



Economic cost analysis of community-based distribution of HIV self-test kits in Malawi, Zambia & Zimbabwe

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Study objectives

To conduct detailed micro-costing in order to determine total & unit costs per HIV Self-test kit delivered through community-based distribution agents (CBDA) in 11, 16 & 44 community sites in Malawi, Zambia & Zimbabwe (2016-17) respectively

Methods

Retrospective micro-costing (calendar year July 2016 to July 2017) of all resources required for HIVST kit distribution was conducted alongside cluster-randomised trials evaluating health impact of distributing HIVST kits to households (adults aged >=16years) by community-based distribution agents (CDBAs). Vertical programming allowed detailed top down costing (Line-by-line review & allocation of providers financial expenditure’s (PSI Malawi and Zimbabwe as well as Zambia SFH) supplemented by bottom up site level observations to obtain allocation factors/criteria, donated goods & services, M&E data. Assessed variation across countries (economies of scale) & sites & performed sensitivity & scenario analysis. 3 major cost (expenditure) categories (startup, capital and recurrent expenditures. Capital annualized over 2 years (3% discount rate) & use of current kit price (US\$2) including observed shipping & handling costs.

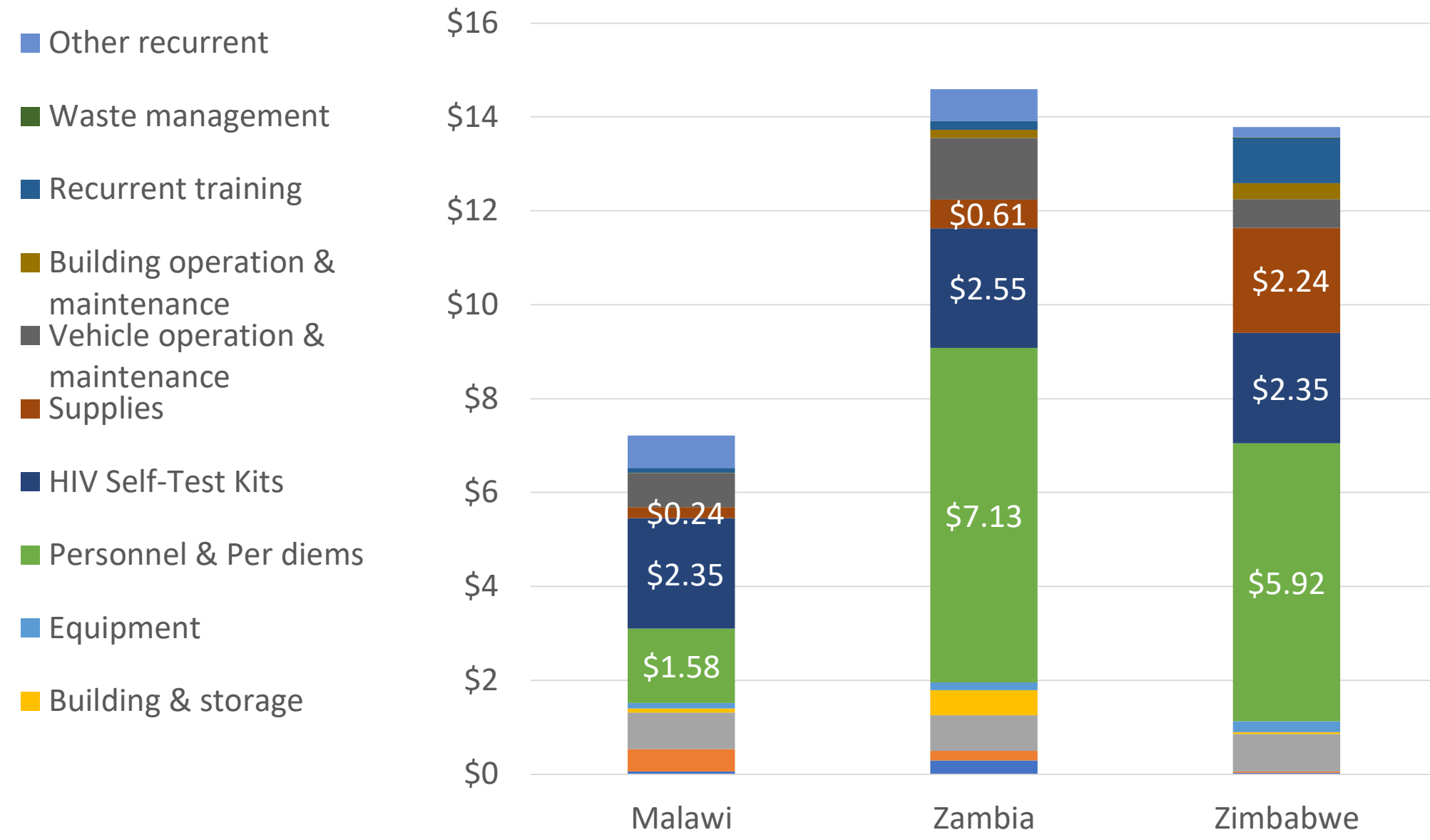
Distribution & mean cost results

138, 139 & 1,009 trained lay distributors distributed 137,915, 103,606 & 93,459 HIVST kits, over 12, 11 & 10 months. Across these countries, 43%-51% of distribution reached men. Average cost per HIVST kit distributed was US\$7.23, US\$14.58 and US\$13.79 in Malawi, Zambia, & Zimbabwe, respectively, with pronounced inter-site variation (e.g. US\$10.19-US\$54.44 for Zimbabwe) within countries driven largely by site fixed costs. Personnel contributed between 22% in Malawi to 49% in Zambia, reflecting differences in remuneration approaches & country GDP. Recurrent site costs were 70%-92% of full costs and 20%-62% above routine facility testing costs.

Key setting characteristics & costs

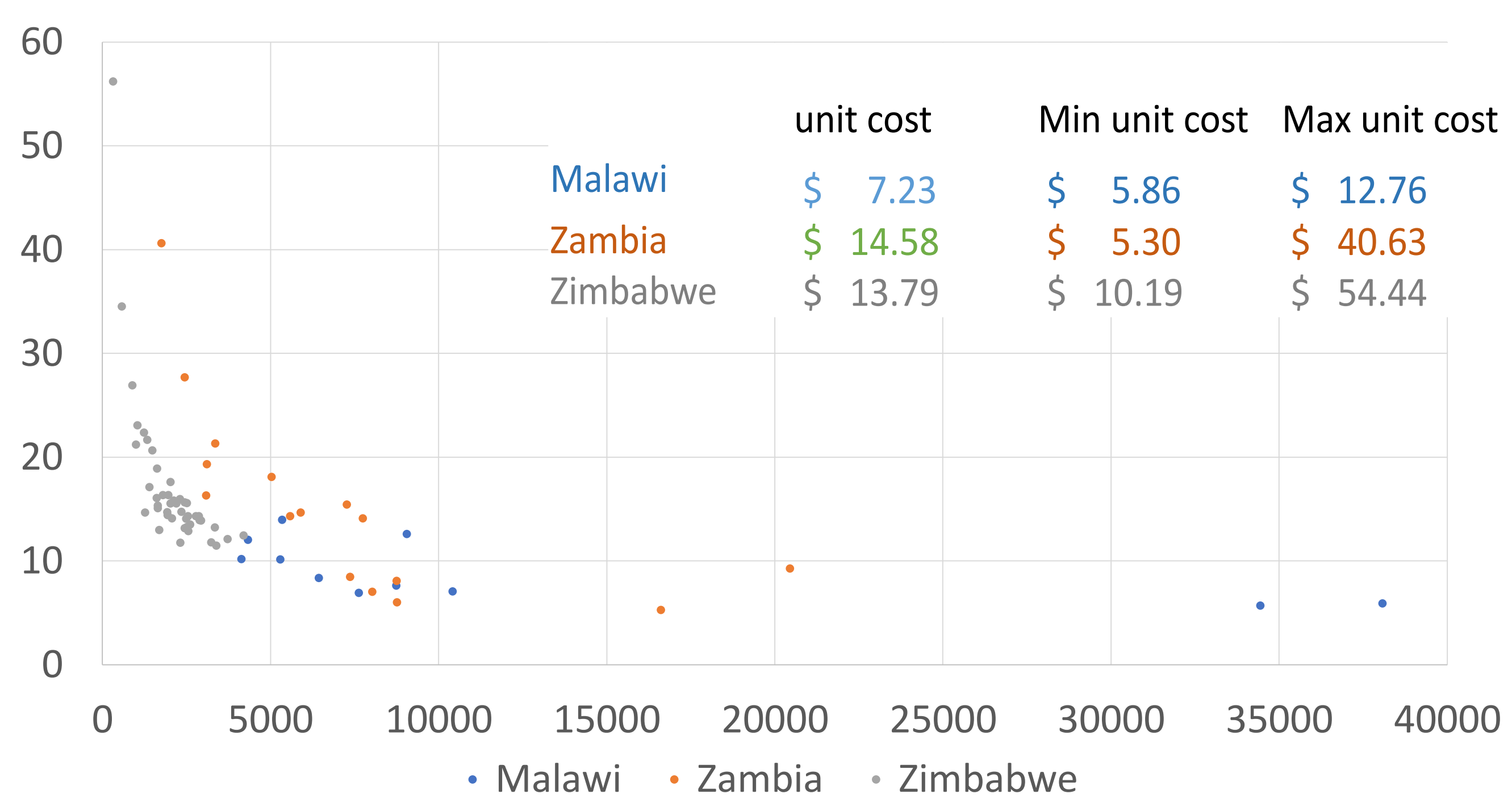
| | Malawi | Zambia | Zimbabwe |
|--|--------------------------|--------------------------|----------------------------|
| National HIV prevalence among adults 15 to 49 years (%) | 10.0 | 12.3 | 14.6 |
| Number of districts & sites | 4 (11) | 4 (16) | 8 (44) |
| Catchment population of sites: Mean (range) | 27,439 (5,500– 82,581) | 18,266 (7673– 50,094) | 3,196 (549– 6,699) |
| Location: Rural (urban or peri-urban) | 9 (2) | 16 (8) | 44 (0) |
| Total country HIVST kit distribution (CBDA) | 137,915 | 103,606 | 93,459 |
| Scale of current HTS - based on facility HTS | 16,921 | 27,888 | 44,727 |
| % distribution - Men | 49% | 51% | 43% |
| Men attendance at HTS - % Men (PHIA) | 34% | 37% | 26% |
| Aggregate country program cost | US\$1,020,364 | US\$1,510,570 | US\$1,288,689 |
| Cost per HIVST kit distributed | US\$7.23 | US\$14.58 | US\$13.79 |
| Facility HTS cost per person tested (US\$): Mean (range) | US\$5.03 (\$2.95-\$8.33) | US\$4.24 (\$2.49-\$6.24) | US\$8.79 (\$3.38 -\$21.51) |

Unit cost breakdown



Main cost drivers were personnel & per diems, HIVST test kits & other supplies. Other key cost contributors were start-up & recurrent training. Unit costs were less in high distribution implementation sites suggesting economies of scale and ability to deliver at lower costs in more densely populated communities

Unit costs by site & quantity



Conclusions and recommendations

CBDA HIVST can complement existing HIV testing approaches to achieve impact (meet global testing & treatment targets) by targeting key populations: those not coming to facilities (not leaving anyone behind) i.e. settings with high undiagnosed HIV or remote communities, & key populations, men & adolescents & other hard to reach. Potential for lower future costs of distribution by optimizing economies of scale & scope, use of lower cost community-led distribution models. Less training, community sensitization & campaign style distribution can reduce costs as staff costs contribute substantial portion of costs. 10-20% of costs are start-up & initial capital - decrease with service maturity

