

Comparing the cost of six-month PrEP dispensing with interim HIV self-testing to the standard-of-care three-month PrEP dispensing with clinic-based testing in Kenya



Abstract # EPE237

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Key Message: 6-month PrEP dispensing with interim HIV self-testing demonstrated ~10% lower costs than quarterly SOC clinic-based dispensing and testing in Kenya and decreased personnel time needed

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Background

- In sub-Saharan Africa, cost remains an important barrier to HIV PrEP access and delivery; novel delivery models are needed to help address this
- The JiPime-JiPrEP trial (CT.gov: NCT03593629) tested 6-month PrEP dispensing with interim HIV self-testing (HIVST) and found *non-inferior* HIV testing (risk difference: -1.15%, 95% confidence interval lower bound -6.89), PrEP refills (RD: -2.60%, CI: -8.88), and PrEP adherence (RD: 2.37%, CI: -5.05) compared to standard-of-care (SOC) PrEP dispensing every three months¹
- Cost results may inform affordability comparisons across different PrEP delivery models

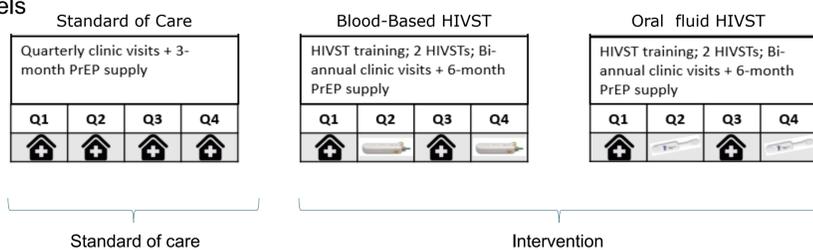


Fig. 1. Summary of allocation of PrEP delivery procedures by study arm

Objective: To estimate the cost of a novel differentiated PrEP delivery model as implemented in a research study, and projected costs if implemented at public HIV clinics in Kenya

Methods

- Using activity-based micro-costing from the payer perspective, we estimated the financial and economic costs of the intervention for one year. We estimated costs in:
 - A *trial scenario*: as implemented in the trial
 - An *MOH scenario*: as projected in Kenyan public clinics
- Data sources:** budgets and expense reports, published documents, key informant interviews, time-and-motion observations (to estimate personnel effort), and client volumes (from study data)
- Assumptions:** PrEP drugs: \$6.75 USD/30-day dose (including supply chain & storage costs); oral-fluid (OF) HIVST: \$2.50 USD; blood-based (BB) HIVST: \$6.50 USD
- Outcome:** Unit cost of PrEP per person per month (PrEP month) estimated in 2019 United States dollars (exchange rate: 1 USD per 105.50 KES)

Results

- Accrual:** From Jan to Dec 2019, the trial accrued 644 PrEP visits (enrollment: 304, refill: 340) and dispensed 2952 months of PrEP (intervention: 2039, SOC: 913)
- Time-and-motion observations:** Per visit, clients coming to the clinic on a quarterly basis (SOC) spent a mean of 54 minutes (IQR: 18) compared to 76 minutes (IQR: 23) for clients in intervention arm
- Counseling and clinical examination placed the highest burden on personnel time in the SOC, while counseling and pharmacy dispensing accrued the most personnel time among six-month PrEP + OF/BB HIVST clients

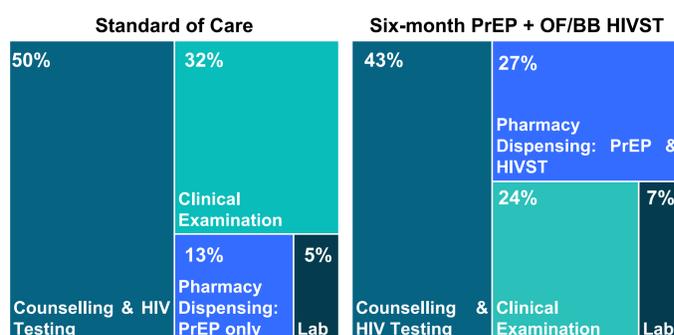


Fig. 2. Distribution of average personnel time spent on PrEP delivery activities

- In the *trial scenario*, the unit cost per PrEP month was \$27.67 USD for the intervention and \$30.60 USD for the SOC. In both arms, majority of costs were attributable to personnel and the cost of PrEP (Table 1).

Table 1: Unit cost per person month of PrEP for the trial scenario

Costs (2019 USD)	SOC		Six-month PrEP + OF/BB HIVST	
	Cost per client per month	% Total cost	Cost per client per month	% Total cost
Variable				
Personnel (clinical)	\$2.64	9%	\$1.70	6%
Medication	\$6.75	22%	\$6.75	24%
Laboratory testing	\$3.48	11%	\$4.75	17%
Other supplies	\$0.77	3%	\$0.67	2%
Sub-total	\$13.64	45%	\$13.87	49%
Fixed				
Start-up	\$4.16	14%	\$3.59	14%
Personnel (supervision and administration)	\$7.07	23%	\$5.26	19%
Capital (e.g., creatinine machines, furniture)	\$2.31	8%	\$1.99	7%
Overhead (e.g., building, airtime, transport)	\$3.43	11%	\$2.96	11%
Sub-total	\$16.96	55%	\$13.80	51%
Summary	\$30.60		\$27.67	

- In the *MOH scenario*, the unit cost per PrEP month was \$13.50 USD for the six-month PrEP + OF/BB HIVST clients and \$14.76 USD for the SOC. In both arms, primary cost drivers were PrEP medication and laboratory testing (Table 2).

Table 2: Unit cost per person month of PrEP for the MOH scenario

Costs (2019 USD)	SOC		Six-month PrEP + OF/BB HIVST	
	Cost per client per month	% Total cost	Cost per client per month	% Total cost
Variable				
Personnel (clinical)	\$1.24	8%	\$1.08	8%
Medication	\$6.75	48%	\$6.75	48%
Laboratory testing	\$3.26	21%	\$2.84	22%
Other supplies	\$0.41	3%	\$0.36	3%
Sub-total	\$11.67	80%	\$11.02	81%
Fixed				
Start-up	\$0.97	6%	\$0.84	6%
Personnel (supervision and administration)	\$0.35	2%	\$0.31	2%
Capital (e.g., creatinine machines, furniture)	\$0.20	1%	\$0.18	1%
Overhead (e.g., building, airtime, transport)	\$1.57	10%	\$1.36	10%
Sub-total	\$3.09	20%	\$2.69	19%
Summary	\$14.76		\$13.50	

Discussion

- The cost of implementing six-month PrEP dispensing + interim OF/BB HIVST model was slightly lower than maintaining the current standard of care: we estimated a \$2.93 (9.6%) savings in the trial scenario and \$1.26 (8.5%) in the MOH scenario
- Costs established in this analysis were lower or comparable to estimates published in similar studies of differentiated PrEP delivery strategies within Kenya (ranging from \$14- \$20 USD)^{2,3,4}
- This costing analysis of a model of PrEP delivery addresses barriers to PrEP persistence and adherence related to the number of facility visits
- The cost of PrEP contributed significantly to the average unit cost, underscoring the need to further examine how the cost of PrEP medication might be reduced
- Scale-up of PrEP delivery requires efficient use of limited resources, and the cost savings and personnel time evaluated in this analysis could be redirected to finance currently unmet medical needs

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