AIDS 2020
EXHIBITION
Towards Sustainability and Scalability of HIV Self-Testing
Costing of HIVST distribution and linkage models
Moderator   Karin Hatzold, STAR Consortium
Presenters   Fern Terris-Prestholt, LSHTM
& Linda Sande, LSHTM
WHAT DOES IT COST?
Measuring costs and implications for cost-effectiveness of HIVST

Fern Terris-Prestholt
Associate Professor in the Economics of HIV
London School of Hygiene & Tropical Medicine

Linda A. Sande
Ph.D Candidate (Health Economics)
London School of Hygiene & Tropical Medicine

On behalf of the STAR Economics Network

Lawrence Mwenge
Pitchaya Indravudh
Galven Maringwa
Nurilign Ahmed
Valentina Cambiano
Collin Mangenah.
Marc D’Elbee.
Gesine Meyer-Rath
Katleho Matsimela.
Jason Ong
Euphemia Sibanda.
Cheryl Johnson

Hendramoorthy Maheswaran

HIV SELF-TESTING AFRICA INITIATIVE
Unitaid
London School of Hygiene & Tropical Medicine

CENTRE FOR HEALTH ECONOMICS IN LONDON

23RD INTERNATIONAL AIDS CONFERENCE VIRTUAL

2023
Outline

- Unit costs and the role of
  - Full versus Incremental costs
  - Economies of Scale
  - Programme maturity and adaption
  - Economies of scope
  - User behaviour
  - Influencing user behaviour
  - “Successful” programmes
- Lessons for scale up and sustainability
Measurement of costs

Unit cost = Unit cost?

Impact of
• Financial & Economic
• Full & Incremental
Choosing appropriate cost approach

• Some definitions
  • **Financial** cost: expenditures only
  • **Economic** costs: values donated goods & services
  • **Incremental** costs: Only extra resources used
    • Only appropriate if project not major activity
  • **Full** costs: Includes a proportion of shared costs, e.g. central costs
Choosing appropriate cost approach

**HIVST programme**
- Vertical approach delivery: **Full costing**
- Added testing modality: **Incremental approach**
  - Always integrated into other services (HTS, ART, IST, etc.),
  - Incurring significant shared costs
  - Base programme is working well and will continue to into the future
- Cost analysis: **method 3**

**HTS programme**
- Standard of care: rapid HIV testing programme
- Full costing - gold standard
- Costing analysis: **method 4**

*Alternative cost analyses can be modelled based on full economic costing as appropriate*

<table>
<thead>
<tr>
<th>Incremental cost analysis</th>
<th>Full cost analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial costs</strong></td>
<td></td>
</tr>
<tr>
<td>$+</td>
<td>$++</td>
</tr>
<tr>
<td><strong>Economic costs</strong></td>
<td></td>
</tr>
<tr>
<td>$++++</td>
<td>$+++++</td>
</tr>
</tbody>
</table>

=> Intended use (priority setting, budgeting, financial planning for scale-up) of the cost estimate will consider the selection of the appropriate analysis method
HIV Self-testing added onto mobile HTS in Lesotho 2017-2019 – D’Elbee

HTS & HIVST cost drivers
- Full vs. incremental
HIVST cost analysis

- HIVST Supplies
- HIVST Personnel & Per diems
- HIVST Personnel & Per diems - HQ
- HTS Supplies
- HTS Personnel & Per diems
- HTS Personnel & Per diems - HQ

Unit costs/person tested ($)

<table>
<thead>
<tr>
<th>Period</th>
<th>Full costs</th>
<th>Incremental costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$19.5</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>$28.0</td>
<td>$33.7</td>
</tr>
<tr>
<td>3</td>
<td>$45.7</td>
<td>$17.0</td>
</tr>
<tr>
<td>4</td>
<td>$47.9</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>$60.0</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>$80.0</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>$1,000.0</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>$1,200.0</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>$1,400.0</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>$1,600.0</td>
<td></td>
</tr>
</tbody>
</table>

$0
Full to Incremental costs

1. All shared costs are re-allocated to HTS. Incremental costs assume HTS is adequately funded.
2. Budgeting based on incremental costs risks:
   - health system depletion
   - programme collapse if HTS not running well.
**Recommendations: Full versus Incremental Costing**

- Wide range between full and incremental costs
- Health system *needs* for scale up lies somewhere in between.

**Risk Incremental Financial:**
- Under budgeting &
- depleting health system through cross-*subsidisation* from core health services.

**Risk Full Economic:**
- Discarding *C-E* interventions seen as too expensive.

**RECOMMENDATION:**
- consider the purpose and setting
- whenever possible present both
OBSERVED DRIVERS OF HIVST COSTS

Impact of:
• Scale
• Scope
• Maturity
• Yield
Scale: Relationship between costs and quantity

Zimbabwe transport hubs & busy places model, Mangenah 2020

Cost ($) per HIVST kit distributed -

Low volume, high cost

High volume, low cost
Programme maturity & learning: $/kit distributed

d’Elbee, 2020 & Mangenah, 2020

Mobile HIV testing in Lesotho

Evolving models over time - Zimbabwe

In 2020 US$/test
Economies of scope & Screening yield,
Mobile HIV testing in Lesotho, d’Elbee, 2020

$/confirmed HIV+ diagnosis by yield

- '17 HTS only: $800, 3.40%
- '18 HTS+HIVST: $1,200, 3.10%
- '19 HTS+HIVST + onsite testing booths: $1,400, 5.00%

On-site testing booths in Lesotho
Preliminary results South Africa: The role of user behaviour

Meyer-Rath, 2020

Wide variation across models in $ per kit distributed, per recipient screening positive & per recipient confirmed positive
Influencing user behaviour: worth it?
Partner distribution in ANC in Malawi, Sande, 2020

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>SoC</th>
<th>HIVST</th>
<th>HIVST + Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>$1.14</td>
<td>$3.50</td>
<td>$4.18</td>
</tr>
<tr>
<td>Sensitisation</td>
<td>$0.39</td>
<td>$0.42</td>
<td>$0.39</td>
</tr>
<tr>
<td>Other Capital</td>
<td>$0.06</td>
<td>$0.31</td>
<td>$0.26</td>
</tr>
<tr>
<td>Management Costs</td>
<td>$2.35</td>
<td>$3.91</td>
<td>$4.74</td>
</tr>
<tr>
<td>Supplies</td>
<td>$0.33</td>
<td>$0.33</td>
<td>$0.32</td>
</tr>
<tr>
<td>Test Kits</td>
<td>$-</td>
<td>$2.56</td>
<td>$2.56</td>
</tr>
<tr>
<td>Uptake Incentives</td>
<td>$-</td>
<td>$-</td>
<td>$10.00</td>
</tr>
<tr>
<td>Incentive Administration</td>
<td>$-</td>
<td>$-</td>
<td>$4.32</td>
</tr>
<tr>
<td>$/Partner Invite or kit distr.</td>
<td>$4.28</td>
<td>$11.02</td>
<td>$12.45 ex. Incent.</td>
</tr>
<tr>
<td>$/Partner tested</td>
<td>$9.68</td>
<td>$12.18</td>
<td>$15.85 ex. Incent.</td>
</tr>
<tr>
<td>$/Partner Positive</td>
<td>$625</td>
<td>$1,131</td>
<td>$700 w incentive</td>
</tr>
<tr>
<td># positive</td>
<td>9</td>
<td>13</td>
<td>55</td>
</tr>
</tbody>
</table>
Cost by yield: Yield declines & cost per new diagnosis increases as knowledge approaches 90%.

Yield declines as most PLHIV are diagnosed and on ART. At the limit, new diagnoses will represent new infections since most existing infections will already be diagnosed.

Lessons Learned
Costs lessons for HIVST at scale

- Cost ≠ Cost
  
<table>
<thead>
<tr>
<th>↑ UC</th>
<th>↓ UC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Few cases Unidentified</td>
<td>Economies of Scale and Scope</td>
</tr>
<tr>
<td>Harder to reach populations</td>
<td>Programme learning</td>
</tr>
</tbody>
</table>

- Need to be adaptable to allow for learning and operational opportunities,

- Consider user behaviour & success: evolving epidemiology

For further considerations on cost measurement, presentation and scale up: *IAEN Pre-conference session Scaling Up Interventions and the Effects on Costs* Channel 1 IAEN July3
STAR team

- Researchers and implementers from Malawi, Zambia, Zimbabwe and South Africa
- Economics Network
- Quantitative and Epi Research Network
- Qualitative Research Network
- Communities, Ministries of Health and District Health teams

Website: [http://Hivstar.lshtm.ac.uk](http://Hivstar.lshtm.ac.uk) and [https://www.psi.org/project/star/](https://www.psi.org/project/star/)
AIDS 2020
NEXT EXHIBITION
Towards Sustainability and Scalability of HIV Self-Testing
COVID-19 and HIV: Zoom into HIVST pharmacy distribution models, experiences from South Africa and Eswatini
Moderator   Anna Hellstrom, Unitaid
Presenters   Mohammed Majam, Ezintsha
             Ralitza Dekova, PSI Eswatini
             Celeste Madondo, SFH South Africa
STAR EXHIBITION BOOTH

WEDNESDAY, JULY 8

- **HIVST COMMUNICATIONS AND DEMAND CREATION TOOLS: EXPERIENCES FROM THREE COUNTRIES IN AFRICA**
  - **Time:** 4-5AM EDT | 10-11AM UTC+2
  - **Join here!**

- **COSTING OF HIVST DISTRIBUTION AND LINKAGE MODELS**
  - **Time:** 8-9AM EDT | 2-3PM UTC+2
  - **Join here!**

- **COVID-19 AND HIV: ZOOM INTO HIVST PHARMACY DISTRIBUTION MODELS, EXPERIENCES FROM SOUTH AFRICA AND ESWATINI**
  - **Time:** 11-12PM EDT | 5-6PM UTC-2
  - **Join here!**

WEBINAR

HIV Self-Testing: Where Are We with Policy, HIV Self-Test Kit Regulation and Registration and Safety Monitoring

Thursday 09 July 2020
11am EST/ 5pm UTC

Unitaid
Innovation in Global Health

HIV SELF-TESTING AFRICA INITIATIVE

atlas