

# Exploring Efficiencies in PITC

*Summary of CHAI Analyses*

October 2021



# CHAI is supporting Ministries and partners to Identify and scale more efficient models of testing

**Over the last few years there has been a push across countries to make testing more targeted**



Efforts to reduce volumes and increase yield rates within facilities, including through implementing screening tools



Shifting investment towards the scale-up of highly targeted strategies like index testing



Scale-up of innovative strategies like HIV self-testing to identify PLHIV not previously accessing testing services

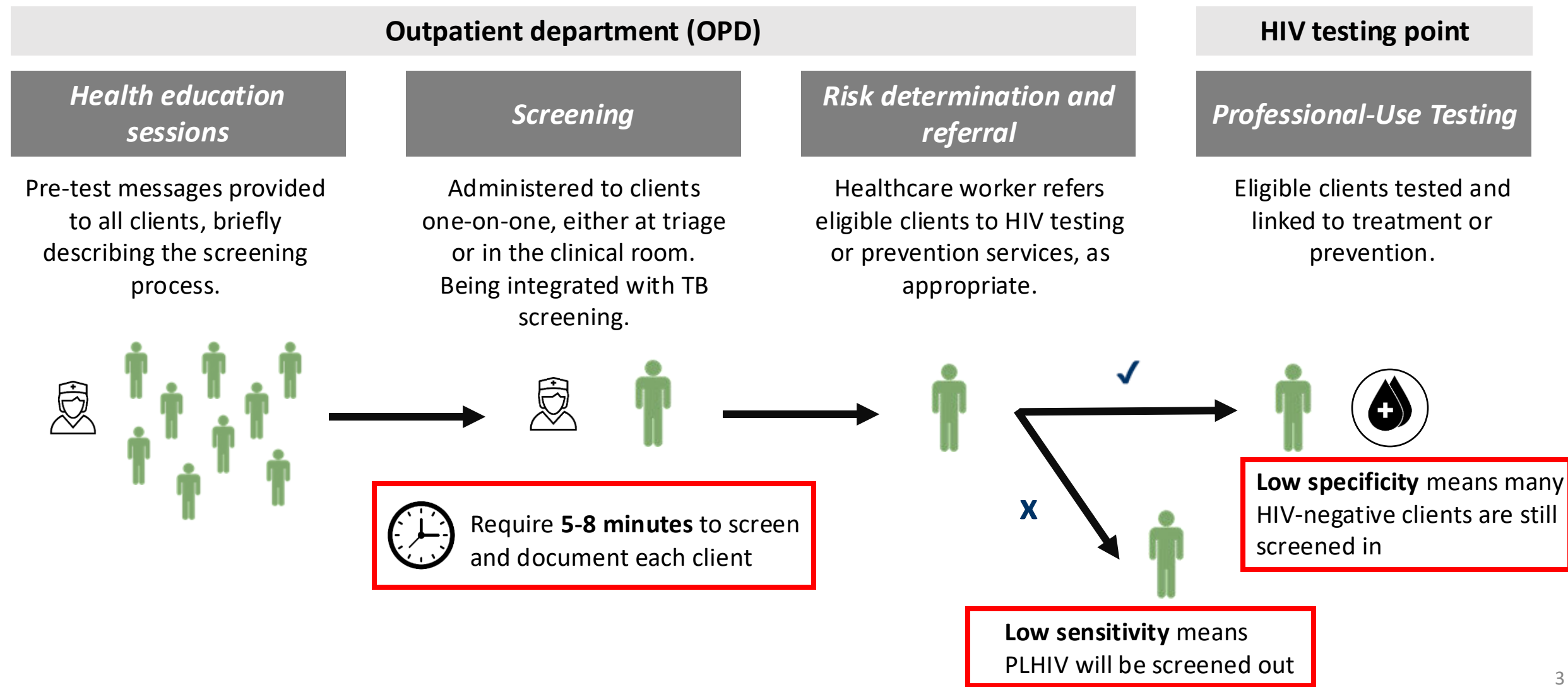
**Implementation experience over this period has highlighted some new learnings and challenges**

- While screening tools can increase testing yield, they also screen out PLHIV and can be HCW time intensive to implement
- Highly targeted modalities such as index testing should be maximized, but also resource intensive and inherently limited in reach
- Facility based testing has key advantages- large population reach, captive audience, linkage facilitation- but current model of care not optimized for health system and clients

**How can we best target priority populations in a way that leverages the benefits of facility-based testing while reducing the burden on the health system and clients?**

# Evaluating risk based screening tools: The time required to screen combined with the typically low sensitivity and specificity of these tools, often results in a high burden on HCW time and reduced number of PLHIV identified

## Client Pathway with Risk-Based Screening Tool Implemented – based off implementation in Uganda

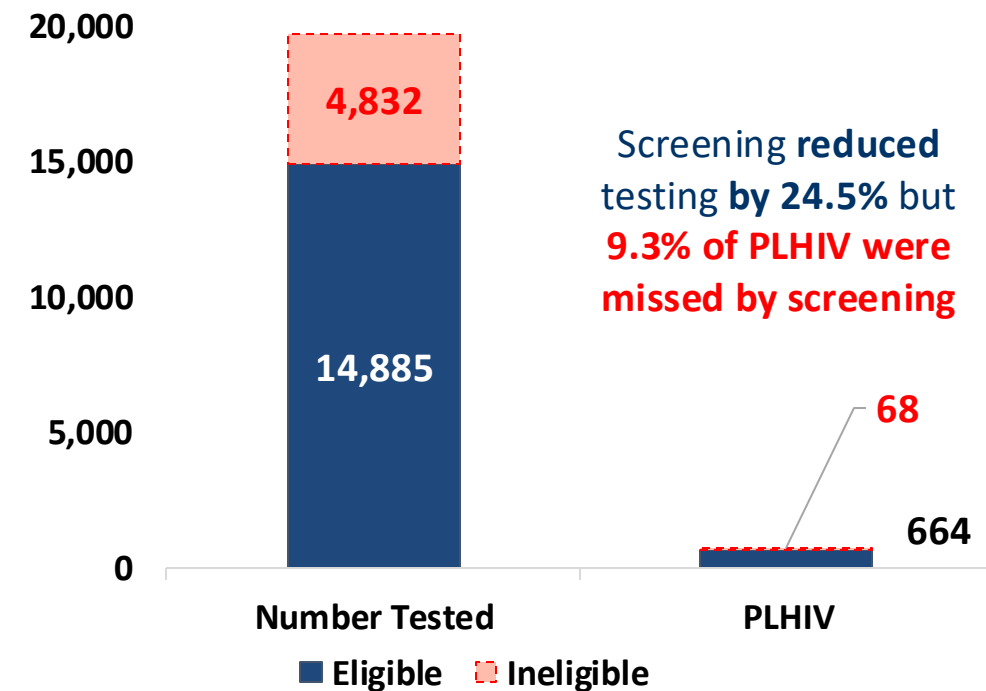


# Evaluating risk based screening tools: An evaluation of a risk-based screening tool in Uganda found that screening did not significantly increase yield rate and would miss nearly 10% of PLHIV

Analysis modeled the potential impact of scaling screening nationally in OPD, based on the sensitivity of the screening tool, current facility testing volumes, and HR and commodity costs in Uganda.

- Screening could reduce the number of A1 tests by 2.2 million, with cost savings of approximately \$1.5 million (~6%)
  - Costing accounted for HR and commodities
  - Does not reflect the full costs of implementing screening (training, printing and dissemination of tools, M&E, etc.)
- **If scaled nationally 22,131 PLHIV would be screened out in OPD**
  - There are significant costs to missing PLHIV, delaying diagnoses and initiation onto treatment
  - PLHIV screened out at the facility will likely need to be identified through other strategies that are more expensive than facility-based testing

Evaluation of Uganda national screening tool  
2019




Yield rate increased from 3.71% to 4.46%, but this change was not statistically significant.

# Exploring other methods of driving efficiencies within facilities: Evidence indicates that HIVST could be used as a highly sensitive screening tool (A0) at OPD to increase testing coverage and generate efficiencies


## 1 Reaching Priority Populations

*In collaboration, PIH and CHAI sought to examine under-reached populations' use of facility-based health services.*

**The survey found that, contrary to popular belief, under-reached populations visit facilities, but are not regularly offered HTS**



42% of youths and men surveyed had either never been tested or had not tested in the last two years

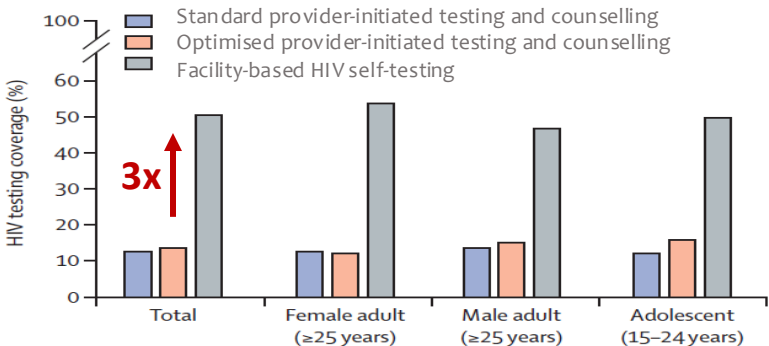


Even though 80% of those youth and men reported attending a health facility in the last two years

## 2 Testing Uptake

*PIH's initial study found that HIVST in facilities is acceptable, increases testing uptake, results in similar positivity rates to standard HTS, and increases new identifications.*

**HIV testing coverage by sex and age across trial groups (n=5,885)**



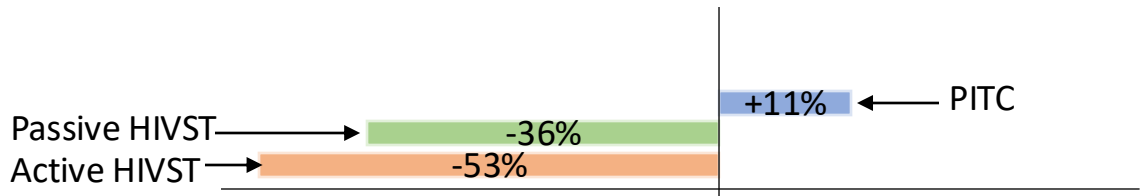
**HIVST lead to a 3x increase in overall testing uptake among priority populations, including men & young people**

## 3 Program Efficiency

*PIH recently conducted a second study on HIVST distribution in facilities, which had a secondary outcome focused on HCW time required per test completed.*

**Both HIVST arms required significantly less HCW time than provider-initiated testing and counseling**

**Percentage time saved/gained per test completed, per arm**



Source: Dovel, K, Shaba, F, et. al. Effect of facility-based HIV self-testing on uptake of testing among outpatients in Malawi: cluster randomized control trial, *Lancet Global Health*. 2020; Dovel, Balakasi, et al. Missing men or missed opportunity? Men's frequent use of health services in Malawi. *IAS*. 2020  
 \*Active HIVST differed from Passive HIVST in that providers initiated the distribution of HIVST 1:1 in a private area, not in a group.

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In 2019, CHAI and Partners in Hope conducted a survey, which found that priority populations do visit health facilities, but are not always offered HIV testing; signaling an opportunity to further optimize facility testing

A study conducted by Partners in Hope (PIH) in Malawi, which sought to examine under-reached populations' use of facility-based health services over the past four years, found that **under-reached populations, specifically men and young people, do visit facilities as both clients and guardians, but are not being offered HTS.**

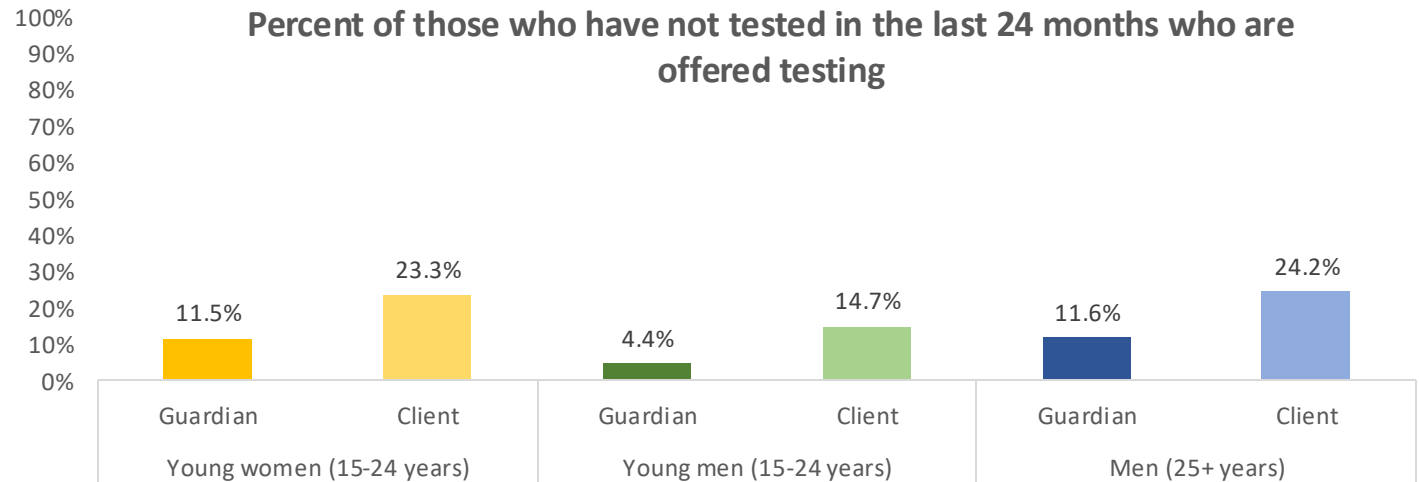
### Community Survey Findings



42% of youth and men who were surveyed were in need of testing (i.e., had never been tested or had not tested in the last two years)



80% of those in need of testing attended a health facility in the last two years



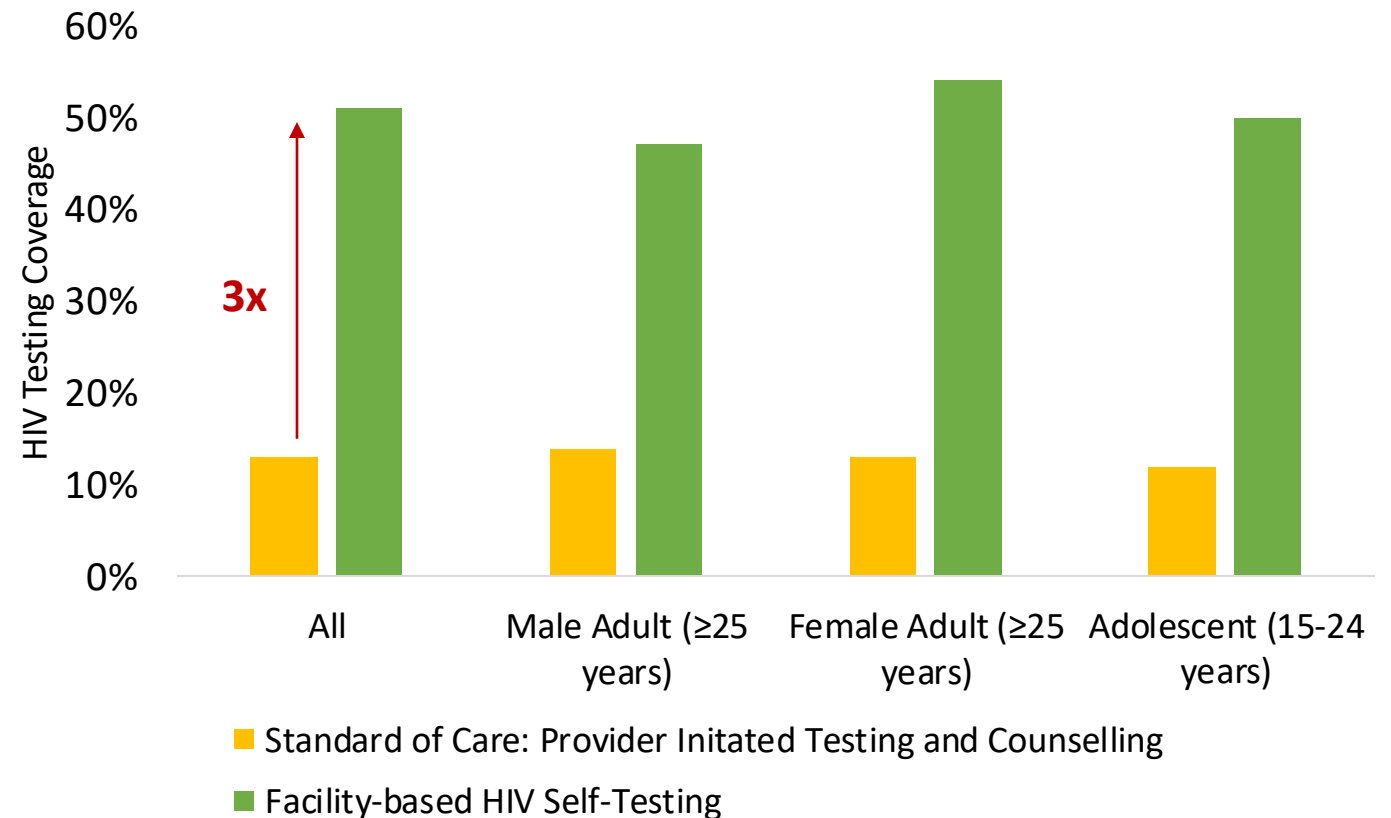
**Only 5-24% of people who had not tested in the last two years and who visited a facility as a client or guardian were offered testing**

PIH had separately conducted a study in Malawi, which found that distribution of HIVST at OPD increased testing uptake among priority populations and improved linkage to care, as compared to community HIVST

## Results

- HIVST offered in facilities is **acceptable**
- **Results in similar positivity rates to standard PITC**
- **Can lead to a 3x increase in overall testing uptake (see figure) among priority populations, including men and young people**
- **Higher linkage to care than community-based HIVST distribution**

## HIV testing coverage by sex and age across trial groups (n=5,885)



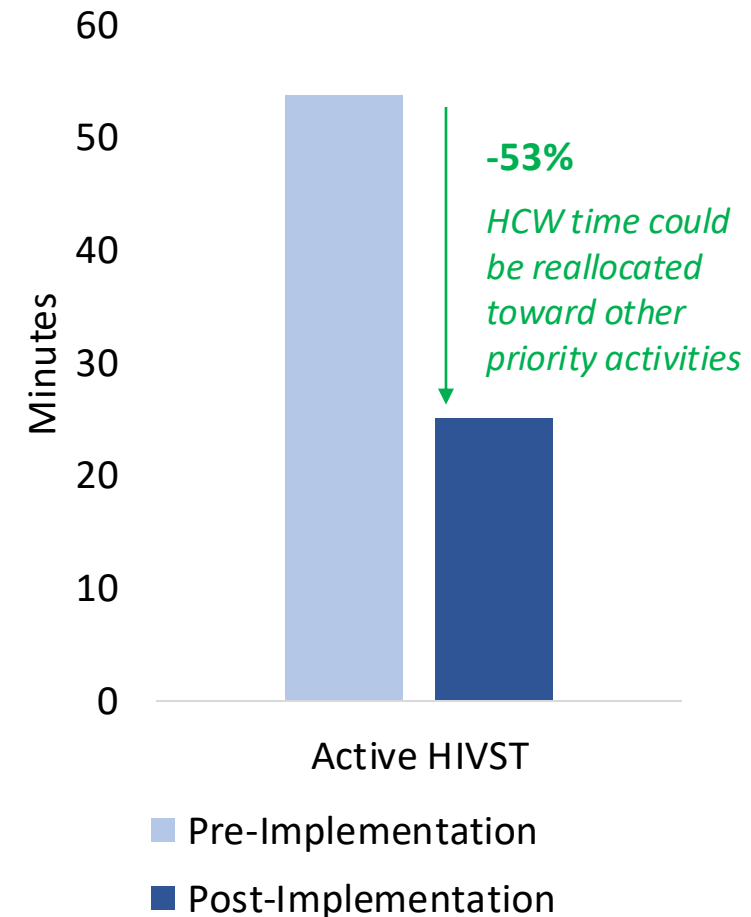
CHAI collaborated with PIH for a follow-up study in Malawi, which confirmed that offering HIVST to clients at OPD increased rates of testing and found that it reduced health provider time per test completed by 53%

### Implementation of Active HIVST

- In 2020, Partners in Hope implemented facility-based HIVST at OPD in 3 facilities in Malawi.
- A provider demonstrated how to use an oral HIVST kit during the health talk and clients who were interested in HIVST were confirmed as eligible (i.e., never tested positive, never tested or tested more than 12 months ago).
- All activities took place prior to routine OPD services and were implemented by cadres with no more than a secondary school certificate.

Outcomes	Pre-Implementation	Post-Implementation
Same-day testing, among those in need of testing	7%	26%
New HIV-positives, among those tested (Yield)	0	8%
Same-day ART initiations, among new positives	N/A	88%

### Total Health Care Worker Time per Test Completed



# CHAI developed a model to estimate costs, time requirements, and PLHIV identified across three testing approaches

**Modeling Question:** Could using HIVST as a screening tool be more cost effective and efficient than risk-based paper screening tools in identifying people in need of professional-use HIV testing?

## Model Structure

**Scope:** Analyzes a hypothetical population of **1,000,000 adults** who would be tested for HIV at OPD. The model does not account for any increase in testing uptake due to either a wider pool of clients being screened or introduction of HIVST.

### Scenarios:

**Current Testing Approach**  
PITC for every client

**Risk-Based Screening**  
Providers individually screen each client using a risk-based tool

**HIVST as an A0**  
All clients are screened using an HIVST and those with a reactive test are tested by a provider

### Outcomes:

- # of PLHIV Identified
- # of A1 Tests Conducted
- # of Overall Tests Conducted
- # of HCW Hours Required for Testing
- Commodity Costs
- Labor Costs

The model is based on data generated through the Ugandan Ministry of Health Screening Tool Evaluation and from PIH's implementation studies on facility-based HIVST in Malawi

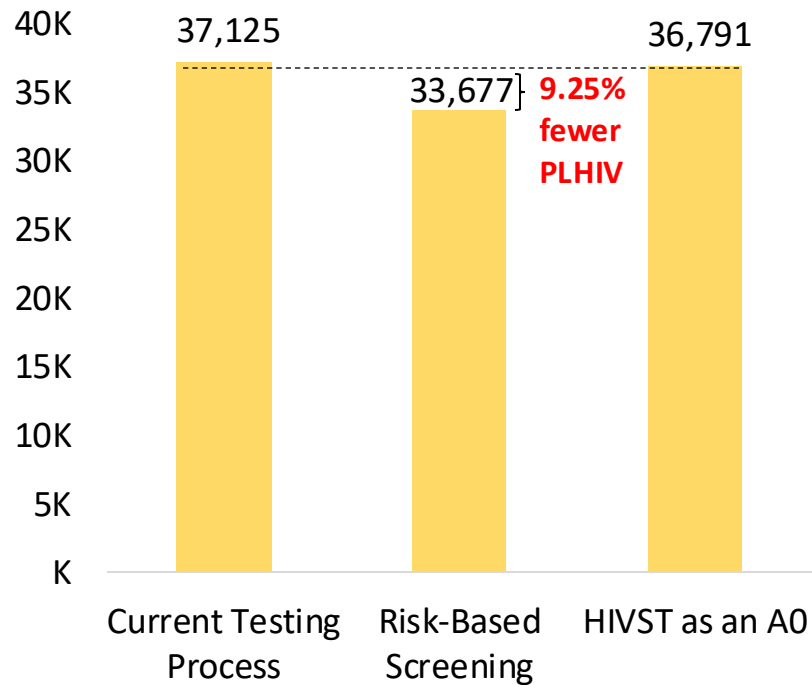
## Model Assumptions

	Current Testing Approach	Risk-Based Screening	HIVST as Screening Tool
% of Clients Screened	N/A	100%	100%
% of Clients Screened-In for an A1 Test	100%	75%	3.71%
% of Clients Testing Positive at A1	3.71% <i>(Baselined yield in Uganda screening tool eval)</i>	4.46% <i>(Yield for those screening in in Uganda screening tool eval)</i>	95.01% <i>(Calculated from baseline yield and sens/spec of OraQuick and Determine)</i>

Time Required	<ul style="list-style-type: none"> <li>Group health talk with pre-test information (<b>7 min per group</b>)</li> <li>Professional-use testing for those screened in</li> <li>Individual post-test counseling (<b>5 min per negative/10 min per positive</b>)</li> </ul>		
		Delivery & documentation of screening questions ( <b>+5 min per person</b> )	<ul style="list-style-type: none"> <li>Group demonstration &amp; distribution of kits (<b>+11.5 min per group</b>)</li> <li>Individual support/assistance to clients (<b>+2 min per person</b>)</li> </ul>
Sources	<ul style="list-style-type: none"> <li><i>Ugandan MoH Screening Tool Evaluation</i></li> <li><i>Preliminary PIH Data on Facility-Based HIVST</i></li> <li><i>CHAI Uganda Team</i></li> </ul>		

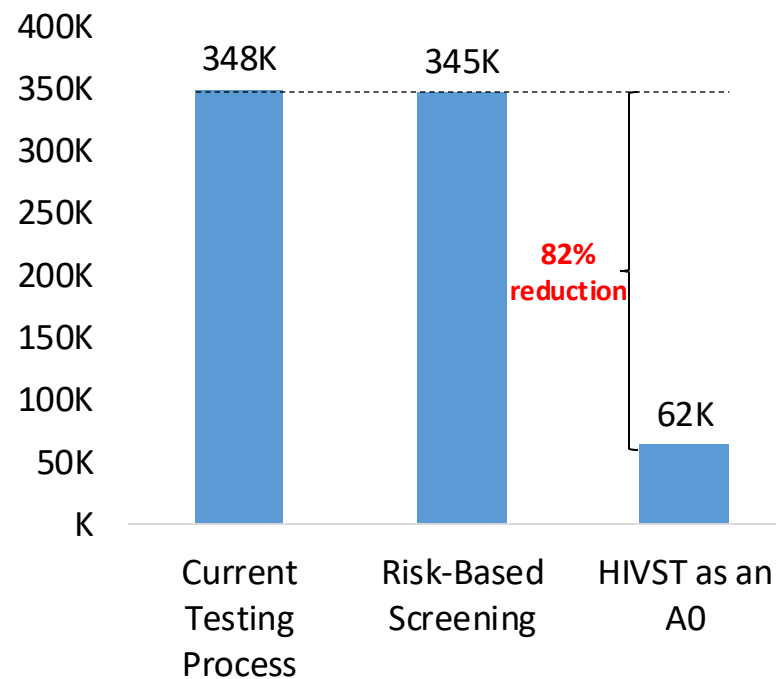
Using HIVST as an A0 in OPD at facilities could identify 9% more PLHIV than using a risk-based paper screening tool while reducing healthcare worker time spent on testing by 82%

Number of PLHIV Identified by Testing Approach



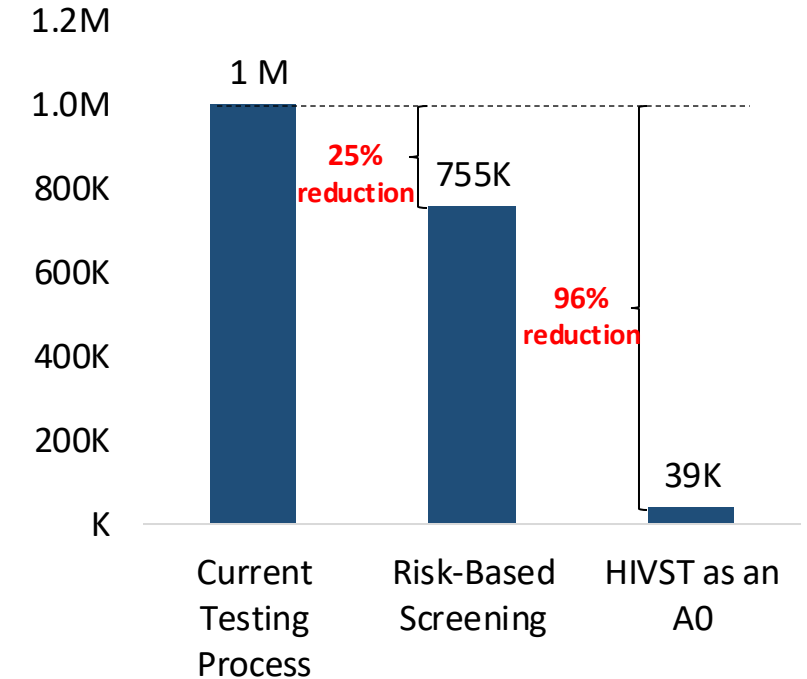
Implementing any sort of screening within the existing testing population will reduce the number of PLHIV identified, as no tool will be 100% sensitive

Total Hours Required by Testing Approach



Using HIVST as an A0 would decrease the total amount of HCW time required for testing by 82%.

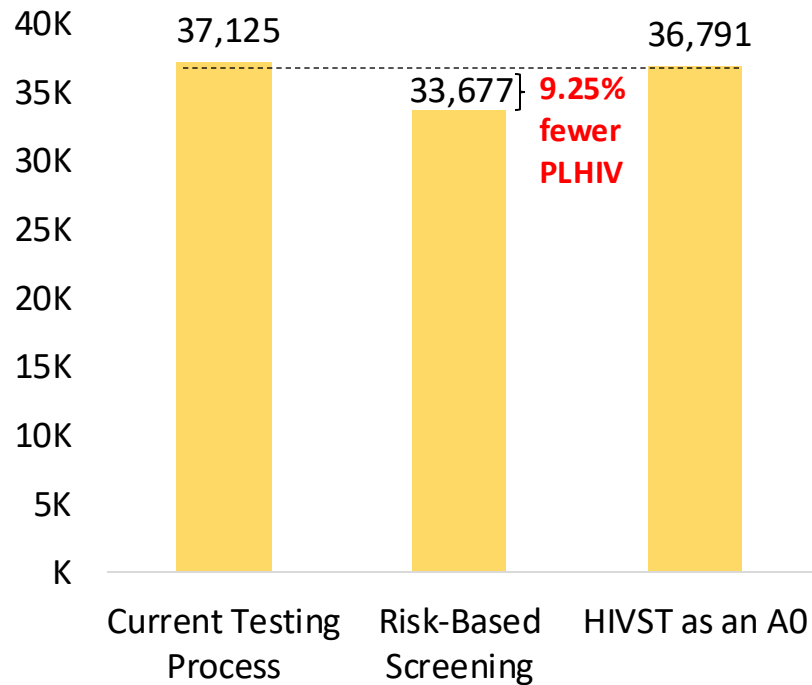
Total Number of A1 Tests Required by Testing Approach



The major driver of the HCW time savings is a **96% decrease in number of A1 tests required** as only those that screen A0-positive would be referred for professional-use testing

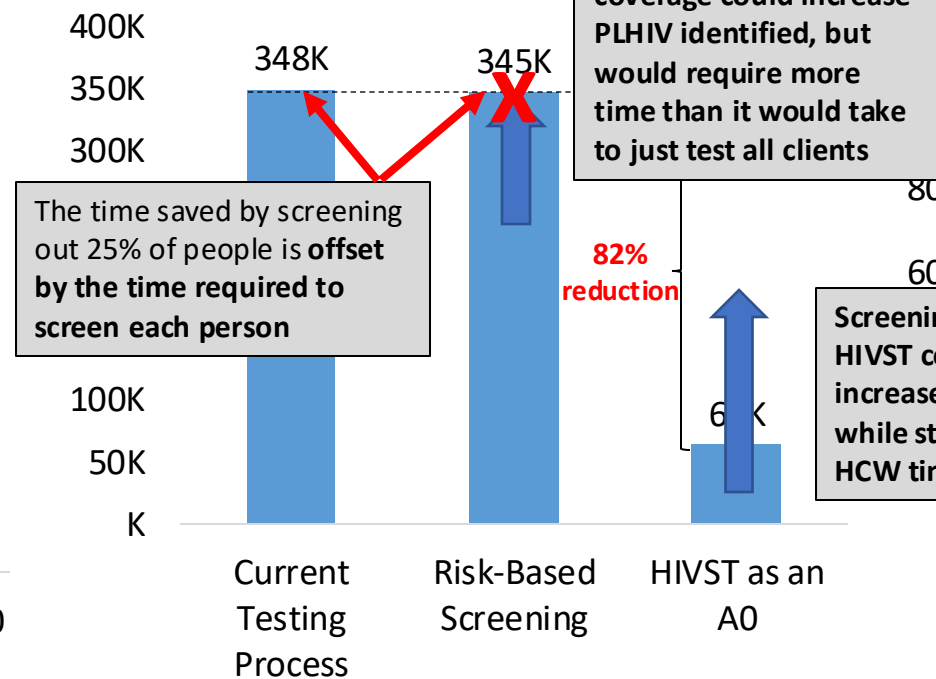
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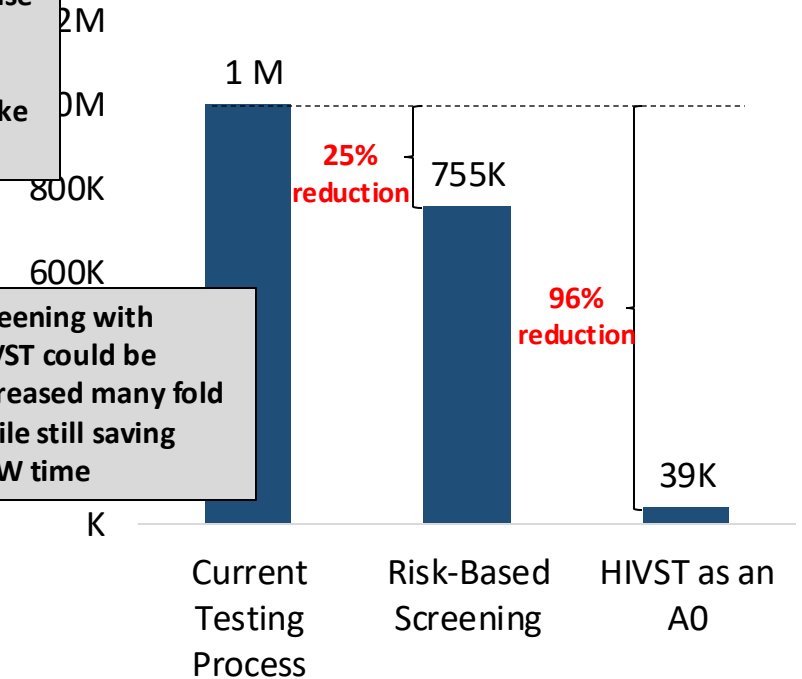
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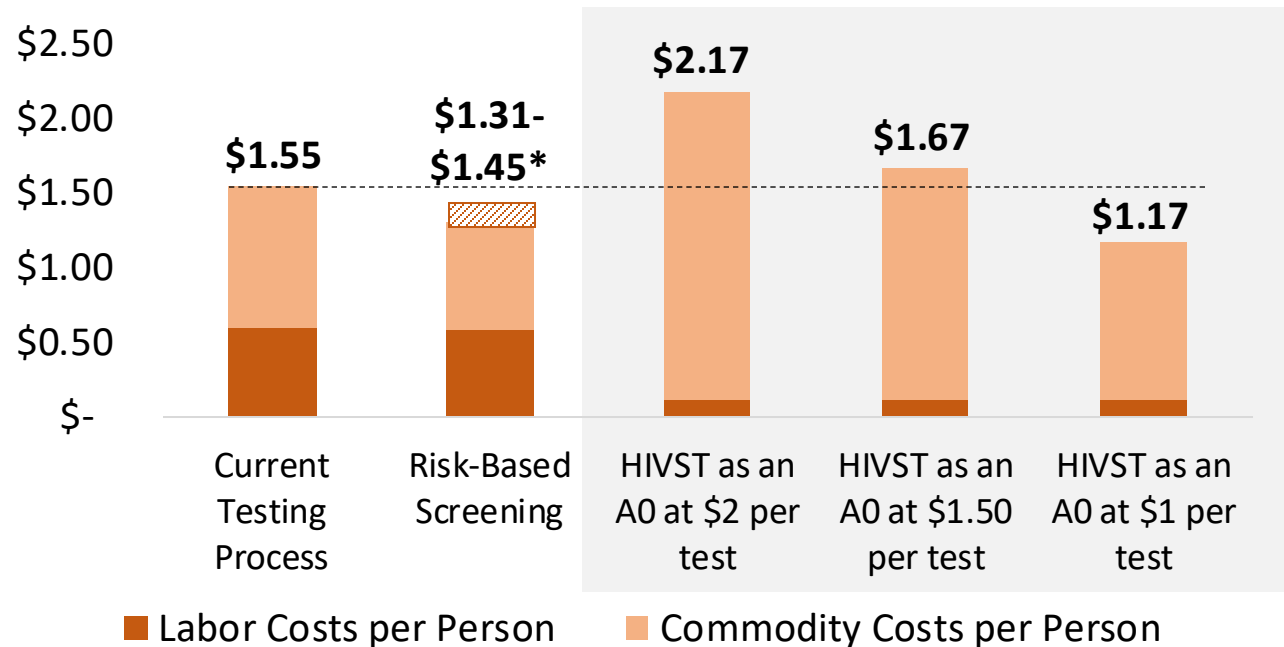
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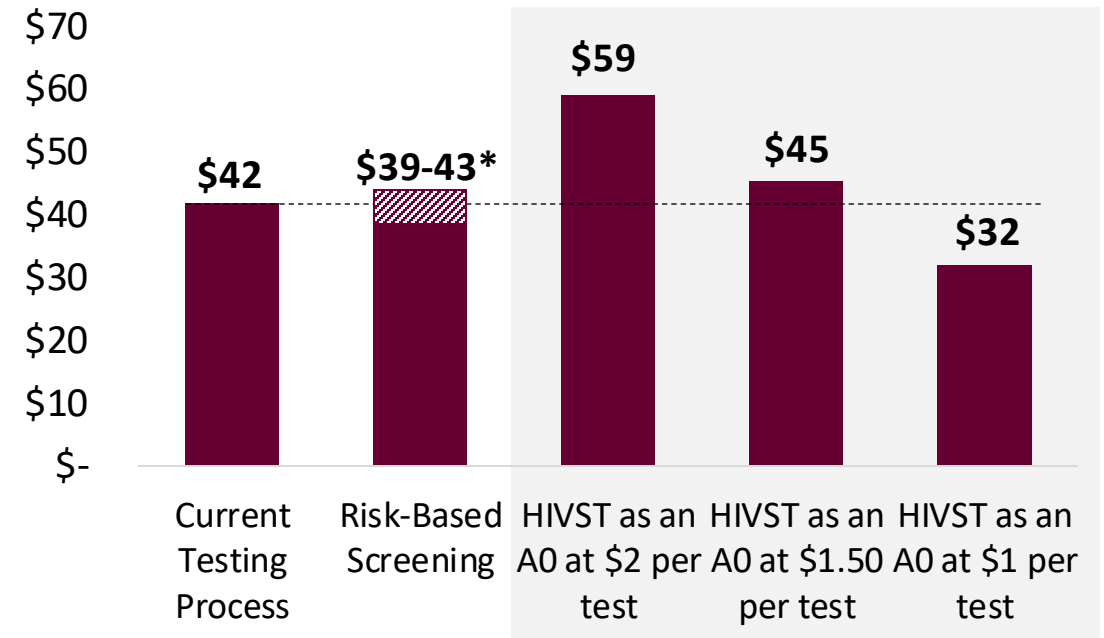
The major driver of the HCW time savings is a 96% decrease in number of A1 tests required as only those that screen A0-positive would be referred for professional-use testing

As the price of HIVSTs decrease, costs per person tested and cost per PLHIV identified will be comparable to and eventually lower than current PITC and using risk-based screening tools

**Combined Labor and Commodity Costs per Person Screened and Tested**



**Cost per PLHIV Identified**



- In the HIVST scenarios, the **main cost driver is the cost of HIVST products**
- At a slightly reduced price of \$1.50 per kit, the total cost per person would be comparable to the current testing approach
- **At a \$1 price per HIVST kit, using HIVST as an A0 would cost 24% less than universal PITC and 18-25% less than risk-based screening approaches**

\*Low-end cost range for risk-based screening represents estimated costs where screening tool takes 5 min to administer, high-end range represents costs where screening tool takes 10 min to administer

Expanded use of HIVST as a screening tool within facilities could expand testing coverage to priority populations, reduce HCW time spent on testing, and generate cost-savings

### **Benefits of HIVST as a facility-based screening tool:**

- Highly sensitive and specific
- Increased testing coverage and uptake among priority populations
- Significant reduction in HR capacity required for testing compared to current PITC and risk-based screening
- Many HTS providers already trained on HIVST distribution
- In the context of COVID, reduces direct HCW-patient contact and can help decongest facilities while maintaining HTS delivery
- Introduction of lower-priced HIVST products will generate cost-savings