Estimating the Cost and Efficiency of Differentiated Direct-to-Pharmacy PrEP Refill Model in Kenya

Ifechukwu B. Nwogu, MPH¹; Dorothy Mangale², MS, PhD; Margaret Mwangi³, BSc; Monisha Sharma², MSc, PhD; Kenneth K. Mugwanya, MBChB, MSc, PhD^{2,4}

¹Comparative Health Outcomes, Policy, and Economics (CHOICE) Institute, University of Washington School of Pharmacy, Seattle, WA, USA ²Department of Global Health, University of Washington, Seattle, WA, USA ³Kenya Medical Research Institute (KEMRI), Nairobi, Kenya ⁴Department of Epidemiology, University of Washington, Seattle, WA, USA

Background

- Kenya ranks 3rd among East and Southern African countries with the highest HIV incidence in individuals 15 years and older¹
- Oral pre-exposure prophylaxis is an effective strategy for the prevention of the human immunodeficiency virus (HIV) in persons at high risk of infection²
- Delivery of PrEP is rapidly scaling up in Kenya, as part of the national HIV prevention strategy³
- However, barriers such as high patient volume, long waiting time, and busy personnel may impair PrEP delivery in real-world clinics⁴

Objective

To examine the cost and efficiency of implementing a direct-topharmacy PrEP delivery pathway during follow-up visits in Kenya public HIV clinics

Methods

- The study was conducted in four public HIV clinics in Kenya: two treatment sites, where a differentiated direct-to-pharmacy PrEP refill delivery model was implemented (intervention), and two control clinics delivering care as usual
- We conducted a micro-costing study from 9/2022 to 1/2023 to estimate and compare the cost of the intervention versus usual care from a payer's perspective
- Core components of the intervention included:
 - Direct-to-pharmacy refill visits with optional clinical interactions
 - Three-month PrEP refill supply
 - Client HIV self-testing
- Time-and-motion surveys were used to examine the type and duration of activities, and resources involved in PrEP delivery
- Costing questionnaires were used to capture start-up costs (building, equipment, furniture), and recurrent costs (salaries, utilities, HIV testing, PrEP) in 2024 US dollars (USD)
- Administrative staff interviews were used to estimate the proportion of clinic visits that were PrEP-related and to obtain additional information on resource use associated with PrEP delivery as needed

	Control clinics only	
	Both intervention and control clinics	Re
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		HTS
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CRF: C	learance record form;	HRIO : Healt

Take-home Message

settings

HIV clinics

respectively)

usual care

Figure 1. PrEP delivery patient flow chart at HIV clinics

Entry					
Ļ					
cords office	File retrieval by HRIO				
↓					
e waiting area					
↓ 					
riage room	Nurse captures client's vitals				
↓ 					
waiting bay	LUV(colf testing (intervention) or				
Ļ	provider-administered testing				
HTS office	(control)				
	I				
ician's waiting					
area					
sician's office	Counselling, CRF completion				
	and PrEP prescribing				
worker waiting					
worker's office	Screening for gender-based				
	Violence				
macy waiting					
area					
	CRF risk assessment				
Pharmacy	(intervention), counseling and PrEP dispensing by pharmacist				
Exit					

th records inspection officer; **HTS**: HIV testing services

> Systemic challenges impede the delivery of PrEP in clinical

- > This study examined the cost and efficiency of a differentiated PrEP follow-up delivery model in Kenya public
- > Patients spent an average of 33 minutes versus 51 minutes at the clinics implementing the intervention and usual care, respectively (wait time: 0 minutes versus 11 minutes
- > Variable personnel time cost was \$3.19 for the differentiated PrEP delivery model compared to \$6.30 for
- > Similarly, the average cost per PrEP follow-up visit was \$50 versus \$73 for intervention and control clinics respectively, resulting in potential cost- saving of \$23 per client visit

Results

We observed 58 PrEP follow-up visits in the intervention arm and 22 visits in usual care.

able 1. PrEP follow-up visit activity duration in minutes				Total cost per year of PrEP follow-up visits		
Activities	Intervention,	Control,		at month 1,3 and 6 Amount (in USD)		
	median (IQR)	median (IQR)				
Records retrieval and client registration -	2 (1-2)	2 (2-3)	Cost category	Intervention	Control	
overall				(N=270 visits)	(N=215 visits)	
Records retrieval and client registration -	2 (1-2)	-	Personnel	7020	10,965	
active time			Supplies/consumables	712	185	
Triage - overall	NA	5 (2-8)	Equipment	4,688	4,209	
HIV testing – overall	20 (18-27)	20 (18-23)	Building & utilities	201.28	401.49	
HIV testing - active time	22 (18-30)	-	Training	845	0	
		7 (6 12)	Total	13,474	15,760	
• Chincian's office – overall	NA	7 (0-15)	Average cost per PrEP	50	73	
Documentation and PrEP dispensing -	2 (2-4)	4 (3-7)	follow-up visit			
overall			Incremental cost of	-23		
PrEP visit duration - overall	33 (29 - 45)	51 (44-144)	efficiency PrEP			
 PrEP visit duration - active time 	26 (21-36)	-	Figure 2 Proportion of total cost of PrFP follow-up by			
PrEP visit wait time	0 (0-6)	11 (2-37)	treatment arm and cos	ost category		

IQR: interguartile range

*Active time represents durations where client is receiving direct service from a provider

- On average, patients receiving PrEP at the intervention clinics spent 33 minutes during each follow-up visit while total time spent for PrEP delivery in the control clinics was 51 minutes
- The average waiting time was lower in the intervention clinics compared to the usual care clinics (0 minutes versus 11 minutes)

Table 2. Variable cost of personnel time per PrEP follow-up visit

Activities	Personnel's	Intervnetion	Control
	cadre	(USD)	(USD)
Records retrieval and client	HRIO	0.33	0.30
registration - overall			
Records retrieval and client	HRIO	0.33	0.330
registration - active time			
Triage - overall	Triage nurse	0.00	1.24
HIV testing - overall	HTS counsellor	2.17	2.36
HIV testing - active time	HTS counsellor	2.38	2.36
Clinician's office - overall	Clinical officer	0.00	1.14
Documentation and PrEP dispensing	Pharmcist/Phar	0.47	1.27
- overall	m technician		
Variable personnel cost of PrEP visit		2.97	6.30
- overall			
Variable personnel cost of PrEP		3.19	6.30
visit - active time			

HRIO: Health records inspection officer; **HTS**: HIV testing services, **USD**: United States Dollars

Table 3. Total follow-up costs, average cost per client vist and and incremental cost per client associated with intervention

Results (cont'd)



Conclusion

Differentiated direct-to-pharmacy PrEP refill visits with HIV self-testing may lower cost, reduce care delivery and wait times, and improve the efficiency of PrEP provision in public HIV clinic settings

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Disclosures

The authors have no known conflict of interests