

The costs of community based HIV self-test (HIV-ST) kit distribution: Results from three (3) district sites in Zimbabwe.

Collin Mangenah¹, Lawrence Mwenge², Linda Sande³, Euphemia Sibanda¹, Progress Chiwawa¹, Tariro Chigwenah¹, Miriam Mutseta⁷, Nurilign Ahmed⁴, Marc d'Elbée⁴, Pitchaya Indravudh⁴, Hendy Muralitharan⁵, Melissa Neuman⁴, Cheryl Johnson⁶, Helen Ayles^{2,4}, Elizabeth L Corbett^{3,4}, Karin Hatzold⁷, Frances M Cowan^{1,8}, Fern Terris-Prestholt⁴

¹*Centre for Sexual Health and HIV/AIDS Research (CeSHHAR), Harare, Zimbabwe*

²*Zambart, Health Economics Unit, Lusaka, Zambia*

³*Welcome Trust Malawi, Lilongwe, Malawi*

⁴*London School of Hygiene and Tropical Medicine, London, United Kingdom*

⁵*Warwick University, London, United Kingdom*

⁶*World Health Organization*

⁷*Population Services International, Harare, Zimbabwe*

⁸*Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

Introduction

Community-based HIV self-testing (HIV-ST), where community-based distribution agents (CBDA's) distribute HIV self-test kits door to door, can potentially complement existing approaches such as facility and outreach HIV testing services (HTS). Unit costs are assessed for door to door CBDA HIVST distribution with post-test services provided through mobile outreach (for confirmatory HTS for those self-testing HIV positive and other follow-on services) in 3 Zimbabwean districts.

Methods

We distributed HIV ST using CBDAs as outlined in 3 districts, in three consecutive months. We conducted micro-costing (in 2017 US\$) for HIV-ST distribution and facility-based HTS. HIV-ST cost data included capital (CBDA training, equipment and vehicles), and recurrent costs (personnel, supplies, vehicle and building operation and maintenance, and environmental). Costs include both financial and economic costs and were determined based on prevailing local market prices. We obtained data on number of HIV-ST kits distributed, and outreach HTS, from the PSI

Zimbabwe Monitoring and Evaluation database. For the same districts facility based HTS data (past 12 months) was collated from facility HTS registers.

Results

Compared to facility-based testing (range US\$3.31-US\$5.95) in the same districts, HIV-ST intervention costs were higher (\$7.69 per HIV-ST kit distributed) but similar to mobile HTS (\$8.18). More clients were reached and a much higher proportion of men were tested using HIV-ST relative to facility-based HTS. Moreover increasing success at reaching targets as the HIV-ST program rolled-out sequentially across districts (58% to 67%) suggests increasing efficiency over time.

	Site 1 (Mberengwa)	Site 2 (Buhera)	Site 3 (Masvingo)
HIV-ST kit distribution target	20,875	25,536	18,893
Actual HIV-ST kits distributed	12,026	16,347	12,588
Percentage HIV-ST kits distributed	58%	64%	67%
Total HIV-ST intervention economic costs	\$82,641	\$113,940	\$116,297
Cost (\$) of HIV-ST kit distribution & mobile clinic confirmatory testing per HIVST kit	\$6.87	\$6.97	\$9.24
Cost (\$) per mobile HTC	\$8.18	\$8.18	\$8.18
Cost (\$) per facility HTC	\$5.87	\$3.79	\$4.95
HIV-ST kit distribution - Males	5,174	7,376	5,427
Percentage HIV-ST kits distributed to males	43%	45%	43%
Percentage facility male HTC		17%	24%

Conclusion

Costs of the HIV-ST model are comparable with mobile HTS, but higher than those of facility-based services. HIV-ST offers an alternative to other models of outreach testing, reaching a higher proportion of men and at similar unit cost. Further cost reductions may result from economies of scale, and lower per unit prices of HIVST kits.