

Appendix I: HIV testing case load per level of health facility

Health care Level	# days worked/year	# HTC staff in all facilities	# tested <sup>□</sup>	# tested <sup>§</sup>	Annual # tested <sup>γ</sup>	Annual # tested <sup>□</sup>	HIV-Infected cases per facility	# Outpatient Visits per facility
Hospital	215	58	8	3	37,410	99,760	37,000	107,000
Health Centre	215	64	5	2	27,520	68,880	20,000	60,000
Dispensary	215	128	3	0.5	13,760	82,560	5,000	5,500

<sup>□</sup> Number tested per day if all patients are HIV negative (upper bound). <sup>§</sup> Number tested per day if all patients are HIV positive (lower bound). <sup>γ</sup> Annual Number tested(lower bound). <sup>□</sup> Annual Number tested (upper bound)

Appendix II: Sources of data and assumptions of costing of HIV testing and aPS, Kisumu County

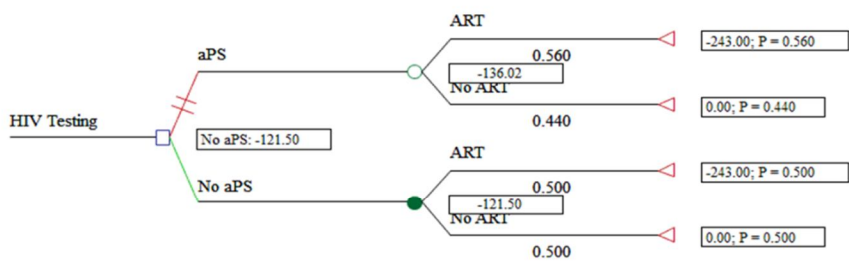
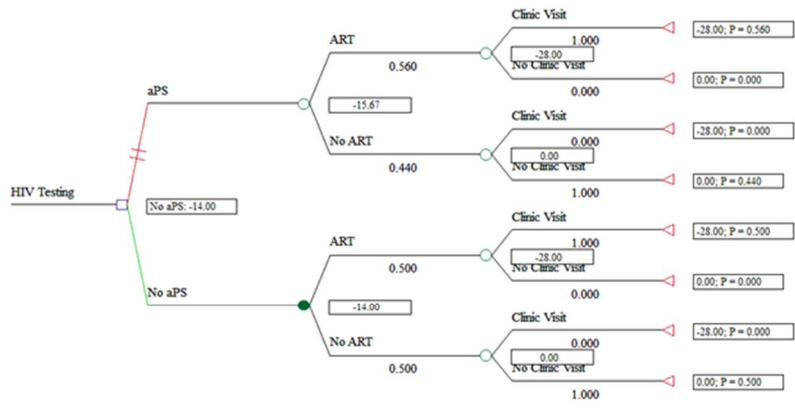
Characteristics	Description	Number	Source of Data/Assumption
HIV test kit prices	Unit prices per person	KHB( US\$1.48) First Response(US\$1.94)	Global Fund, Kenya MoH. Actual based on tender prices
Personnel time (hrs) for community tracing of partners	Full time equivalent for health providers	2 hrs per client	Time motion studies in the aPS study. Asymptotic validity is achieved. Same FTE regardless of cadre
Salaries for nurses and CHWs	<i>Median</i> annual salaries per cadre	Nurses(US\$ 630) per month CHWs(US\$ 230) per month	Salaries & Remuneration Commission Kenya and aPS study records. Majority of nurses and CHW would be in job group F/G & G,H,J
Buildings	Cost per Surface area	US\$2.00 per square feet	HASS consult price index <sup>1</sup> . Public sector buildings have same value as private sector's

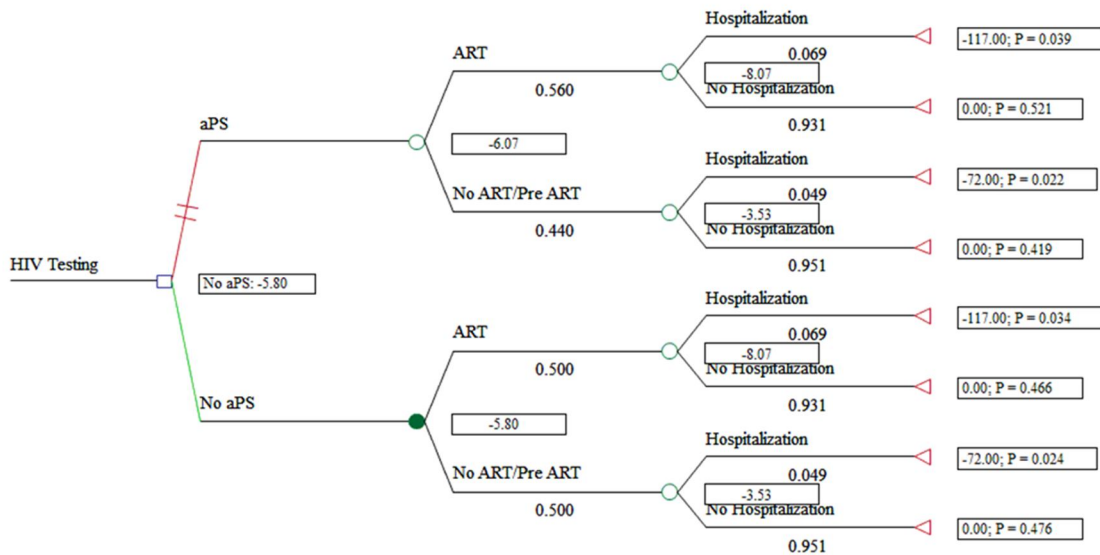
Appendix III: Sources of data and assumptions, for budget impact analysis of aPS, Kisumu County

Characteristics	Description	Number	Source of Data/Assumptions
Eligible Population	All HIV-infected persons(15-64)	118,538	Spectrum/KAIS/UNAIDS/ Prevention Revolution Roadmap <sup>2</sup> . Modelled estimates
Eligible Population	All HIV infected persons on ART	62,280	Kenya HIV and AIDS Profile by County <sup>3</sup> . Modeled estimates
Coverage of HTC	Proportion of HIV-infected persons tested for HIV	50%	Nganga et al, KAIS 2012 <sup>4</sup> . National estimates apply to Kisumu county

Cost of aPS	Cost per index case	Nurse Lower Bound: US 49.73 Nurse Upper Bound: US\$ 61.15 CHW Lower Bound: US\$ 35.09 CHW Upper Bound: US\$ 37.40	aPS study: Upper bound: <i>Cost of HTC index case and cost of tracing and testing a HIV positive sexual partner</i> . Lower bound: <i>Cost of HTC index case and cost of tracing and testing a HIV negative sexual partner</i> Average of 1.67 partners per index with 60% locatability and testing
ART cost	Annual delivery cost per person	US\$ 243 per annum	CHAI prices (US\$ 250) Zambia Scott et al, 2014 <sup>5</sup> (US\$ 243) Zambia. Actual based on tender prices Zambia costs are applicable to Kenya. Costs include drugs, personnel and laboratory monitoring
Hospitalization	Reduction in probability of hospitalization	49%	Meyer-Rath et al <sup>6</sup> . Immediate ART initiation is as effective
Hospitalization	Hospitalization rate per 100 patient years	4.9 for Pre-ART patients 6.9 for ART patients	Meyer-Rath, et al, 2013 <sup>6</sup> .
Hospitalization	Unit cost	US\$ 72 for Pre-ART patients US\$117 for ART patients	Meyer-Rath, et al, 2013 <sup>6</sup>
HIV transmission probabilities	M: F and F: M Per coital HIV infectivity	M:F -0.0019 F:M-0.0010	Hughes et al, 2012 <sup>7</sup> . Apply the higher probability of 0.0019
Averted HIV infections	Cost and efficacy of ART	Lifetime cost of ART-no genotype-US\$ 16,360 Efficacy of ART-96%	Enns et al, Int Journal STDs 2011 <sup>8</sup> . Levison et al, CID 2013 <sup>9</sup> . Cohen et al, 2011 <sup>10</sup> . aPS would avert infection through increase uptake of ART and reduction of concurrency

Appendix IV: Decision Tree Models for Costs of Clinic Visits, ART, and Hospitalization





1. [Http://www.hassconsult.co.ke/index.php?option=com\\_content&view=article&id=22&Itemid=29](http://www.hassconsult.co.ke/index.php?option=com_content&view=article&id=22&Itemid=29).
2. National AIDS/STD Control Programme (NASCOP). Kenya HIV Prevention Revolution Roadmap. 2013.
3. Ministry of Health, Kenya. HIV and AIDS Profile by County. 2014.
4. Ng'ang'a A, Waruiru W, Ngare C, et al. The Status of HIV Testing and Counseling in Kenya: Results From a Nationally Representative Population-Based Survey. *Journal of Acquired Immune Deficiency Syndromes* 2014; **66 Suppl 1**: S27-36.
5. Scott CA, Iyer HS, McCoy K, et al. Retention in care, resource utilization, and costs for adults receiving antiretroviral therapy in Zambia: a retrospective cohort study. *BMC Public Health* 2014; **14**(296): 1471-2458.
6. Meyer-Rath G, Brennan AT, Fox MP, et al. Rates and cost of hospitalization before and after initiation of antiretroviral therapy in urban and rural settings in South Africa. *Journal of Acquired Immune Deficiency Syndromes* 2013; **62**(3): 322-8.
7. Hughes JP, Baeten JM, Lingappa JR, et al. Determinants of per-coital-act HIV-1 infectivity among African HIV-1-serodiscordant couples. *The Journal of Infectious Diseases* 2012; **205**(3): 358-65.
8. Enns EA, Brandeau ML, Igeme TK, Bendavid E. Assessing effectiveness and cost-effectiveness of concurrency reduction for HIV prevention. *International Journal of STD & AIDS* 2011; **22**(10): 558-67.
9. Levison JH, Wood R, Scott CA, et al. The clinical and economic impact of genotype testing at first-line antiretroviral therapy failure for HIV-infected patients in South Africa. *Clinical Infectious Diseases : an official publication of the Infectious Diseases Society of America* 2013; **56**(4): 587-97.
10. Cohen MS, Chen YQ, McCauley M, et al. Prevention of HIV-1 infection with early antiretroviral therapy. *The New England Journal of Medicine* 2011; **365**(6): 493-505.