can be used to design online PrEP delivery models to optimise PrEP uptake in Kenya and similar settings.

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Supplement 1: Cognitive Interview Guide

Online-pharmacy for the delivery of pre-exposure prophylaxis (PrEP) medicines

Discrete Choice Experiment

Cognitive Interview

Introduction

Thank you for taking the time to speak with me. My name is ______. We would like to speak to you about pre-exposure prophylaxis or PrEP. PrEP is a medicine you can take to reduce your risk of getting HIV. We have asked you to participate in this exercise because we are interested in learning how best to delivery PrEP using an online pharmacy. This means a pharmacy will deliver PrEP medication to clients using a courier, so clients do not need to travel to a pharmacy. The aim of this session is to ask you about pictures that are related to PrEP delivery and how they can be improved for our survey instrument. We will also ask you for feedback about other section of our survey to make sure they are clear. This interview should take about 60 minutes. If it's OK with you, I would like to record the interview, so I don't miss any important details in your answers. Feel free to let me know if you need a break at any time. You can also stop the interview if you do not want to continue. Before we begin do you have any questions? Can I start recording?

[Prompt: Start recording]

Part 1. Presentation of Attributes and Levels

Online PrEP delivery includes different services, including an assessment to determine if you are at HIV risk, HIV testing to confirm you are HIV-negative, and talking to a medical provider to make sure PrEP is safe for you.

We will describe the characteristics of obtaining PrEP through online pharmacy in the order you would experience them.

Part 1, a.

PrEP Eligibility Assessment [No need to read the header out loud]

Please tell me how you would interpret these images. [Show the images. Alternative text: What do these images mean to you?]



Now I'm going to read you the description and possible ways to have a PrEP Eligibility assessment

PrEP Eligibility Assessment

First, you would complete an **eligibility assessment** to see if PrEP is a good fit for you. This is done by answering questions about your sexual behavior and partners. You can do this in **two ways**: One way is with a provider asking you these questions over the phone or WhatsApp.



The second way is by answering these questions by yourself on your computer or phone. You will have a phone number to call in case of questions.



Questions:

- Is the description of "PrEP eligibility Assessment" clear to you? [If necessary, read the description again]
 - Is there any other information we should include to make the description clearer?
- Do the images represent the descriptions well? How could we modify the image to make it clearer?
 - o Do you think another person would understand the meaning of this image?
- Are there other ways to assess PrEP eligibility that you think we should include?

Part 1, b.

HIV Test Type [No need to read the header out loud]

Please tell me what you think these images mean. [Show the images]



Now I'm going to read you the description and possible ways to have an HIV Test

HIV Test Type

Next you would take an HIV test to make sure you are HIV-negative before starting PrEP. You can test for HIV in one of 3 ways.

One way is to have a healthcare provider meet you at a setting of your choice to conduct HIV test by taking blood from your finger.



The second way is testing yourself using an HIV self-test kit that uses oral fluid that you collect by swabbing your cheek and gums.



And the third way is testing yourself using a HIV self-test kit that uses blood that you collect from your finger (through a finger prick). Both self-testing kits would be delivered to a setting of your choice and would show a test result after about 20 minutes.



Questions:

- Is the description of "HIV Test Type" clear to you?
 - Is there any other information we should include to make the description clearer?
- Do the images represent the descriptions well? How could we modify the image to make it clearer?
 - Do you think another person would understand the meaning of this image?
- Are there other HIV Test Types that you think we should include?

Is any of the following images a better match for the descriptions I showed you before?

[Repeat the description of the ways to obtain HIV Test if necessary]



Part 1, c.

Clinical Consultation [No need to read the header out loud]

Please tell me how you would interpret these images. [Show the images]



Now I'm going to read you the description and different possible ways to have a Clinical Consultation

Clinical Consultation

You would then have a clinical consultation with a medical provider to make sure PrEP is safe for you to use. This can be done over the phone or a video chat.



Another option is to see a provider in person at a setting of your choice.



Questions:

- Is the description of "Clinical Consultation" clear to you?
 - Is there any other information we should include to make the description clearer?
- Do the images represent the descriptions well? How could we modify the image to make it clearer?
 - Do you think another person would understand the meaning of this image?
- Are there other ways to provide Clinical consultation that you think we should include?

Is any of the following images a better match for the descriptions I showed you before? [Repeat the description of the ways to provide Clinical Consultation if necessary]



Part 1, d.

User Support Options [No need to read the header out loud]

Please tell me how you would interpret these images. [Show the images]



Now I'm going to read you the description and different ways to get User Support

User Support Options

In case you have any questions about PrEP, there are three different options for you to discuss your questions with a healthcare provider. The first is using SMS to talk to a provider.



The second option is talking to a provider over the phone, using either voice or video call.



The third is using email to talk to a provider.



Questions:

- Is the description of "User Support Options" clear to you?
 - Is there any other information we should include to make the description clearer?
- Do the images represent the descriptions well? How could we modify the image to make it clearer?
 - \circ Do you think another person would understand the meaning of this image?
- Are there other ways to provide user support that you think we should include?

Is any of the following images a better match for the descriptions I showed you before? [Repeat the description of the ways to provide User Support if necessary]



Part 1, e. Summary Table

Characteristics Description	Option 1	Option 2	Option 3
PrEP eligibility assessment Method for conducting client eligibility assessment for PrEP	Online self-assessment on your computer or phone using screening questions (phone number in case of questions)	Guided assessment with a remote clinical provider (via a phone call or WhatsApp)	
HIV test type Type of HIV test delivered for PrEP initiation	Oral-fluid HIV self-test (at setting of your choice)	Blood-based HIV self-test (at setting of your choice)	Provider-administered blood-based rapid diagnostic test (at setting of your choice)
Clinical consultation for prescribing PrEP Clinical consultation needed to prescribe PrEP	Remote clinical consultation with provider (via a phone call or video chat)	In-person clinical consultation with provider after completing HIV testing (at a setting of your choice)	
User support options for PrEP Method for discussing your questions for PrEP with a healthcare provider	SMS	Phone/video call	Email

Questions:

We want to make sure we have included all the characteristics of online PrEP delivery that would be important to you

- Are any of the characteristics of PrEP delivery that we showed you today not important or don't add relevant information?
- Is there anything else about an online PrEP delivery service that would be important to you that we did not ask you about?

Part 2. DCE Choice Task Example

First Take:

I will now ask you about how you would like to get PrEP from an online pharmacy. Please remember there are no wrong answers, we want to know your preferences. When answering each scenario, imagine that you are planning to get PrEP using an online pharmacy.

When making your choice, please consider ONLY the characteristics shown.



Which of these two options for online PrEP delivery would you most prefer?

Questions:

- How hard did you find this exercise?
- How could we modify the exercise to make it easier?
- Do you think another person would understand this exercise?
- Is there anything in the question for the exercise that we should modify to make it clearer? [If necessary, read the question again "Which of these two options for online PrEP delivery would you most prefer?"]
- When I said, "When making your choice, please consider ONLY the characteristics I presented before.", what does that mean to you? [The objective of that sentence is to ignore any other characteristics of online pharmacy (e.g., the brand of the drug or the company providing the service) that are not included in the table. Check if the participant understood that.]
- Can you tell me how you made your decision? [Check if the participant is paying attention to all characteristics, if he doesn't mention one, ask about it. For example: I noticed you didn't mention "Clinical consultation", did you consider the option for that characteristic?"]

Second take:

I will now ask you about how you would like to get PrEP from an online pharmacy. Please remember there are no wrong answers, we want to know your preferences. When answering each scenario, imagine that you are planning to get PrEP using an online pharmacy. I will also ask you if you would choose to get PrEP using the option you selected. If you would not choose to get PrEP if only these two options were available, you can answer no to this question.

When making your choice, please consider ONLY the characteristics shown



Which of these two options for online PrEP delivery would you most prefer?

Questions:

- How different was this time choosing an alternative compared to the first time? [Now the participant has the option to say if they would choose to get PrEP based on their previous selection or not]
- Was does the question "Would you choose to get PrEP using this service if it were available?" mean in your own words? What do you think is asking from you?
 - Our goal in asking this question is to understand if you would really choose to get this service if it were available to you. Do you think the question is clearly asking that?
 - If not, how can we make this question clearer? [If participant said they don't know, that's fine, move to the next section]
- How many of these tasks do you think you could answer before getting tired and/or bored?

Part c. Willingness to Pay Questions

The next set of questions will ask about how much you would like to pay for different parts of online PrEP delivery. For each part, please provide the lowest price, the maximum price and the ideal price you are willing to pay. For the lowest price, please tell us the lowest amount you think the service should cost because otherwise you would be concerned about its quality, and you would not purchase the service. In answering these questions, please consider your usual expenses. Remember that there are no right or wrong answers. We're interested in your preference. You can write zero if you feel that most accurately reflects your preference.

For a blood-based HIV self-test, delivered via a co (one-time cost):	ourier to a location of your choice
What is the lowest price you are willing to pay?	KSH
What is the highest price you are willing to pay?	KSH
What price do you consider ideal?	

For an oral HIV self-test, delivered via a courier to a location of your choice (one-time cost):

What is the lowest price you are willing t	o pay?	KSH
What is the highest price you are willing	to pay?	KSH
What price do you consider ideal?	KSH	

For remote/online clinical consultation to obtain a prescription for PrEP based on your HIV self-test results (one-time cost):

What is the lowest price you are wi	lling to pay?	KSH
What is the highest price you are w	villing to pay?	KSH
What price do you consider ideal?	KSH	

For delivery of PrEP medicines (delivery fee plus 1 month supply of medicines):

What is the lowest price you are willing to	pay? KSH	
What is the highest price you are willing to	pay?	H
What price do you consider ideal?	KSH	

Questions:

- Overall, is it clear what the objective of the questions is? Would you mind explaining it to me in your own words?
- Please select one of the questions and give your answers. Would you explain me how did you select the amounts?

[Pay attention to the order in which the participant finds the amounts. Which one comes first, the ideal, the lowest, or the highest?]

- \circ $\,$ In this process, did you consider your usual expenses on medicines or healthcare?
- What other expenses did you consider, if any?
- Did you consider the cost options presented in the previous section?
- Is the instruction "For the lowest price, please tell us the lowest amount you think the service should cost because otherwise you would be concerned about its quality, and you would not purchase the service." clear enough? Would you tell me in your own words what does it mean?
 - Would you be concerned about the quality of a product that is free? Why or why not?
- Do you think that all questions are unique or some of them ask for the same information as others?

End of the interview

Do you have any questions or final thoughts you would like to share?

Thank you very much for your time and dedication in giving me your answers, I'm sure your information will help us create a better survey.

[Stop the recording]

Supplement 2: Training Materials

EPharmacy PrEP: Pilot Study Discrete Choice Experiment Training

24th-25th January 2022



BMJ Open

Introductions





Overview of this session

- PrEP
- PrEP delivery strategies
- ePharmacy PrEP delivery
- Discrete Choice Experiments

What is **PrEP**?

- PrEP is safe in pregnancy and for breastfeeding mothers
- It takes approximately **SEVEN** days after starting treatment for PrEP to be optimally effective.
- With poor adherence effectiveness becomes lower

Recommended medication for PrEP use

PREFERRED	ALTERNATIVE
Tenofovir (TDF) + Emtricitabine (FTC) 300mg 200mg	Tenofovir (TDF) 300 mg
	Tenofovir (TDF) + Lamivudine (3TC)
	300mg 300mg
Does PrEP have side effects?

PrEP side effects

No major safety issues have been observed with use of PrEP.

About 1 in 10 people who use PrEP experience **minor**, **temporary** side effects, such as:

- Headache
- Weight loss
- Nausea
- Vomiting
- Abdominal discomfort

If side effects occur, they typically **start in the first few days or weeks** of PrEP use and **last a few days**—almost always less than 1 month.

References: AVAC (Nov. 2020); Tetteh et al. (2017)

BMJ Open

What PrEP does and doesn't prevent

PrEP reduces risk of getting HIV by at least 90%



PrEP does <u>not</u> prevent sexually transmitted infections (STIs) or pregnancy.

Prospective PrEP users should be advised that if they wish to protect themselves against STIs and/or pregnancy, they should <u>use PrEP in combination with other methods</u>, like condoms and contraception.

Aside from protecting against HIV, does PrEP have any other benefits?

Other PrEP benefits

Additional benefits of PrEP:

- Decreased anxiety or fear of contracting HIV
- Increased sense of empowerment and control over HIV
- Increased sense of pleasure and intimacy during sex
- Increased communication and trust with sex partners

Benefits specific to serodiscordant couples:

- Increased ability to cope with and accept serodiscordance (e.g., sense of solidarity taking daily medication)
- Ability to safely conceive a child

PrEP eligibility criteria



*Specifically, HIV vaccine or HIV prevention studies

Core components



PrEP use over time using retail pharmacies: Pilot study



Challenges with delivering PrEP at retail pharmacies



Can PrEP be delivered through <u>E-pharmacies</u>?

Possible benefits

- Convenient: Clients can get PrEP delivered to their home without having to go to a clinic or pharmacy
- Greater confidentiality (decreased stigma)



Steps for getting PrEP from E-pharmacy

- 1) HIV risk screening
- 2) HIV testing
- 3) Clinical consultation (medical assessment)
- 4) PrEP drugs delivered via courier
- 5) Ongoing user support (clients can talk to a provider to ask questions about their PrEP)



Step 1: HIV Risk assessment

Example questions from the RAST

In the past 6 months, have you had sex without a condom with anyone?			
Select "yes" even if this only happened once in the past 6 months.	Yes	No	🗌 Unsure

Example questions from the RAST

In the <u>past 6 months</u> , have you had sex without a condom with anyone? Select "yes" even if this only happened once in the past 6 months.	Yes	No	Unsure
In the <u>past 6 months</u> , have you been diagnosed with or treated for a sexually transmitted infection (STI)? <i>Examples of sexually transmitted infections include chlamydia and gonorrhea.</i>	🗌 Yes	No	🗌 Unsure

Example questions from the RAST

In the <u>past 6 months</u> , have you had sex without a condom with anyone? Select "yes" even if this only happened once in the past 6 months.	Yes	No	Unsure
In the <u>past 6 months</u> , have you been diagnosed with or treated for a sexually transmitted infection (STI)? <i>Examples of sexually transmitted infections include chlamydia and gonorrhea</i> .	Yes	No	Unsure
Do you have any sex partners who are HIV-positive <u>and</u> : • are not currently taking antiretroviral therapy (ART), • have been taking antiretroviral therapy (ART) for less than 6 months, • have been missing doses of their antiretroviral therapy (ART), • have a detectable HIV viral load, or • the two of you are trying to get pregnant? Select "yes" if any of the above statements are true about any of your sex partners who are HIV- positive.	Yes	□ No	Unsure

Example questions from the RAST

In the <u>past 6 months</u> , have you had sex without a condom with anyone? Select "yes" even if this only happened once in the past 6 months.	Yes	No	Unsure
In the <u>past 6 months</u> , have you been diagnosed with or treated for a sexually transmitted infection (STI)? (STI)? <i>Examples of sexually transmitted infections include chlamydia and gonorrhea</i> .	Yes	No	Unsure
Do you have any sex partners who are HIV-positive <u>and</u> : • are not currently taking antiretroviral therapy (ART), • have been taking antiretroviral therapy (ART) for less than 6 months, • have been missing doses of their antiretroviral therapy (ART), • have a detectable HIV viral load, or • the two of you are trying to get pregnant? Select "yes" if any of the above statements are true about any of your sex partners who are HIV- positive.	Yes	No	Unsure

If client answers "yes" to any RAST question, s/he is considered to have substantial ongoing risk of HIV.

Step 2: HIV testing

Importance of HIV testing

- PrEP is for HIV **prevention**, not treatment.
- Therefore, PrEP is only for **HIV-negative** individuals.
 - HIV-positive individuals should take ART, not PrEP.
 - Starting an HIV-*positive* individual on PrEP could make their HIV virus harder to treat.



So before starting someone on PrEP, it is critical to confirm that they are HIV-negative.

> PrEP users must also get ongoing periodic HIV testing to confirm that they are still HIV-negative (usually every 1-3 months.

HIV testing schedule

Kenya national PrEP guidelines



What is HIVST?

A process whereby an individual collects his or her own specimen (oral fluid or blood), performs an HIV rapid diagnostic test and interprets the result, often in a private setting, either alone or with someone she trusts.

Benefits:

- Promotes access to HIV testing services
- Increases autonomy
- Assures confidentiality/privacy
- Empowers
- Convenient

Step 3: Clinical consultation

Signs & symptoms of acute HIV infection?	Yes	No
Current or past liver disease?	Yes	No
Current or past kidney disease?	Yes	No
Diabetic?	Yes	No

Signs & symptoms of acute HIV infection?	Yes	🗌 No
--	-----	------

Provider asks the client if they have had any high-risk sexual contact **in past month** and subsequently experienced any of the following:

- Fever
- Sore throat
- Muscle or joint pains
- Swollen glands
- Diarrhoea
- Headache

If client answers "yes", provider <u>does not</u> prescribe PrEP. Refers client to clinic.

Current or past liver disease?	Yes	No
--------------------------------	-----	----

Asks if client has ever had problems with their liver, such as hepatitis, cancer, or cirrhosis.

If client answers "yes", provider <u>does not</u> prescribe PrEP. Refers client to clinic.

Current or past kidney disease?	No
---------------------------------	----

Asks if client has ever had problems with their kidneys, such as acute or chronic kidney injury or kidney failure.

If client answers "yes", provider <u>does not</u> prescribe PrEP. Refers client to clinic.

Diabetic?	Yes	No
-----------	-----	----

If client is diabetic, provider does not start PrEP.

• Diabetes is a risk factor for kidney disease. So diabetic clients must be evaluated for kidney disease before starting PrEP.

Provider refers client to clinic

Step 4: PrEP delivery via courier

PrEP delivery

- Delivered by courier to location of client's choice (e.g. home or other location)
- Discreet packaging

Step 5: Ongoing user support

User support

- Client can ask a provider questions about PrEP use, side effects, etc
- Options for user support
 - Phone calls
 - WhatsApp/SMS
 - Email

Pilot study of E-pharmacy PrEP delivery

Online model: pilot study



What are client preferences for E-Pharmacy PrEP delivery?

- Risk assessment
- Clinical consultation
- Type of HIV test
- User support
- Cost

Understanding client preferences can help increase PrEP coverage among those at risk of HIV

Discrete Choice Experiments (DCEs)

- Quantitative method used to understand participants preferences for a service without directly asking them to state their options.
- Participants given a series of alternative hypothetical scenarios with variables or "attributes", each with variations or "levels" and asked to choose their preferred scenario.
- Surveys usually contain 5-10 scenarios.
- Increasingly used in healthcare settings
- Especially useful for new interventions that are not currently available

Why use a DCE instead of a qualitative interview?

 Qualitative interviews to understand preferences for straightforward decisions but DCEs are useful for more complex interventions. DCEs provide quantitative estimate of preferences, estimate trade-offs between preferences Analysis

Preference Weight

Can quantify preferences to determine most important characteristics Can stratify by participant type


Using DCEs to quantify trade-offs



Steps for Conducting a DCE



Attributes and Levels of ePharm DCE

Attribute	Description	Levels
PrEP eligibility assessment	Method for conducting client eligibility assessment for PrEP	 Online self-assessment using screening questions (phone number in case of questions) Guided assessment with a remote clinical provider (via a phone call or WhatsApp)
HIV test type	Type of HIV test delivered for PrEP initiation	 Oral Fluid HIV self-test (at setting of your choice) Blood-based HIV self-test (at setting of your choice) Healthcare provider administers HIV Test at setting of your choice (blood-based)
Clinical consultation for prescribing PrEP	Clinical consultation needed to prescribe PrEP	 Remote clinical consultation with provider (via a phone call or video chat) In-person clinical consultation with provider after completing HIV test (at a setting of your choice)
User support options for PrEP	Method for discussing your questions for PrEP with a healthcare provider	 SMS Phone/video call Email
Cost of PrEP delivery	Total cost of the PrEP delivery visit (including HIV self-test delivery and support, the remote clinician consultation, and PrEP delivery (one month of PrEP)	 500 KES 2000 KES 4000 KES

Virtual PrEP delivery model



🔂 Fee potentially associated with the delivery of this model component

* Implementation strategy likely to be updated with finding on client preferences from the DCE

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EPharmacy PrEP: Pilot Study Discrete Choice Experiment Training

Day 1 Session 2

24th-25th January 2022



Overview of study procedures

- Recruitment
- Pre-screening
- Consent
- Questionnaire administration (in-person)

Recruitment

- Target MYDAWA clients accessing products related to HIV/sexual health
- Banner ads on MYDAWA website, flyers included with product deliveries
- Potential participants will call study phone number or SMS/WhatsApp with the word #GenN if interested



Pre-screening

- Pre-screening will take place by phone
- Study staff will complete REDCap pre-screening data entry form
 - 1. Eligibility assessment
 - 2. Schedule in-person visit

Eligibility criteria

- Participants are eligible to enroll in the study if they are:
 - 1. Age 18 or older
 - 2. HIV-negative or unknown HIV status
 - 3. Respond 'yes' to at least one of eleven screening questions about HIV risk
 - 4. Able and willing to provide informed consent



<		Connected
	ePharmacy PrEP DCE Pre-Screening	
	Select Instrument	
	CE Recruitment and Pre-Screening CRF	

<	Mobile App
	ePharmacy PrEP DCE Pre-Screening
Instru	ment - DCE Recruitment and Pre-Screening CRF
	Jnmodified MOD = Modified NEW = New [BLANK] = Empty te ● Unverified ● Complete ● No data saved
	Select Record
	Create New Record
NEW 🛛	1
NEW @	2

< 1		Connected "micham"
Project: ePharmacy PrEP DCE Pre Instrument: DCE Recruitment and Record: 1		Instrument Controls
Record ID 1		
Introduction:		
exposure prophylaxis or PrEP. PrEP is getting HIV. We would like to learn about from an online pharmacy. This means a courier, so they do not need to travel to a us design new models of PrEP delivery for you in a location of your choice to compl		pre- sk of y you ng a help meet akes
That's great! I'm now going to ask you a fe this study. This will take about 10 minutes	few questions to make sure you are eligible to be s. If you are eligible, I'll schedule a time for someo se that is convenient for you, so you can complete	one
Part 1: Pre-Screening		
What is your age?		<u>^</u>

Introduction:		
exposure prophylaxis or PrEP. PrEP is getting HIV. We would like to learn about from an online pharmacy. This means a courier, so they do not need to travel to a us design new models of PrEP delivery to you in a location of your choice to comp	. I am a research assistant at KEMRI, but what people in your community think about pre- a pill that you can take daily to reduce your risk of ut your preferences for getting PrEP delivered to you a pharmacy will deliver PrEP drugs to clients using a a pharmacy. Hearing about your preferences will help for your community. If you are interested, we will meet blete the survey. The survey is confidential and takes 0 Ksh for your time and effort. Are you interested in	
If NO, thank them for their time and end	the call. If YES, continue below.	
this study. This will take about 10 minute	few questions to make sure you are eligible to be in s. If you are eligible, I'll schedule a time for someone ce that is convenient for you, so you can complete the v questions?	

Eligibility Assessment – Not eligible

What is your age	3?
16	
In completed years	S
them and end th Thank you for re are not eligible fo	sponding to these questions. Unfortunately you or this study. Thank you for your interest, and for
them and end th Thank you for re are not eligible fo	ne call: sponding to these questions. Unfortunately you
them and end th Thank you for re are not eligible fo	ne call: sponding to these questions. Unfortunately you or this study. Thank you for your interest, and for

Eligibility Assessment – Not eligible

K REDCap Mobile App	Connected "micham" (v5.19.17)
What is your age?	
24	1
In completed years	
What was the result of your last HIV test?	
Negative	
O Positive	
O Unknown	
O Never been tested for HIV	
In the past 6 months, do you think you may have been exposed to HIV?	?
For example, you might select "yes" if, during the past 6 months, you:	
 had a condom break, shared needles, syringes, or other equipment to inject drugs, or were sexually assaulted 	

<		Connected "micham" (v5.19.17)
	No	
0	Unsure	
engagii	past 6 months, have you shared needles with anyone while ng in intravenous drug use? te value Yes No Unsure	
them and Thank years not	dividual is NOT eligible for study participation. Please thank nd end the call: you for responding to these questions. Unfortunately you eligible for this study. Thank you for your interest, and for the time to talk with me today.	

Eligibility Assessment – Eligible

K REDCap Mobile App	Connected "micham"
In the past 6 months, do you think you may have been exposed to HIV?	
For example, you might select "yes" if, during the past 6 months, you:	
 had a condom break, shared needles, syringes, or other equipment to inject drugs, or were sexually assaulted *must provide value 	
Yes	
ΟΝο	
O Unsure	
This individual is eligible for study participation. Please continue with scheduling their study visit: Thank you for responding to these questions. You are eligible to participate in the study. Now I will ask you for some information about how to contact you and when and where you would like to schedule your study visit. Someone from our research team will be able to come to meet you at a location that you choose to administer the study survey.	

Eligibility Assessment – Scheduling and Contact Info

K REDCap Mobile App	Connected "micham" (v5.19.17)
Part 2: Scheduling and Contact Information	<u>^</u>
What is your first name? * must provide value	
Enter participant first name	
What is your surname? • must provide value	^
Enter participant surname	
What is the best phone number where we can reach you in case we need to contact you about your upcoming study visit?	

prefer	need to contact you about your upcoming study visit, how do you or to be contacted?
0	Phone call
0	SMS
0	WhatsApp
	and time of scheduled study visit
to adr	eone from our research team will come to a location of your choice Iminister the study survey. Where would you like to meet? ovide value
Enter	er study visit location
Form	Status
Comp	
	Save & Exit Form

Consent procedures

- Research assistant will meet participant with tablet to administer ICF and questionnaire
- eConsent via REDCap app
- Review ICF with participant and answer questions
- Participant signs ICF on tablet

eConsent





eConsent

<		Connected richan (v5.19.17)
	ePharmacy PrEP DCE Conse	ent
	Select Instrument	
Cons	ent	



Sawtooth: types of questions

- Labels to be read
- Multiple-Choice
- Checklist
- Entering a Number or Text or Date
- DCE Scenarios

Sawtooth: labels to be read

- Labels do not require data entry
- Labels will have information for you and/or the participant
- In some cases, labels can be a script that can read aloud to participants

Introduction

Thank you for taking time to talk with me. We would like to speak to you about preexposure prophylaxis or PrEP. PrEP is a medicine you can take to reduce your risk of getting HIV. We have asked you to participate in this survey because we are interested in learning how best to delivery PrEP using an online pharmacy. This means a pharmacy will deliver PrEP medication to clients using a courier, so clients do not need to travel to a pharmacy. We would like to understand your preferences for PrEP delivery through an online pharmacy. This survey should take about 60 minutes. Feel free to let me know if you need a break at any time. You can also stop the survey if you do not want to continue. Before we begin do you have any questions?

For example, in
 Questionnaire:
 Introduction;

Next

Sawtooth: multiple-choice questions

- You can only select one answer
- Example, Questionnaire: Part 1: Eligibility Assessment;

Have you ever been tested for HIV?



Sawtooth: checklist questions

- Here, you may select as many options as you like
- You should select all the answers that apply
- Example,
 Questionnaire: Part
 6: E-Pharmacy
 Engagement and HIV
 Self-Testing

If you were obtaining PrEP from an online pharmacy, you could have other products delivered to you with your PrEP medication. Please indicate if you would be interested in receiving any of the following with your PrEP delivery.

Select all that apply.



Sawtooth: entering numbers

• Entering number examples

Questionnaire: Part 1: Eligibility Assessment;

What is your age in years?

Questionnaire: Part 6: E-Pharmacy Engagement and HIV Self-Testing;

For a blood-based HIV self-test, delivered via a courier to a location of your choice (one-time cost):

What is the lowest price you are willing to p	bay? KSH			
What is the highest price you are willing to pay?				
What price do you consider ideal?	КЅН			

Sawtooth: entering text

- Entering text example
- Text questions will most often appear to clarify "Other"

If you were obtaining PrEP from an online pharmacy, you could have other products delivered to you with your PrEP medication. Please indicate if you would be interested in receiving any of the following with your PrEP delivery.

Select all that apply.



Sawtooth: entering date

- Entering date examples
- Date questions will have drop-down menus

Questionnaire: Part 1: Eligibility Assessment

When was your last HIV test?

Month: June Vear: 2017 V

Questionnaire: Part 2: PrEP Knowledge and Interest

When did you first start taking PrEP?

Month: Please select V Year: Please select V

Sawtooth: required questions

- Almost every question requires an answer
- If you try to move on without providing an answer, a red screen will appear with a reminder that the response is required.



Sawtooth: DCE scenarios

• Explain in the next section

Structure of the Questionnaire

- Introduction
- Part 1: Eligibility Assessment
- Part 2: PrEP Knowledge and Interest
- Part 3: Introduction to Discrete Choice Experiment
- Part 4: Definition of Characteristics
- Part 5: Scenarios
- Part 6: E-Pharmacy Engagement and HIV Self-Testing
- Part 7: Participant Demographics
- Part 8: Sexual Behavior

Structure of the Questionnaire

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Introduction

Introduction

Thank you for taking time to talk with me. We would like to speak to you about preexposure prophylaxis or PrEP. PrEP is a medicine you can take to reduce your risk of getting HIV. We have asked you to participate in this survey because we are interested in learning how best to delivery PrEP using an online pharmacy. This means a pharmacy will deliver PrEP medication to clients using a courier, so clients do not need to travel to a pharmacy. We would like to understand your preferences for PrEP delivery through an online pharmacy. This survey should take about 60 minutes. Feel free to let me know if you need a break at any time. You can also stop the survey if you do not want to continue. Before we begin do you have any questions?

Next

Participant ID

- Participant ID should be entered twice
- Same PTID as ICF links questionnaire responses to ICF

Participant ID			Participant ID		
Please enter participant ID			Please re-enter participant ID		
	Back Next			Back	Next
	0%	100%	0%		100%

Part 1: Eligibility Assessment

Next

• Eligibility assessment to be completed again at time of questionnaire administration

Part 1: Eligibility Assessment

What is your age in years?

Back

In the past 6 months, do you think you may have been exposed to Hiv?
For example, you might select "yes" if, during the past 6 months, you:

had a condom break
shared needles, syringes, or other equipment to inject drugs, or
were sexually assaulted
Yes
No
Unsure

In the past 6 months, have you had sex with more than one person?

O Yes

O No

Unsure

Part 2: PrEP Knowledge and Interest

Part 2: PrEP Knowledge and Interest

Have you ever heard of pre-exposure prophylaxis, or PrEP, for HIV prevention before today?



Structure of the Questionnaire

- Introduction
- Part 1: Eligibility Assessment
- Part 2: PrEP Knowledge and Interest
- Part 3: Introduction to Discrete Choice Experiment
- Part 4: Definition of Characteristics
- Part 5: Scenarios
- Part 6: E-Pharmacy Engagement and HIV Self-Testing
- Part 7: Participant Demographics
- Part 8: Sexual Behavior
Part 3: Introduction to Discrete Choice Experiment

As we mentioned, we're designing a new way to deliver PrEP through an online pharmacy. We would like to understand your preferences to help us design this service. Online PrEP delivery includes different services, including an assessment to determine if you are at risk for HIV, HIV testing to confirm you are HIV-negative, and talking to a medical provider to make sure PrEP is safe for you. To determine your preferences for these services, we will show you a series of **9** scenarios with **2** options for online PrEP service delivery. For each of these scenarios, we will ask you to choose the delivery strategy you most prefer.



Here we describe the characteristics of obtaining PrEP through online pharmacy in the order you would experience them. These are the characteristics we will ask you to consider when making a decision about which option you prefer. Please consider ONLY these characteristics when making your choices.

Clinical Consultation

You would then have a clinical consultation with a medical provider to make sure PrEP is safe for you to use. This can be done over the phone or a video chat.



Another option is to see a provider in person at a setting of your choice.







BMJ Open

Part 5: Scenarios

Which of these two options for online PrEP delivery would you most prefer?





Part 5: Scenarios



Chen Y, et al. BMJ Open 2023; 13:e069195. doi: 10.1136/bmjopen-2022-069195

Part 6: E-Pharmacy Engagement and HIV Self-Testing

• Willingness-to-pay questions

The next set of questions will ask about how much you would like to pay for different parts of online PrEP delivery. For each part, please provide the lowest price, the maximum price and the ideal price you are willing to pay. For the lowest price, please tell us the lowest amount you think the service should cost because otherwise you would be concerned about its quality, and you would not purchase the service. In answering these questions, please consider your usual expenses. Remember that there are no right or wrong answers. We're interested in your preference. You can write zero if you feel that most accurately reflects your preference.

For a blood-based HIV self-test, delivered via a courier to a location of your choice (one-time cost):



Structure of the Questionnaire

- Introduction
- Part 1: Eligibility Assessment
- Part 2: PrEP Knowledge and Interest
- Part 3: Introduction to Discrete Choice Experiment
- Part 4: Definition of Characteristics
- Part 5: Scenarios
- Part 6: E-Pharmacy Engagement and HIV Self-Testing
- Part 7: Participant Demographics
- Part 8: Sexual Behavior

Part 7: Participant Demographics

Part 7: Participant Demographics

What is the highest level of education you have completed?

In what region do you live?

North Eastern

🔵 Nyanza

🔵 Western

Rift Valley

Nairobi

Central

Coast

🔵 Eastern

(\bigcirc	Primary
(\bigcirc	Secondary
(\bigcirc	O Levels
(\bigcirc	A Levels
(\bigcirc	Technical or vocational school
(\bigcirc	University or higher

Part 8: Sexual Behavior

 Prefer not to Part 8: Sexual Behavior answer option

In the last 3 months, have you had a primary sex partner?

(A primary sex partner is a person you have sex with on a regular basis, or someone you consider to be your main partner.)



Prefer not to answer

Submitting data

The questionnaire ends here. Thank you for your responses.

0% 100%

Questions?



ePharmacy PrEP: Discrete Choice Experiment Training

Day 1 Session 3 24th-25th January 2022

Cognitive Interviews, Pilot, and DCE Administration

Process

PILOT

Allow us confirm that the information used to describe the attributes is accurate and some of the questions in the survey are easy to understand and answer

Help us confirm that the instrument (web-based survey) works well, 30 minutes is enough to answer all, and the participants are not (too) tired at the end After adding the feedback from the CI and Pilot, the DCE will improve and allow us to collect the best data possible. Good-quality data will inform the creation of a good onlinepharmacy service for PrEP delivery

DCE

Key characteristics

Cognitive Interviews

- Aim to obtain feedback in specific sections of the instrument
- Length: around 1 hour
- Uses a script
- RA very involved

Pilot

- Aim to verify usability and fatigue in the entire instrument
- Length: around 45 min
- No script
- RA involved but less

DCE

- Aims to obtain data of the participants' preferences as unbiased as possible
- Length: 30-45 min
- No script
- RA only involved if participant has questions

Structure – Cognitive Interviews

- 1. Approach and recruitment
 - In-person
 - Objective: to collect participants' feedback about the DCE attributes and specific sections of the instrument (see script)
 - Length: around 60 minutes
- 2. Presentation of the instrument
- 3. Active collection of feedback

Let's see the script

Structure – Pilot

- 1. Approach and recruitment
 - In-person
 - Objective: to verify if the instrument is friendly and easy to use, if the participants get stuck in any question, if any questions are not clear, how long does it take to complete the instrument, and how tired or bored is the participant at the end
 - Length: around 45 minutes
- 2. Presentation of the instrument
- 3. Passive collection of feedback:

Observe closely while the participant goes through the survey, if at any point there's confusion ask what's happening and offer help. Take notes every time there's confusion or the participant needed clarification, how long it took to finish the survey, and if they were tired and to what extend.

Let's see the instrument

Structure – DCE

- 1. Approach and recruitment
 - In-person
 - Objective: to collect high-quality data about the participants' preferences. *We assist but we don't advice*
 - Length: around 30-45 minutes
- 2. Presentation of the instrument
- 3. Passive collection of feedback:

After recruitment, present the survey to the participant and let them fill their answers.

Structure – DCE cont.

Clarifying vs. Advice questions

- Clarifying: Related to the meaning of a word or the sense of the question in case of ambiguity or vague meaning
 - Examples:
 - What does 'pay-by-piece' mean?
 - Is contraception the same as emergency pills?
 - Where do I click if I don't know the answer to this question (or don't want to tell)?
- Advice: asks for your opinion or advice
 - Examples:
 - How can I know if clinical consultation is more important than Cost?
 - Do you think oral HIV testing is easier than when they draw blood?

Summary

- Each step help us have the best possible instrument for the DCE
- <u>Cognitive Interviews</u> require the most involvement to obtain feedback, followed by <u>Pilot</u>, and in the <u>DCE</u> we collect no feedback but just administer the survey
- In the DCE we want to collect only the participants' preferences, so we avoid providing any opinion or advice, even if they ask
- Questions?

Supplement 3: Study Questionnaire

DISCRETE CHOICE EXPERIMENT QUESTIONNAIRE

Introduction:

Thank you for taking time to talk with me. We would like to speak to you about pre-exposure prophylaxis or PrEP. PrEP is a medicine you can take to reduce your risk of getting HIV. We have asked you to participate in this survey because we are interested in learning how best to delivery PrEP using an online pharmacy. This means a pharmacy will deliver PrEP medication to clients using a courier, so clients do not need to travel to a pharmacy. We would like to understand your preferences for PrEP delivery through an online pharmacy. This survey should take about 45 minutes. Feel free to let me know if you need a break at any time. You can also stop the survey if you do not want to continue. Before we begin do you have any questions?

RA Initials

Research Assistant Initials (The RA conducting this questionnaire should enter their initials.)

Participant ID

Please enter participant ID from enrollment log. (This should match the PTID entered on the REDCap consent form.)

Please re-enter participant ID from enrollment log. (This should match the PTID entered on the REDCap consent form.)

Part 1: Eligibility Assessment

1	What is your age in years?	years <18, Stop screening. This individual is <u>NOT</u> eligible for study participation. Thank them for their time
2	Have you ever been tested for HIV?	☐ Yes ☐ No ☐ Unsure
3	When was your last HIV test?	MonthYear
4	What was the result of your last HIV test?	 Negative Positive Unknown If positive, this individual is <u>NOT</u> eligible for study participation. Stop screening and thank them for their time.

Part 2: PrEP Knowledge and Interest

5	Have you ever heard of pre-exposure prophylaxis, or PrEP, for HIV prevention before today?	Yes No
6	Have you ever taken PrEP to prevent HIV? [If 5=Yes]	Yes No I don't know Prefer not to answer
6.1	Are you currently taking PrEP to prevent HIV? [If Q6 = Yes]	Yes No

6.2	When did you first start taking PrEP? [If Q6 = Yes]	Month: Year: MM/YYYY
7	Would you be interested in taking PrEP to prevent	Yes
	HIV? [If Q6 != Yes]	No
		I don't know

Persons who answer NO to both of Q6, Q7 are not eligible for participation

If participant is not eligible: Based on your responses, you are not eligible to continue with the questionnaire. Thank you for taking the time to respond.

Part 3: Introduction to Discrete Choice Experiment

As we mentioned, we're designing a new way to deliver PrEP through an online pharmacy. We would like to understand your preferences to help us design this service. Online PrEP delivery includes different services, including an assessment to determine if you are at HIV risk, HIV testing to confirm you are HIV-negative, and talking to a medical provider to make sure PrEP is safe for you. To determine your preferences for these services, we will show you a series of **8** scenarios with 2 options for online PrEP service delivery. For each of these scenarios, we will ask you to choose the delivery strategy you most prefer.

Part 4: Definition of Characteristics

Part 5: Scenarios

We will now ask you about how you would like to get PrEP from an online pharmacy. Please remember there are no wrong answers, we want to know your preferences. When answering each scenario, imagine that you are planning to get PrEP using an online pharmacy. We will also ask you if you would choose to get PrEP using the option you selected. If you would not choose to get PrEP if only these two options were available, you can answer no to this question.

Scenarios

Which of these two options for online PrEP delivery would you most prefer?

If the PrEP service you just chose was available, do you think you would actually use it?

Part 6: E-Pharmacy Engagement and HIV Self-Testing

8	Have you ever purchased medication or other products from an online pharmacy (e-pharmacy)?	Yes No	
9	Have you ever purchased any of the following medications or products from an online pharmacy (e-pharmacy)? [If Q8 = Yes] Select all that apply	Contraception Condoms HIV self-tests Sex lubricants Pregnancy test kits Sexual performance enhancing drugs (e.g., Vega 50) Other None of these services	
10	How would you most prefer to obtain your PrEP medication? [If Q7 = Yes]	Clinic Community pharmacy or chemist Online pharmacy (e-pharmacy) Community health worker (e.g., home visit) Other	

11	If you were obtaining PrEP from an online	Pregnancy test kits		
	pharmacy, you could have other products	Contraception		
	delivered to you with your PrEP medication.	Condoms		
	Please indicate if you would be interested in	Sex lubricants		
	receiving any of the following with your PrEP			
		Sexual performance enhancing drugs (e.g., Vega 50)		
	delivery. Select all that apply	HIV self-test		
		None of these products		
		Other		
12	If you were obtaining PrEP from an online	Every 1 month		
	pharmacy, how frequently would you prefer to refill	Every 3 months		
	your PrEP medication?	Every 6 months		
	·	Other		
Tho no	ext set of questions will ask about how much you wou	Id like to pay for different parts of online PrEP delivery. For		
		to pay. In answering these questions, please consider your		
1		answers. We're interested in your preference. You can		
	ero if you feel that most accurately reflects your prefe			
13	What is the maximum price you are willing to pay	KSH		
	for a blood-based HIV self-test?			
14	What is the maximum price you are willing to pay	KSH		
	for an oral HIV self-test?			
15	What is the maximum price you are willing to pay	KSH		
15		KSN		
	for remote/online clinical consultation to obtain a			
	prescription for PrEP based on your HIV self-test			
	results (one-time cost)?			
16	What is the maximum price you are willing to pay	KSH		
	for a one-month supply of PrEP medicines?			
17	What is the maximum price you are willing to pay	KSH		
	for delivery of PrEP medicines to a setting of your			
	choice (one-time courier fee)?			
18	What is the maximum price you are willing to pay			
10	in total for the package of services associated	KSH		
		K311		
	online PrEP delivery (this includes courier delivery			
	of an HIV self-test, a remote clinical consultation,			
	and courier-delivered PrEP)?			
19	How would you most prefer to pay for the package	Pay by piece (e.g., pay separately for HIV testing, the		
	of online PrEP services (e.g., HIV testing, remote	remote clinic visit, and PrEP drug delivery)		
	consultation, PrEP medication delivery)?	Pay per PrEP visit (including HIV testing, the remote visit,		
	• *	and PrEP medication delivery)		
		Pay a monthly subscription		
The ne	ext set of questions ask about your preferences for on			
	an our of questions ask about your preferences for on	Into TTET delivery		
20	What support, if any, would you be interested in	SMS reminders		
	from the online pharmacy provider to help you	Emails		
	consistently take your PrEP medication? (select	Phone calls		
	all that apply)	Video calls		
	αιι ιται αρριγ			
01		No support needed		
21	At what frequency, would you like support for	Daily		
	taking your PrEP medication?	Weekly		
		Bi-weekly (every other week)		
		Monthly		
22	Have you heard about HIV self-testing as a	Yes		
	method for testing for HIV before today?	No		
		Prefer not to answer		
L				

23	Have you ever used a self-test to test for HIV?	Yes No			
		Prefer not to answer			
24	How much would you like or dislike obtaining	Strongly dislike			
	PrEP though an online platform?	Somewhat dislike			
		No opinion			
		Somewhat like			
		Strongly like			
25	How much effort do you think it would take you to	No effort			
	obtain PrEP online?	A little effort			
		A moderate effort			
		A huge amount of effort			
		No opinion			
26	How confident do you feel about your ability to	Very unconfident			
	navigate an online website to obtain PrEP?	Somewhat unconfident			
		No opinion			
		Somewhat confident			
		Very confident			
27	How much do you agree or disagree with the	Strongly disagree			
	following statement: Online PrEP delivery would	Somewhat disagree			
	help reduce HIV in my community.	No opinion			
		Somewhat agree			
		Strongly agree			
28	Which media sources do you most frequently use	Newspapers			
	to get general information; such as daily news,	Radio			
	important events, etc.	Television			
		WhatsApp groups			
		Social networks (e.g., Facebook, Instagram, Tik Tok)			
		Internet browsing (e.g., google, news' websites)			
29	Which media sources do you most frequently use	Newspapers			
	to get healthcare information; such as healthcare	Radio			
	campaigns, interventions, new medicines, etc.	Television			
		WhatsApp groups			
		Social networks (e.g., Facebook, Instagram, Tik Tok)			
		Internet browsing (e.g., google, news' websites)			

Part 7: Participant Demographics

30	In what region do you live?	North Eastern
		Nyanza
		Western
		Rift Valley
		Nairobi
		Central
		Coast
		Eastern
31	What is your gender?	Male
		Female
		Other
32	Are you currently enrolled in school?	Yes
		No
33	What is the highest level of education you	Primary
	have completed?	Secondary
		O Levels

		A Levels		
		Technical or vocational school		
		University or higher Prefer not to answer		
~ 1				
34	Do you have regular employment?	Yes, I work full time		
		Yes, I work part time		
		Yes, I work multiple jobs		
		Yes, seasonal employment		
		No, I do not work		
		Prefer not to answer		
35	How much money do you usually earn in a	KES		
	month?	Prefer not to answer		
36	Have you ever been married?	Yes		
		No		
37	What is your current relationship status?	Married		
		Steady boyfriend or girlfriend		
		Single		
		Widowed		
		Divorced or separated		
		Prefer not to answer		
38	Have you ever been pregnant? [If Q31 =	Yes		
	female]	No		
39	Are you using any family planning method to	Yes		
	delay or avoid pregnancy?	No		
	[If Q31 = female]	Prefer not to answer		
40	What method(s) are you using? [If Q39 =	Oral pills		
-	Yes]	IUD		
		Implants		
		Injections		
		Condoms		
		Withdrawal		
		Rhythm or periodic abstinence		
		Emergency contraception		
		Tubal ligation/hysterectomy		
		Vasectomy		
		Traditional methods		
		Don't know		
		Prefer not to answer		
		Other		
41	Where do you prefer to access these family	Community pharmacy/chemist		
	planning methods? [<i>If Q39 = Yes</i>]			
	pianning memous : [n Q39 = 765]	Online pharmacy		
		Health facility		
		Friend or family member		
		Sexual partner(s)		
		Other		

Part 8: Sexual Behavior

42	In the last 3 months, have you had a primary sex partner? (A	Yes
	primary sex partner is a person you have sex with on a	No
	regular basis, or someone you consider to be your main	Prefer not to answer
	partner.)	
43	How long have you been with your primary partner? [If Q42 =	_ years months
	Yes]	

44	In the past 3 months, have you had sex?	Yes No		
45	In the past 3 months <u>, what types of sexual partners have you</u> had? [If Q44 = Yes]	One primary partner only (no other partners) One primary partner and casual partner(s) Casual partner(s) only Other Prefer not to answer		
46	In the past 3 months, how many different people have you had sex with? [If Q44 = Yes]	_ people 888 = Don't know 999 = Prefer not to answer		
47	<u>In the past 3 months</u> , how many of these people were new sexual partners (i.e., you had never had sex with them before)? [If Q44 = Yes]	people 888 = Don't know 999 = Prefer not to answer		
48	In the past month, how many times did you have sex?	times		
49	When you had sex in the past month, how many times did you use a condom? [If $Q47 > 0$]	times		
The ne>	t set of questions ask about your sexual behavior in the past 6 m	ionths		
50	In the past 6 months, have you had sex without a condom?	☐ Yes ☐ No ☐ Unsure		
51	 <u>In the past 6 months</u>, do you think you may have been exposed to HIV? For example, you might select "yes" if, during the past 6 months, you: had a condom break shared needles, syringes, or other equipment to inject drugs, or were sexually assaulted 	☐ Yes ☐ No ☐ Unsure		
52	In the past 6 months, have you had sex with more than one person?	☐ Yes ☐ No ☐ Unsure		
53	 Do you have any sex partners who are HIV-positive and: are not currently taking antiretroviral therapy (ART), have been taking antiretroviral therapy (ART) for less than 6 months, have been missing doses of their antiretroviral therapy (ART), have been missing doses of their antiretroviral therapy (ART), have a detectable HIV viral load, or the two of you are trying to get pregnant? Select "yes" if ANY of the above statements are true about any of your sex partners who are HIV-positive. 	Yes No Unsure		

54	 Do you have any sex partner(s) who you think are at high risk for HIV and whose HIV status you do not know? Some example behaviors that may make your partner at high risk for HIV include: if he or she has other partners whose HIV status is unknown if he or she exchanges sex for money/gifts or money/gifts for sex if he or she engages in intravenous drug use 	☐ Yes	□ No	Unsure
55	In the <u>past 6 months</u> , have you used post-exposure prophylaxis (PEP) two times or more? <i>Post-exposure prophylaxis is a medication that is taken very</i> <i>soon after a possible exposure to HIV to prevent becoming</i> <i>HIV-positive.</i>	☐ Yes	□ No	Unsure
56	In the <u>past 6 months</u> , have you been diagnosed with or treated for a sexually transmitted infection (STI)? <i>Examples of sexually transmitted infections include chlamydia</i> <i>and gonorrhea</i> .	☐ Yes	□ No	Unsure
57	In the <u>past 6 months</u> , have you had sex while under the influence of drugs or alcohol?	☐ Yes	🗌 No	🗌 Unsure
58	In the <u>past 6 months</u> , have you been forced to have sex against your will or physically assaulted, including assault by your sex partner?	☐ Yes	□ No	Unsure
59	In the <u>past 6 months</u> , have you had sex with someone in exchange for money or a gift?	☐ Yes	□ No	Unsure
60	In the <u>past 6 months</u> , have you given someone money or a gift in exchange for sex?	☐ Yes	□ No	Unsure
61	In the <u>past 6 months</u> , have you shared needles with anyone while engaging in intravenous drug use?	☐ Yes	□ No	Unsure

The questionnaire ends here. Thank you for your responses.

Get 1000 Ksh if you qualify

Text/WhatsApp or call us at 0757 learn more!



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your community.

If you are interested, we will meet you in a location of your choice to complete the survey. The survey is confidential and takes about 45 minutes. You will receive 1,000 Ksh for your time.

If you are interested in taking part in the survey or have any questions, please send a message via text/WhatsApp or call: 0757-219-898

We are doing a survey about **PrEP service delivery**. PrEP is a pill that you can take daily to reduce your risk of getting HIV.

We would like to understand what you think about getting PrEP delivered to you from an online pharmacy, like **MYDAWA**.

Hearing about your preferences will help us design new models of PrEP delivery for



Supplement 5: DCE Pre-screening Script

DCE RECRUITMENT SCRIPT

Hello, my name is...I'm a Research Assistant at KEMRI and we are doing a study to learn about what people in your community think about pre-exposure or PrEP. PrEP is a pill that you can take daily to reduce your risk of getting HIV.

We would like to learn about your preferences for getting them delivered to you from an online pharmacy. This means a pharmacy will deliver drugs to clients using a courier, so they do not need to travel to a pharmacy. Hearing about your preferences will help us design new models of PrEP delivery for your community.

If you are interested, we will meet you in a location of your choice to complete the survey. The survey is confidential and takes about 60 minutes. You will receive Ksh 1000 for your time and effort.

Are you interested in taking part in this survey?

[IF NO] Thank you very much and have a good [morning/afternoon evening]

[IF YES] That's great! I'm now going to ask you questions to make sure that you are eligible to be in this study. This will take about 10 minutes. If you are eligible, I'll schedule a time for someone from our research team to come to a place that is convenient for you, so you can complete the survey.

Before we begin, do you have any questions?

[Verifying Source of information] Thank you, tell me how you got to know about us?

[If they do not know, advise them on how they can access the study information on the MyDawa website]

[If the participant knows about PrEP study, go ahead and start the pre-screening process]

[Pre-screening process]

[What is your age?] If below the age of 18, inform the participant they are ineligible and explain the reasons why.

[What was the result of your last HIV test?] If positive, inform the participant they are ineligible for the survey.

Are you currently taking PrEP to prevent HIV?

[If eligible for the study participation. Please continue with scheduling their study visit] Thank you for responding to the questions. You are eligible to participate in the study. I would like to ask you for some information on how I can contact you and when and where we can schedule the study. [Write down the first name and surname]

[Write done the phone number where we can reach them and how they would prefer to be contacted] Through a phone call, SMS, or WhatsApp.

[Which day of the week are you available for the interview] Write down the day given by the participant.

[**Time of scheduled study visit**] Someone from our research team will come to a location of your choice to administer the study survey. Where would you like to meet?

[Enter study visit] Inform the study participant of the need for privacy, security, and confidentiality.

Thank you so much for your time and for agreeing to participate. Someone from our research team will contact you on the day of the survey for final arrangements. If you have any questions before the day of the interview you can reach the study through our contact number.

Supplement 6: DCE Data Management R Codes

dat\$year <- str_split_fixed(dat\$sys_StartTime, " ", 4)[,3]</pre>

dat\$date <- as.Date(with(dat,paste(year,month,day,sep="-")),"%Y-%b-%d")</pre>

```
---
title: "DCE Data Check - R Script"
date: "`r Sys.Date()`"
output:
 html document:
  toc: true
  toc_float: true
# Load dataset
rm(list=ls())
# Set up R environment
## install.packages("stringr", "tidyverse", "dplyr", "pander")
library(stringr)
library(tidyverse)
library(dplyr)
library(pander)
# Set up functions
`%notin%` <- Negate(`%in%`)
table_na <- function(x){table(x, useNA = "always")}</pre>
# **NOTE**: Change my_path to your own directory
## my_path = "C:/Users/Yilin Chen/Desktop/2021 DCE ePharm/Data collection"
my_path = "~/Desktop/My projects/2021 DCE ePharm/Data collection" # Change this to the
path of your folder
setwd(my_path)
# Load data
## **NOTE**: Please change the dataset name accordingly
file_name = "GatesePharmDCESurvey_data_pre-launch_5.5.csv" # Change file_name to the
name of csv file
dat <- read.csv(file name)</pre>
dat$x = seq(nrow(dat))
# Select relevant survey records in the data collection time window
dat$day <- str_split_fixed(dat$sys_StartTime, " ", 4)[,1]</pre>
dat$month <- str split fixed(dat$sys StartTime, " ", 4)[,2]</pre>
```

NOTE: Please change the date_start and date_end below for specific data collection time window date_start = "2022-03-09" # Change this to the start of time window date_end = "2022-04-26" # Change this to the end of time window dat2 <- dat %>% filter(date >= date_start & date <= date_end) # example: from 2022-03-09 to 2022-04-26

Select relevant survey records that contain "230" in the PTID
NOTE: Please revise "230" to the starting number/word used in the actual survey
num_start = "230" # Change this to the actual starting number/word
dat2 <- dat2[str_detect(dat2\$PTID1, num_start),]
dat2 <- dat2[complete.cases(dat2[, c('PTID1')]),]
nrow(dat2)</pre>

Data checks## 1. Check for number of interviews

Show PTIDs - first check if there are any missing PTIDs unique(dat2\$PTID1)

Count the total number of interviews
length(unique(dat2\$PTID1))

Count the total number of interviews by RAs dat2 %>% group_by(RAInitials) %>% tally() %>% pander()

2. Check for duplicate PTIDs and incomplete surveys

Lists all duplicate records using the variable PTID1 and print out these PTIDs count_pid <- as.data.frame(table(dat2\$PTID1)) dup_pid <- as.character(count_pid\$Var1[(count_pid\$Freq > 1)]) dup_pid

Create a subset with duplicate PTIDs
dat3a <- dat2 %>% filter(PTID1 %in% dup_pid) %>% select(sys_RespNum, sys_StartTime,
sys_EndTime, sys_LastQuestion, RAInitials, PTID1, PTID2)

dat3a <- dat3a[order(dat3a\$PTID1),]

Incomplete surveys: show PTIDs when the last answered question is not "TeminateQuestionnaire" or "TerminateEligibility" incomplete_id <- dat2 %>% filter(sys_LastQuestion %notin% c("TerminateQuestionnaire", "TerminateEligibility")) %>% select(x)

List PTIDs of incomplete surveys dat3 <- dat2 %>% filter(x %in% incomplete_id\$x) incomplete_pid <- unique(dat3\$PTID1) incomplete_pid

Create a subset with incomplete surveys dat3b <- dat3 %>% select(sys_RespNum, sys_StartTime, sys_EndTime, sys_LastQuestion, RAInitials, PTID1, PTID2) dat3b <- dat3b[order(dat3b\$PTID1),]</pre>

Combine incomplete records and duplicate records dat3c <- dat3a %>% full_join(dat3b, by = c("sys_RespNum", "sys_StartTime", "sys_EndTime", "sys_LastQuestion", "RAInitials", "PTID1", "PTID2")) dat3c\$status = ifelse(dat3c\$sys_LastQuestion %notin% c("TerminateQuestionnaire", "TerminateEligibility"), "incomplete", "complete") dat3c

Save duplicate surveys to a csv file and add a date to the file name ## Most of duplicate surveys might be due to incompleteness ## **NOTE**: Change the date_now below to the current date date_now = "05.12.2022" # Change to the current date write.csv(dat3c, paste0("GatesePharmDCESurvey_duplicate_", date_now, ".csv"))

You could also review these duplicate records on Sawtooth or original csv file, and figure out reasons for duplicates## Admin site link: https://ePharmacyPrEP.sawtoothsoftware.com/english/admin.html

3. Check for specific responses
Part 1: Eligibility Assessment

Create a subset of eligible participants and interested variables for exploratory analysis

dat4 <- dat2 %>% filter(sys_LastQuestion == "TerminateQuestionnaire")
length(unique(dat4\$PTID1)) # check number of unique participants
dat5 <- dat4[, 19:156] # check if this includes all variables of interest (starting from "RA initials"
variable)</pre>

Part 1: Eligibility Assessment (Q1-4)
apply(dat5[, 4:8], 2, table_na)

AgeYears: should be >= 18 years old dat5\$PTID1[dat5\$AgeYears < 18] ## HIVTestDate_Month: should not be NA and should be numeric from 1-12 dat5\$PTID1[is.na(dat5\$HIVTestDate_Month)] ## HIVTestDate_Year: should not be NA and should be year dat5\$PTID1[is.na(dat5\$HIVTestDate_Year)] ## HIVTestResult: should not include 2 - "Positive" dat5\$PTID1[dat5\$HIVTestResult == 2]

Part 2: PrEP Knowledge and Interest

Part 2: PrEP Knowledge and Interest (Q5-7)
apply(dat5[, 9:14], 2, table_na)

Part 3: Discrete Choice Experiment

Part 3: Discrete Choice Experiment apply(dat5[, 15:30], 2, table_na) # shouldn't have any NAs

Part 6: E-Pharmacy Engagement and HIV Self-Testing

Part 6: E-Pharmacy Engagement and HIV Self-Testing (Q8-29)
e-Pharmacy engagement
apply(dat5[, 31:53], 2, table_na)

```
## ePharmEngDetail_7: if "Other" category = 1, there should be text answers
table(dat5$ePharmEngDetail_7)
## PreferObtainPrEP_5_other: if PreferObtainPrEP == 5, there should be text answers
table(dat5$PreferObtainPrEP_5_other[dat5$PreferObtainPrEP == 5])
## AddlProducts_7: if "Other" category = 1, there should be text answers
table(dat5$AddlProducts_7)
## PrEPRefillPref_4_other: if PrEPRefillPref == 4, there should be text answers
table(dat5$PrEPRefillPref_4_other[dat5$PrEPRefillPref == 4])
```

WTP questions apply(dat5[, 54:60], 2, table_na) ## Preferences for online PrEP delivery
apply(dat5[, 61:84], 2, table_na)

Part 7: Participant Demographics

Part 7: Participant Demographics (Q30-41)
apply(dat5[, 85:112], 2, table_na)

FamPlanMethod_14_other: if FamPlanMethod_14 == 1, there should be text answers
table(dat5\$FamPlanMethod_14_other[dat5\$FamPlanMethod_14 == 1])
AccessFamPlan_6_other: if AccessFamPlan == 6, there should be text answers
table(dat5\$AccessFamPlan_6_other[dat5\$AccessFamPlan == 6])

Part 8: Sexual Behaviors

Part 8: Sexual Behaviors (Q42-61)
apply(dat5[, 113:138], 2, table_na)

SexPartType3Mo_4_other: if SexPartType3Mo == 4, there should be text answers
table(dat5\$SexPartType3Mo_4_other[dat5\$SexPartType3Mo == 4])