

# Development of PrEP Implementation Strategies for the General Population of Botswana

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# Background

- Botswana attained UNAIDS 95-95-95 target, but zero new infections by 2030 unlikely
  - 20.8% prevalence, ~6,700 new HIV cases in 2021
  - Unpublished data show decrease from >98% viral suppression in 2021 to <95% currently
- Low pre-exposure prophylaxis (PrEP) use
  - ~10% among eligible adolescent girls and young women (AGYW)
  - Initial strategy focused on key populations (KP), HIV clinic dispensing
  - General heterosexual population not prioritized



# Study Goal and Aims

**Overall Study Goal:** To develop and implement PrEP strategies for the general population, with continuous stakeholder engagement and co-design

- **Aim 1:**

- (a) To identify barriers and facilitators of PrEP uptake and persistence for the general population
- (b) To determine and pilot test community-based PrEP implementation strategies for the general population

- **Aim 2:**

- To conduct a hybrid type 3 effectiveness-implementation clinical trial to test community-based PrEP strategies for a differentiated service delivery PrEP program for the general population

- **This presentation focuses on Aim 1**

# Proposed PrEP Implementation Strategies

## PrEP provider training

Training and task shifting to broader range of healthcare workers (doctors, nurses, practitioners, pharmacists, etc.)

- Module 1: Introduction to HIV Prevention & PrEP effectiveness
- Module 2: Barriers & facilitators to PrEP uptake
- Module 3: PrEP clinical knowledge & service delivery: eligibility, screening, assessments, initiation
- Module 4: HIV testing within PrEP services: Approaches to self-testing and confirmation
- Module 5: PrEP testing protocols: procedures, frequency, responsible staff, and results management
- Module 6: Strategies to strengthen community-based prep provision

# Proposed PrEP Implementation Strategies

## Messaging to general population to create demand for PrEP

- Tailored outreach
- Community engagement
- In-person and online messaging
- <https://www.facebook.com/PrEPForASaferBotswana/>

## What is PrEP?

PrEP (Pre-Exposure Prophylaxis) is a pill that protects you from **HIV**. Take it daily or on-demand to stay safe —protection that fits your lifestyle.

**Your Health, Your Choice!**

## PrEP Daily & Groove Without Worry

Alcohol does NOT cancel out PrEP.  
But missing pills does.  
Consistency is your protection.

**PrEP is like  
sunscreen for your  
sexual health.**

Why risk the burn?

# Proposed PrEP Implementation Strategies

## Differentiated Service Delivery (DSD)

- Combination of facility & community-based settings for HIV testing and PrEP prescribing
  - Non-HIV clinic, pharmacies, community-based organizations
- Telehealth with courier service/HIV self-testing



# Proposed PrEP Implementation Strategies

## Social support and problem solving

- Adherence buddies selected by PrEP users for peer/community-based informal support
- Close family/friends from PrEP users' social network
- Similar to HIV treatment partners, recommended in Botswana's and other countries' HIV guidelines to support adherence for people with HIV



# Methods Overview

- To explore acceptability and feasibility of proposed strategies, and elicit ideas for new strategies, we conducted:
  - Stakeholder meetings
  - In-person community survey
  - Modified innovation tournament (online crowdsourcing)



# Multi-Sector Stakeholder Meetings

- Main in-person meeting followed by 4 virtual sessions for deeper exploration
- 82 attendees: non-governmental organizations/NGOs (32.4%), government (29.7%), HIV care (43.2%), sexual/reproductive health (36.1%), and general health care (32.4%)
- Evaluated with meeting discussion notes and in-person post-meeting quantitative survey (n = 37)
  - Modified Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), and Feasibility of Intervention Measure (FIM), 1=strongly disagree-5=strongly agree, Weiner et al., 2017





# Multi-Sector Stakeholder Meetings: Acceptability

- **Overall, stakeholders emphasized flexibility in PrEP delivery, to allow participants to cycle on and off PrEP based on risk, and to choose oral or injectable PrEP**
- **High acceptability of provider training**
  - Providers lack training, especially with youth
  - Train providers outside of HIV clinics [e.g., sexual and reproductive health services (SRH) and family planning services]
- **High acceptability of differentiated service delivery/community-based PrEP**
  - Flexible PrEP access points and service hours needed for working individuals
  - Leverage pharmacies, mobile clinics, community pop-up events in schools, markets, wellness fairs



# Multi-Sector Stakeholder Meetings: Acceptability

- **High acceptability of online and in-person PrEP communication strategies to reduce community PrEP stigma, mistrust, misconceptions/low knowledge**
  - Cover prevention options other than PrEP, to increase feelings of empowerment in decision-making
  - Partner with community leaders and influential figures
  - In-person (e.g., door-to-door, community events) and radio through trusted community organizations can reach populations not on social media



# Multi-Sector Stakeholder Meetings: Acceptability

- **Lower acceptability of telehealth/postal delivery**
  - Community mistrust of telehealth and HIV self-testing
  - Limited health care worker technical skills/familiarity with telehealth platforms
  - Challenges in maintaining confidentiality and privacy
  - Less reliable and affordable technology/internet infrastructure and access in rural areas



# Multi-Sector Stakeholder Meetings Post-Survey (n = 37)

- Nearly all (96.4%) had heard of PrEP
- Over two-thirds (67.6%) had provided PrEP services
- Expanding PrEP was perceived to be highly appropriate (e.g., suitable and fitting for the country; M = 4.1 on 5-point scale)



# Multi-Sector Stakeholder Meeting Post-Survey (n = 37)

Strategy	Acceptability M (SD) 1-5 range	Feasibility M (SD) 1-5 range	% (n) like idea agree/agree strongly
Community-based	3.95 (0.92)	3.72 (0.89)	75.7% (28)
Adherence buddies	<b>3.99 (0.99)</b>	<b>3.98 (0.98)</b>	<b>78.4% (29)</b>
Co-location w/ other health services	3.88 (0.88)	3.73 (0.93)	73.0% (27)
Telehealth	3.63 (0.90)	3.49 (0.99)	62.2% (23)
Postal delivery	3.59 (0.97)	3.52 (1.07)	62.2% (23)

# Potential PrEP User In-Person Surveys

- 980 participants recruited from community settings
  - Large workplaces, wellness days, post offices, kgotla (traditional meeting place for community dialogue)
- Measures:
  - PrEP cascade (awareness, use)
  - PrEP knowledge/misconceptions/beliefs/preferences
  - PrEP stigma
  - Preferred and trusted PrEP information sources
  - Acceptability of Intervention Measure (Weiner et al., 2017)



# Potential PrEP User Survey: Socio-demographic Characteristics

	M (SD) range or % (n)
Age [M (SD), range]	43.34 (15.76), 18 – 83
Woman % (n)	78.7% (770)
Education level: Senior or higher	26.4% (256)
Urban (Gaborone/ Francistown)	18.1% (177)
Low income (<499 pula/month)	14.4% (127)
Regular health care provider	76.1% (743)

# Potential PrEP User Survey: PrEP Cascade

	% (n)
Heard of PrEP	51.6% (499)
Heard of PrEP from provider	28.0% (274)
Know anyone who used PrEP	15.2% (148)
Ever on PrEP (now or prior)	5.2% (51)

# Potential PrEP User Survey: PrEP Stigma Beliefs

	<b>% (n) agree/strongly agree</b>
Need to be careful who you tell about PrEP use	41.7% (408)
Need to work hard to keep PrEP use secret	19.7% (193)
Most people think PrEP is immoral	14.4% (141)
Risky to tell someone started/thought about using PrEP	13.3% (130)

# Potential PrEP User Survey: Information Sources

	Preferred % (n)	Trusted % (n)
Doctor/nurse	<b>82.7% (810)</b>	<b>82.1% (805)</b>
Primary care provider	59.4% (582)	62.6% (613)
Clinic (not family planning)	60.7% (595)	57.1% (560)
Family planning clinic	45.0% (441)	43.1% (422)
HIV prevention organization	27.1% (266)	24.5% (240)
Social media	22.7% (222)	14.0% (137)
Online search	21.7% (213)	14.4% (141)
Family	6.3% (62)	2.2% (22)
Friend	4.9% (48)	1.3% (13)

# Potential PrEP User Surveys: Acceptability of Strategies

Strategies	Like the Idea % (n)	Overall Acceptability M (SD); 1-5 range
Co-location	93.0% (911)	4.2 (0.7)
Community-based	86.5% (847)	3.9 (1.0)
Adherence buddies	79.6% (780)	3.7 (1.0)
Telehealth	74.8% (733)	3.6 (1.1)
Postal delivery	52.8% (517)	3.1 (1.3)

## Methods: Modified Innovation Tournament

- Recruited through Facebook, X
- Two prompts: “Describe your idea for how to get [oral/new form of injectable] PrEP to adults (18 years and older) who want it in Botswana.”
- 153 ideas submitted for PrEP strategies on virtual crowdsourcing platform (May 14 - June 20, 2025)
  - 110 ideas for oral PrEP; 43 ideas for injectable PrEP
- Participants provided feedback on each other’s ideas
- Multidisciplinary committee evaluated ideas
  - 21 members



The poster features a glowing yellow lightbulb in a white oval frame against a background of several unlit blue lightbulbs. The PrEP logo is in the top right, and the text is in a white rounded rectangle on the right side.

**PrEP**  
For a Safer Botswana

### INNOVATION CHALLENGE

**University of Botswana, PrEP** study is asking for your ideas on how to get the **PrEP HIV** prevention medicine to the general population in Botswana.

Your ideas will help inform the design of strategies to provide PrEP in real life!

**HAVE AN IDEA?**

Submit at <https://bwprep.org.bw>

**BHP**  
BOTSWANA HARVARD HEALTH PARTNERSHIP

**RAND**  
CORPORATION

**M** Northwestern  
Medicine

**UNIVERSITY OF BOTSWANA**

REPUBLIC OF BOTSWANA  
Ministry of Health



# Preliminary Themes: Modified Innovation Tournament

- Provide PrEP outside of HIV clinics (all clinics, pharmacies, community settings)
  - “All government health facilities and health posts where people can easily access it”
  - “Don’t leave rural areas behind”
  - “police stations and satellite police posts”
  - “Industries with a high number of young and mobile employees (e.g., mining, agriculture, hospitality)”
  - “Authorize trained pharmacists to dispense PrEP without a full clinical visit”

# Preliminary Themes: Modified Innovation Tournament

- Increase awareness (social media, influencers)
  - “I think it’s important to communicate the statistics and the effects of HIV/AIDS, how it affects lives, through influencers, people are treating it too casual ... Make memes that will promote PrEP”
  - “Train non-traditional influencers, such as hairdressers, barbers, taxi drivers, market vendors, and religious or traditional leaders, as PrEP champions to educate peers & their communities”

# Preliminary Themes: Modified Innovation Tournament

- Provide social support (peers, counselors)
  - “Deploy mobile outreach teams to marginalized areas, offering on-site PrEP initiation, quarterly refill rallies, and community PrEP clubs, for peer-led support. Integrate SMS and WhatsApp reminders, plus virtual check-ins with KP-trained counsellors to boost adherence”



# Committee Discussion: Modified Innovation Tournament

- **Increase awareness to reduce stigma and build trust**
  - ✓ Conduct mass education campaigns (media and community outreach)
  - ✓ Partner with trusted influencers, peer educators, and community leaders, including peer-led and informal approaches for youth
  - ✓ Integrate PrEP education into schools, clinics, antenatal care, and family planning
- **Develop relatable messaging**
  - ✓ Use culturally sensitive, youth-friendly, and stigma-free communication
  - ✓ Use real-life testimonials
  - ✓ Reframe PrEP as normal and empowering preventive health service

# Committee Discussion: Modified Innovation Tournament

- **Train healthcare workers (doctors, nurses, pharmacists, community health workers)**
  - ✓ Integrate PrEP into routine health care
  - ✓ Strengthen counseling, adherence monitoring, and side-effect management skills
  - ✓ Expand to rural settings
- **Address logistical barriers**
  - ✓ Expand access through pharmacies, NGOs, telemedicine, and mobile outreach
  - ✓ Promote injectable PrEP for convenience, privacy, and adherence
  - ✓ Use SMS reminders and digital systems for adherence and follow-up
  - ✓ Subsidize services and encourage insurance/medical aid coverage



# General Discussion

- Strategies were generally perceived to be helpful and acceptable across formative research stages, and likely to reduce barriers to PrEP use and persistence, such as stigma
- Adherence buddies, community-based PrEP, and PrEP messaging highly rated
  - Team used ideas from the formative research to refine strategies for the pilot
- Telehealth and postal delivery were seen as less feasible and acceptable
  - Telehealth and postal delivery will not be used in the pilot



# Next Steps

- We are conducting a 2-community 3-month open pilot with 50 PrEP users and their adherence supporters, after which strategies will be further refined through stakeholder engagement
- Strategies will be tested in hybrid type 3 effectiveness-implementation clinical trial starting August 2026
  - 8 matched communities (4 intervention, 4 control)
  - 300 PrEP users and their adherence supporters
  - Assessments at baseline and 3-, 6-, and 12-month follow-up
  - Outcomes: Rate of PrEP uptake, PrEP persistence (if still eligible for PrEP), implementation (e.g., reach of PrEP in each community)



# Conclusion

- Contextually appropriate PrEP strategies are essential for increasing uptake and adherence in Botswana's general population
- Our phased, adaptive approach, with early and continuous involvement of stakeholders enhances intervention implementation and effectiveness, paving the way for future sustainability
- Our study provides a replicable model for improving PrEP uptake and persistence in similar contexts globally (e.g., rural areas, U.S. South), for reciprocal innovation

# Thank You!

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