The CQUIN Learning Network

Annual Meeting

Review of Differentiated Service Delivery Costs

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February 13-15
Maputo, Mozambique

HIV LEARNING NETWORK
The CQUIN Project for Differentiated Service Delivery

ICAP
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Columbia University
Mailman School of Public Health

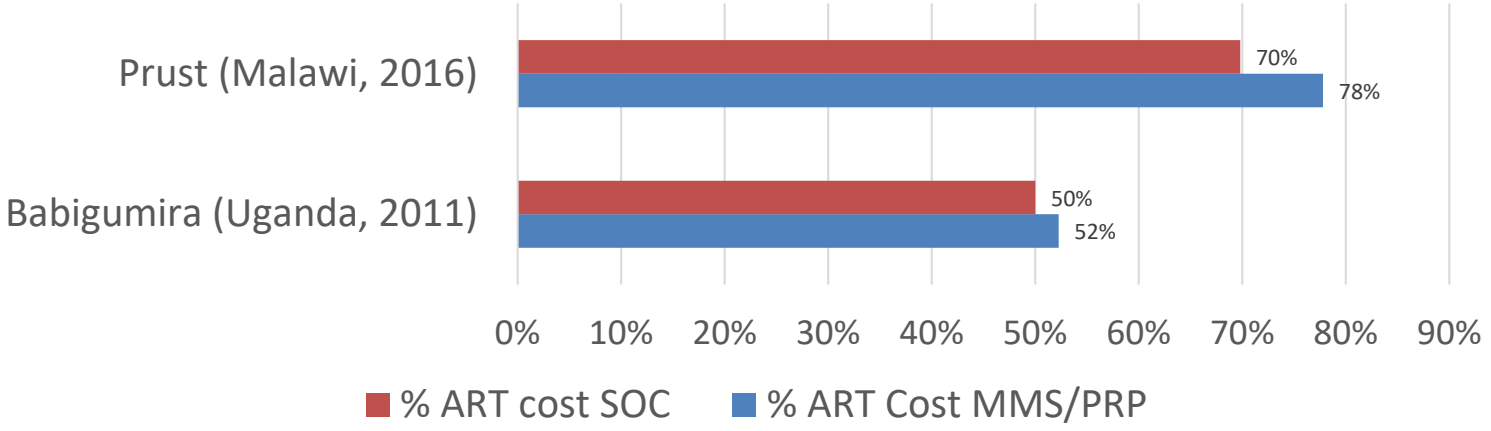
Overview of the Study

- Ongoing systematic review of DSD costs in LMIC
- Searched PubMed
- Identified 37 relevant studies across 13 countries
- Differentiated Care Categories:
  - Facility-based individual models
  - Out-of-facility individual models
  - Group models
  - Targeted testing

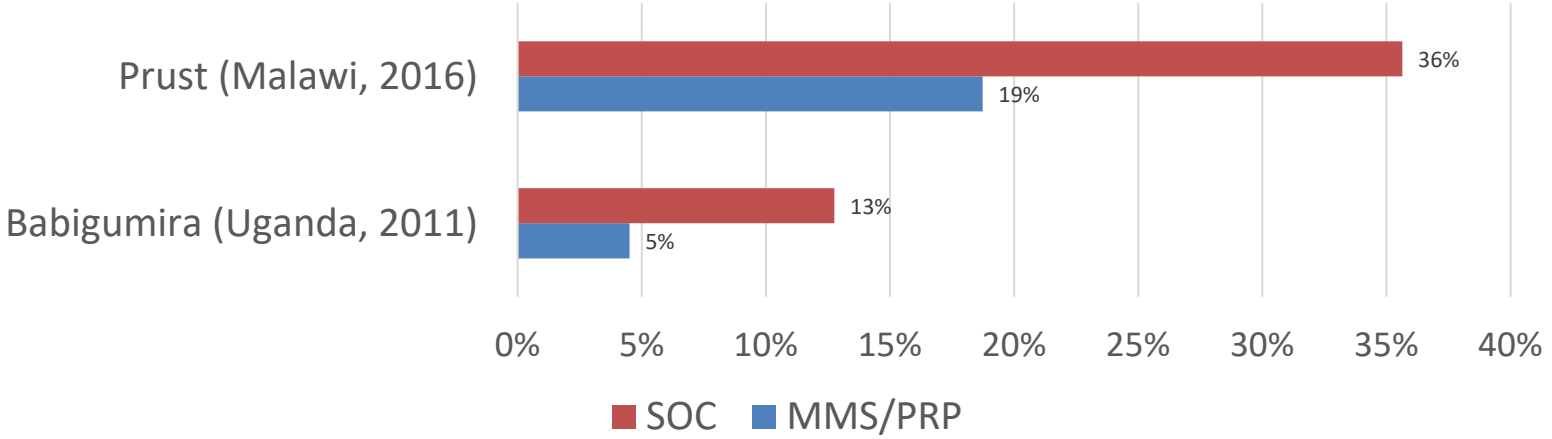
Facility-based Individual Models

- ART visits separated from clinic consultations
- Examples:
  - Pharmacy-only refill program (PRP)
  - Multi-month scripting (MMS)
- Primary Costs
  - ART
  - Health personnel

ART Portion of Recurring Costs



Personnel Portion of Recurring Costs (excl. ART)

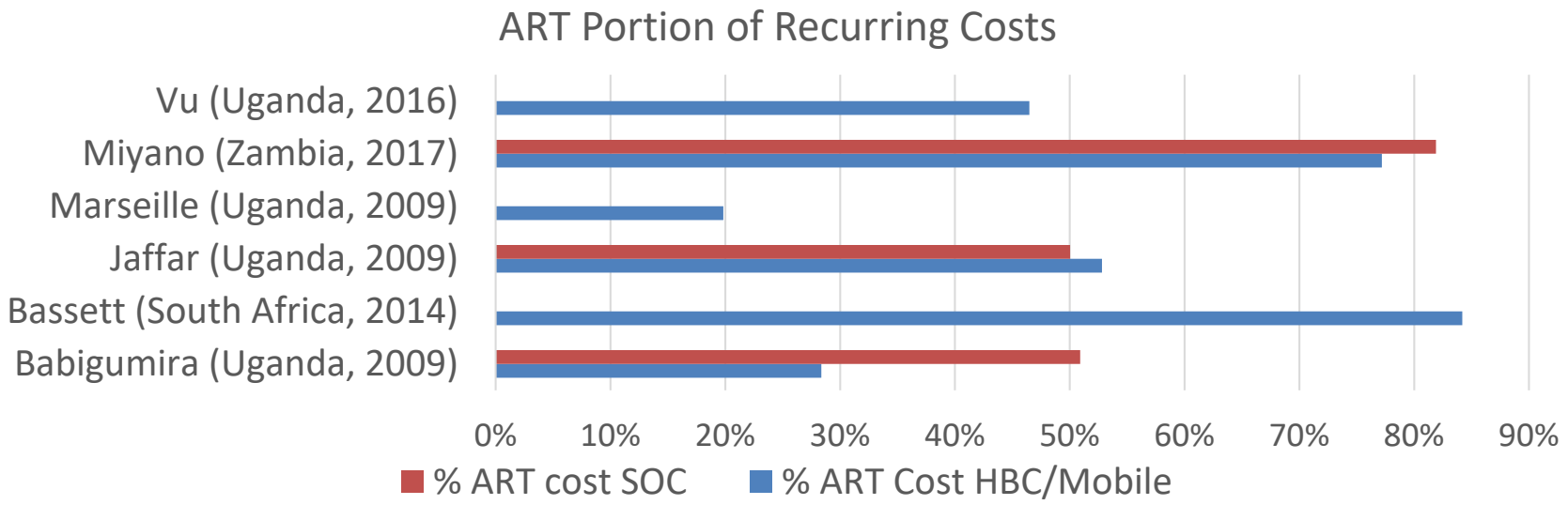


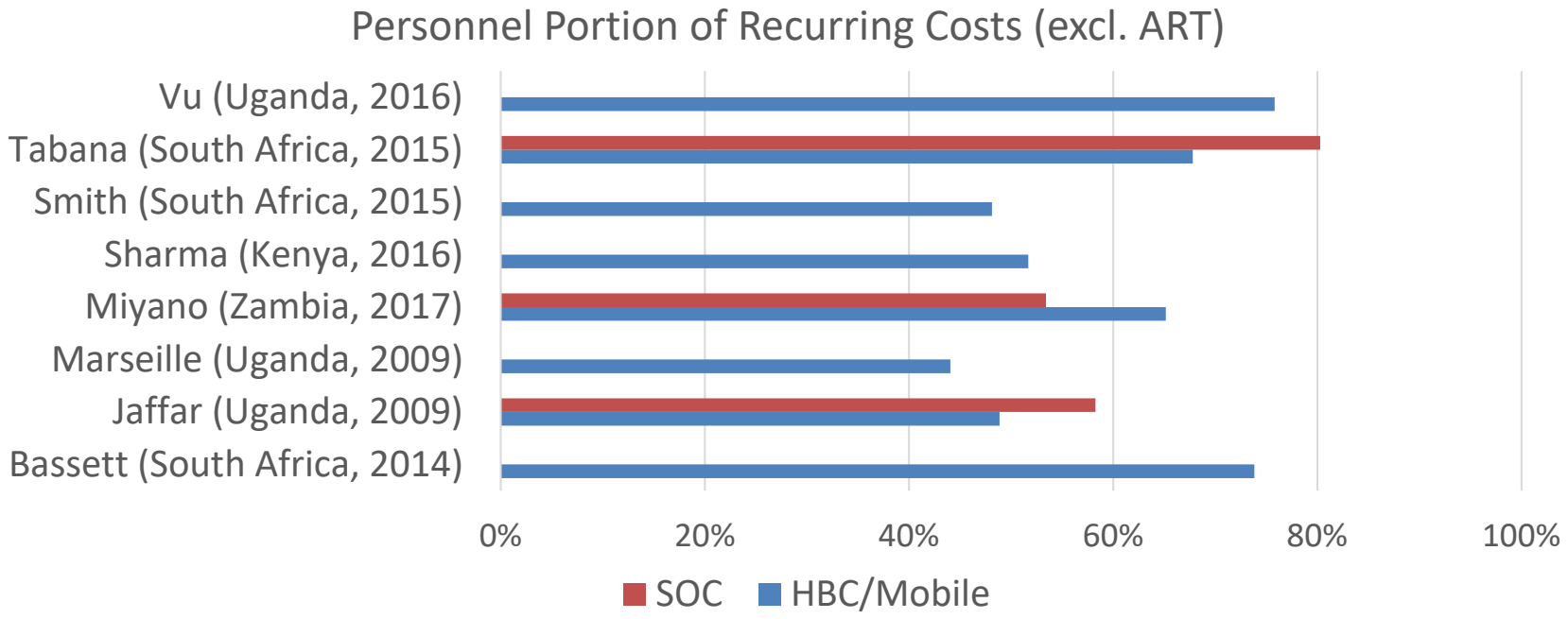
Study	Bango (South Africa, 2011)	Prust (Malawi, 2016)
Recurrent Cost (MMS/PRP:SOC)	0.91	0.66
Personnel Cost (MMS/PRP:SOC)	0.32	0.35

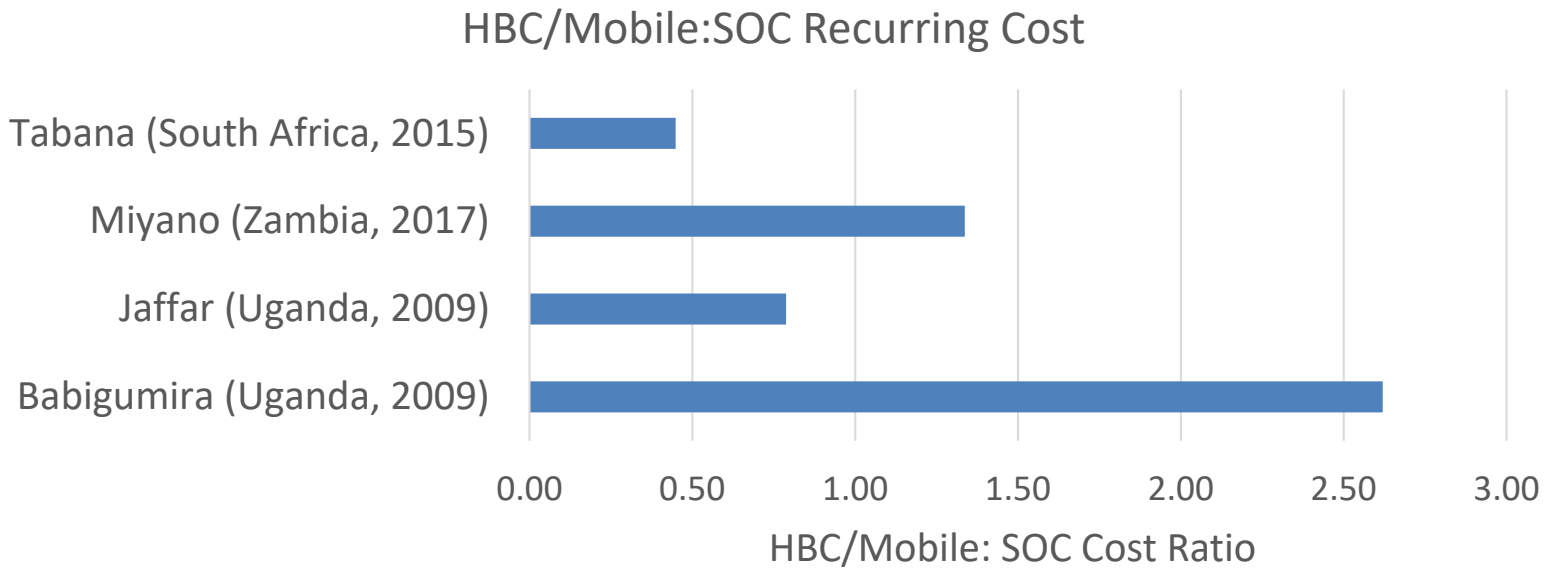
- Personnel costs in both MMS/PRP scenarios were lower than SOC
- Lower demands on clinician time
- As ART prices decrease, differences in personnel costs will have greater influence on cost-effectiveness

Out-of-facility individual models

- Care is administered outside health care facilities
- Examples:
  - Home-Based Adherence and Care (HBAC)
  - Mobile clinics
- Primary Costs
  - Vehicle cost for van, driver, petrol, etc.
  - HBAC personnel cost depends on level of training/education


ART Portion of Recurring Costs
Vu (Uganda, 2016)
Miyano (Zambia, 2017)
Marseille (Uganda, 2009)
Jaffar (Uganda, 2009)
Bassett (South Africa, 2014)
Babigumira (Uganda, 2009)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
% ART cost SOC
% ART Cost HBC/Mobile

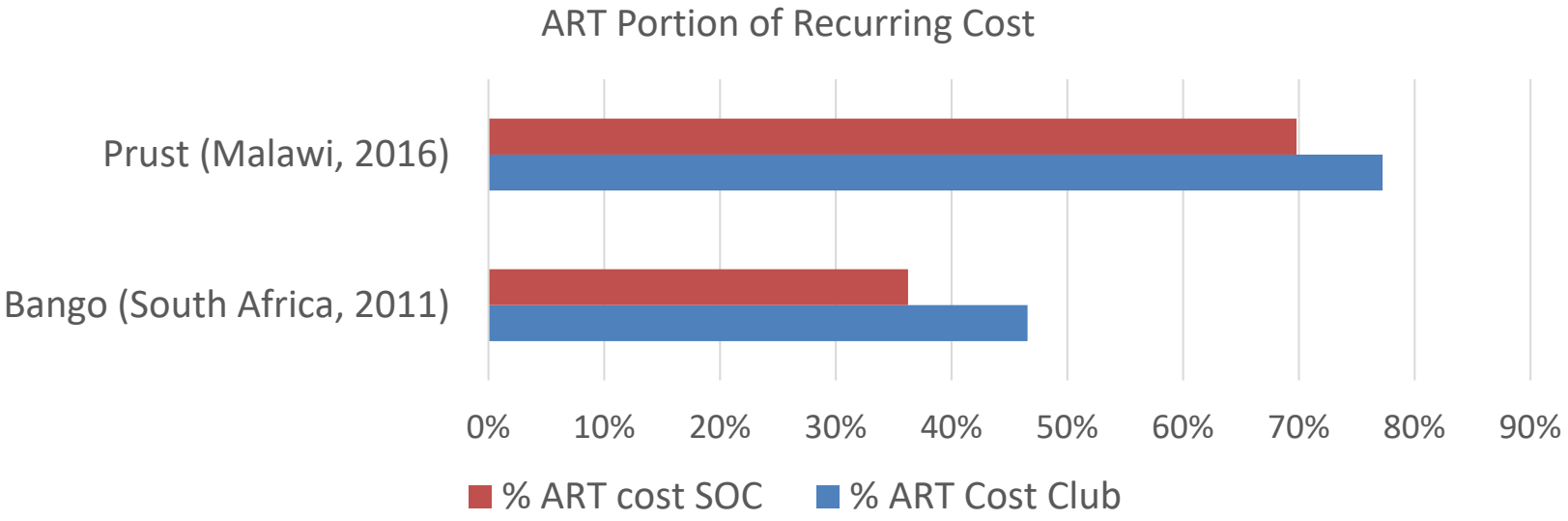

Personnel Portion of Recurring Costs (excl. ART)
Vu (Uganda, 2016)
Tabana (South Africa, 2015)
Smith (South Africa, 2015)
Sharma (Kenya, 2016)
Miyano (Zambia, 2017)
Marseille (Uganda, 2009)
Jaffar (Uganda, 2009)
Bassett (South Africa, 2014)
0%
20%
40%
60%
80%
100%
SOC
HBC/Mobile



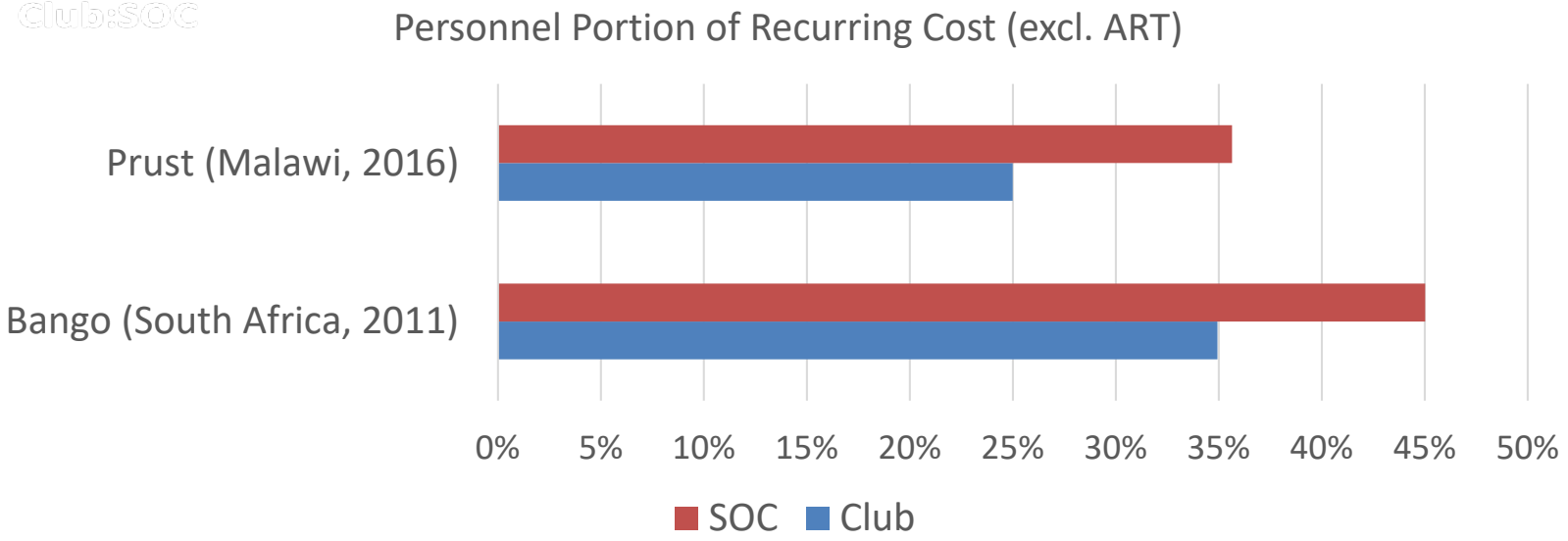
- Recurring costs per person treated were higher in HBC/Mobile in 2 out of 4 studies
  - In Babigumira and Miyano studies (simulation), due to additional costs associated with transport-related expenses and extra personnel for HBC/mobile programs
- Lower cost per person treated in 2 out of 4 studies
  - In Tabana study (randomized trial) due to lower personnel costs since lay counsellors were used vs. nurses in clinic
  - In Jaffar study (randomized trial), trained field group officers were deployed in HBC arm after 4 weeks of intensive training. Clinic arm used medical officers and nurses.

Group Models

- Clients receive ART refills in a group
- Client-Managed
  - Group managed by clients themselves
  - Examples: Community Adherence Groups
- Health care worker managed
  - Group managed by professional or lay health care staff member
- Studies
  - Bango (South Africa, 2011)
  - Prust (Malawi, 2016)


ART Portion of Recurring Cost
Prust (Malawi, 2016)
Bango (South Africa, 2011)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
% ART cost SOC
% ART Cost Club

Club:SOC

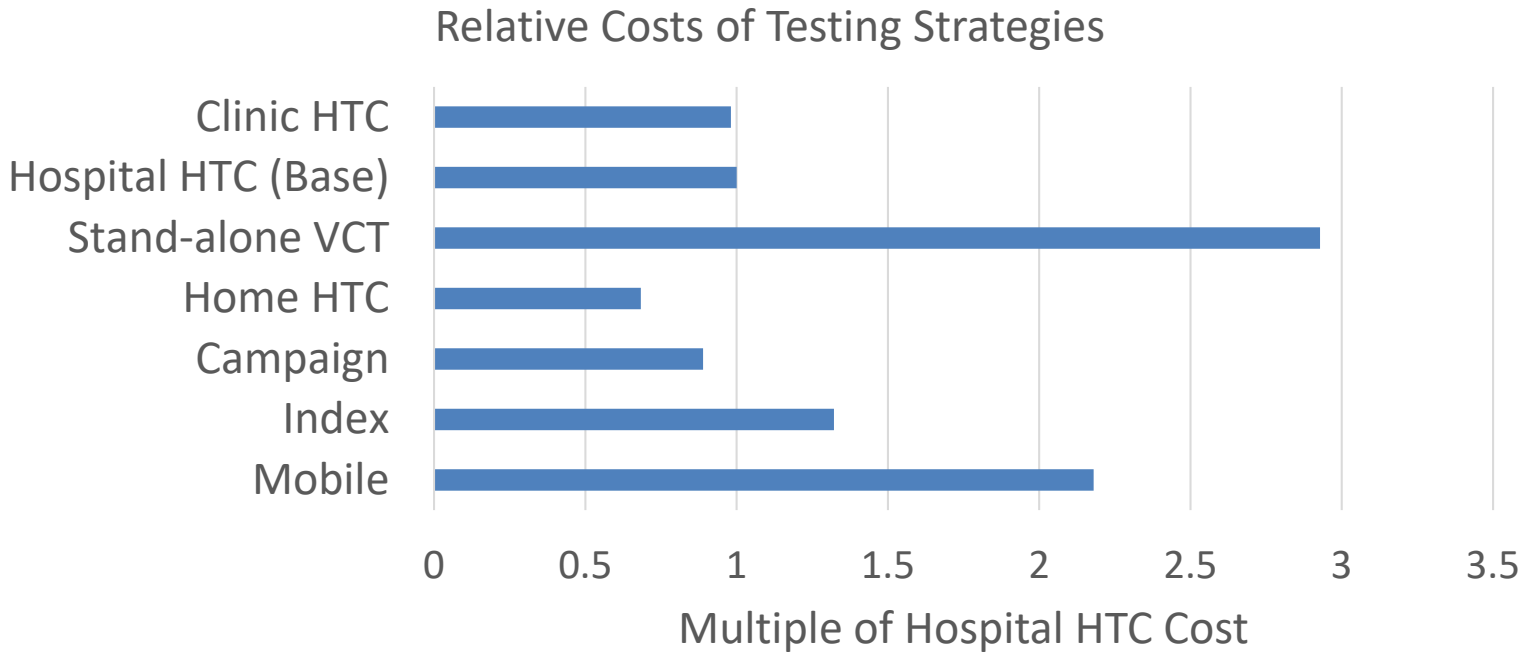

Personnel Portion of Recurring Cost (excl. ART)
Prust (Malawi, 2016)
Bango (South Africa, 2011)
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%
50%
SOC
Club

Study	Bango (South Africa, 2011)	Prust (Malawi, 2016)
Recurrent Cost (Club:SOC)	0.65	0.68
Personnel Cost (Club:SOC)	0.51	0.48

- Recurring costs were lower in group strategies
- Driven in large part by lower personnel costs
- Reflects decreased load on clinic staff

Targeted Testing

- Testing adapted to context
- Testing to facilitate differentiated care
- Examples
  - Community HTC
  - Mobile HTC
  - VL informed care
  - HIVST



Adapted from Sharma et al., 2015

- Stand-alone VCT had highest cost per person
- Greater cost of mobile testing due to additional personnel and transportation costs
- Potential savings could come from task-shifting

Cost Drivers

Programmatic

- Cost of ART delivery
  - Fully loaded unit cost has decreased from $703 to $376 (*Personal communication: Andrew Phillips*)
- Personnel costs
  - Composition and payscale of staff
- Start-up costs
  - Training costs
  - Infrastructure investment

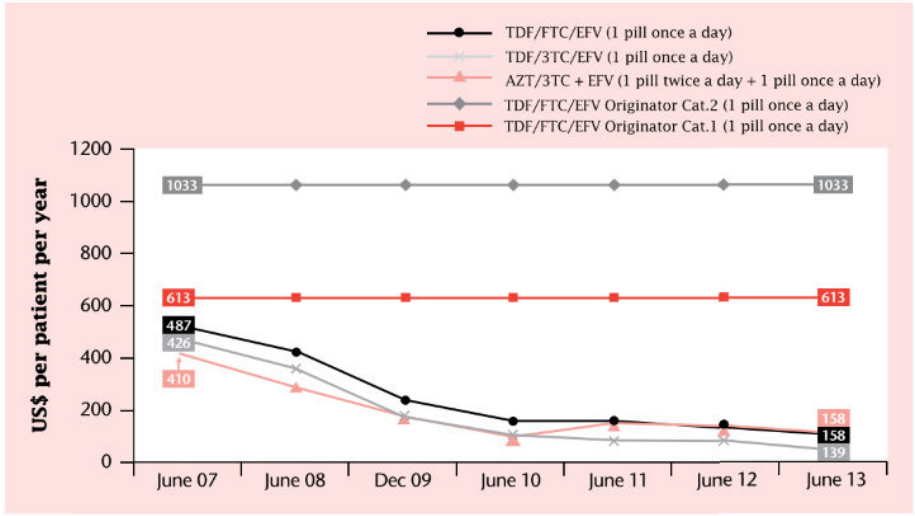
Environmental

- Prevalence of HIV in region
  - Higher prevalence = lower unit cost per person treated
- Willingness to accept treatment strategy
  - Depends on:
    - Economic cost to patient
    - Stigma

Observations

- Data on costs for MMS/PRP, PHW, and CAGs is limited
- Cost savings and efficiency gains for any program are highly dependent on context
- Economic costs borne by the patient should be considered
- Gains in efficiency and cost-effectiveness through DSD will become more significant as more patients become stable on ART and drug costs decline

GRAPH 2: THE EVOLUTION IN PRICE OF DIFFERENT FIRST-LINE REGIMENS



Adapted from Untangling the Web of Antiretroviral Reductions, 16th edition, July 2013, MSF

Cost Data

- Regular collection of cost data could help improve program efficiency
- Methods:
  - Micro-costing
  - Time and motion
- Standardized reporting items to better evaluate how each part of a program affects the whole:
  - Capital costs (start-up, equipment with >1 year of useful life)
  - Recurring costs (personnel salaries, consumables, overheads, etc.)
  - ART/test cost
  - Number of patients served
- Agreement on parameters and data to be collected
  - Programmatic perspective
  - Outcome of cost per person virally suppressed after one year on treatment
  - Patient time in program and health state over time
- Programs can share results, learn from successes, innovate upon existing implementations
- Provides data that can be used for budget impact analyses

Future Steps

- Adapt strategies to needs and characteristics of populations to be served
- Leverage existing infrastructure and manpower where possible
- Minimize economic costs to patient and perception of stigma
- More studies on cost needed
- Encourage regular collection of cost data
- Modelling studies to determine proportion of people needed to be on DSD to increase efficiency

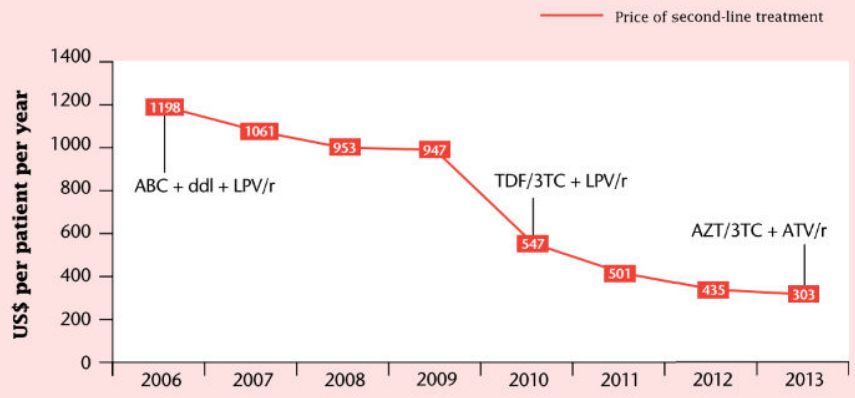
Thank you

EXTRAS

Factors that make VL testing more cost-effective

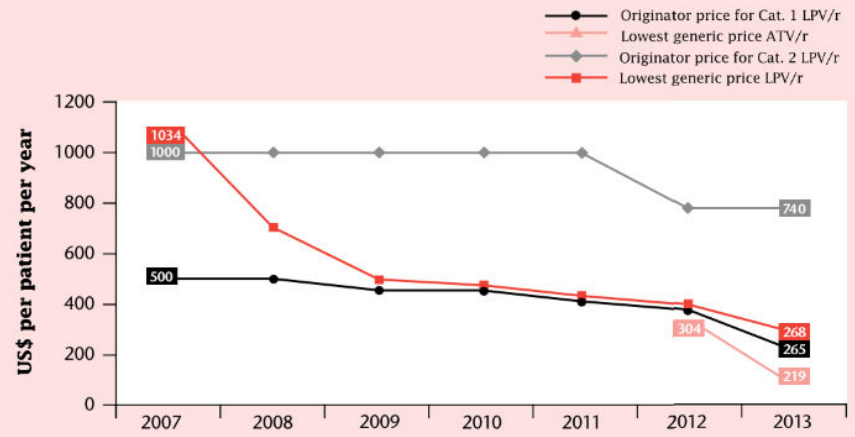
- VL monitoring unit cost range: 6-104 USD (Barnabas et al.)
- Factors that make VL monitoring more cost-effective:
  - Effective low cost approaches to VL monitoring
  - Ensure pathway to health improvement is established and acted upon
  - Simplifying HIV care and using VL monitoring to facilitate differentiated care

GRAPH 3: MOST AFFORDABLE SECOND-LINE TREATMENT OPTION AS PER WHO GUIDELINES



The graph shows the price decrease for the second-line regimens as per WHO recommendations, based on a combination of generic and originator prices as reported in Untangling the Web, editions 9 through 15.

GRAPH 4: THE EVOLUTION IN PRICE OF BOOSTED PROTEASE INHIBITORS FOR SECOND-LINE REGIMENS



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