Progress towards the first 90:
Innovative approaches, including self-testing

Liz Corbett

Professor in Tropical Epidemiology

London School Hygiene and Tropical Medicine,

MLW Clinical Research Programme

18th May 2017

INTEREST Conference

Conflict of interest

Nothing to declare

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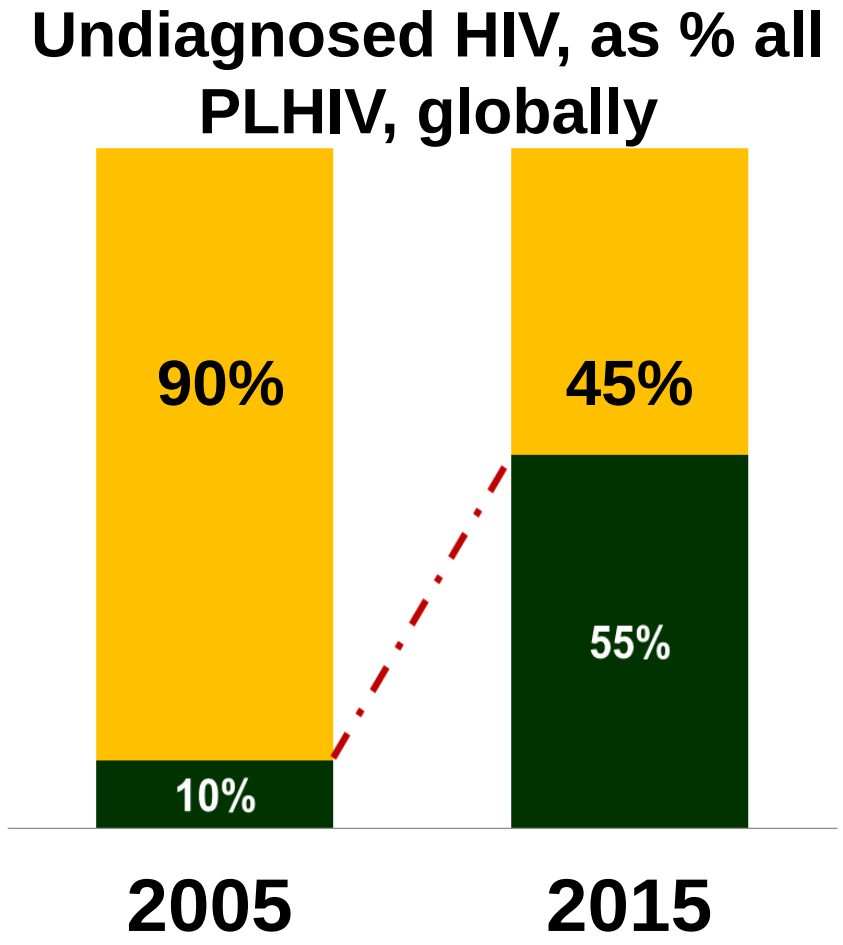
INTEREST Conference

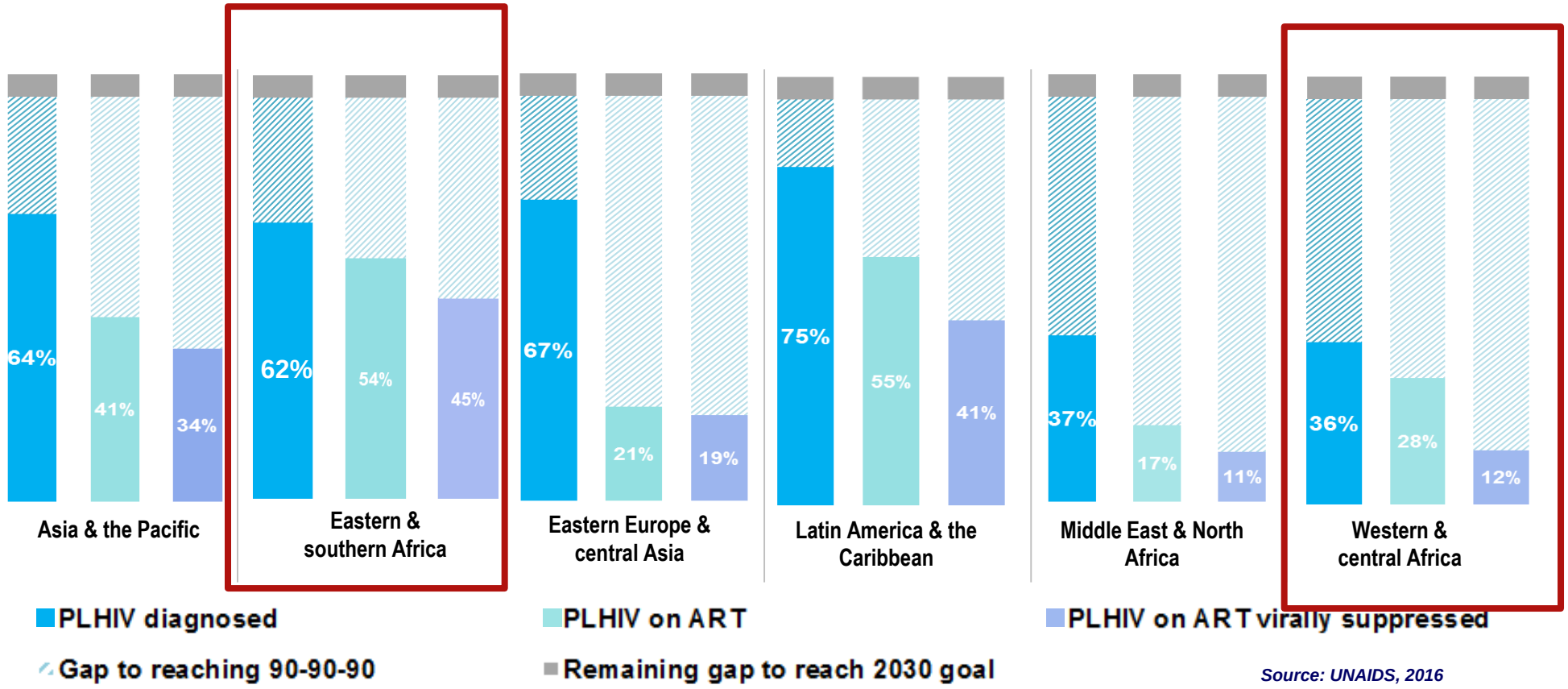
Progress towards 1st 90

- **Rapid scale up of services in Southern and East Africa**
- **Decentralised HTS via lay counsellor cadre**
  - Home-based testing
- **~100 million HIV tests p.a.**



Testing gaps by global region

West and Central Africa well below global average



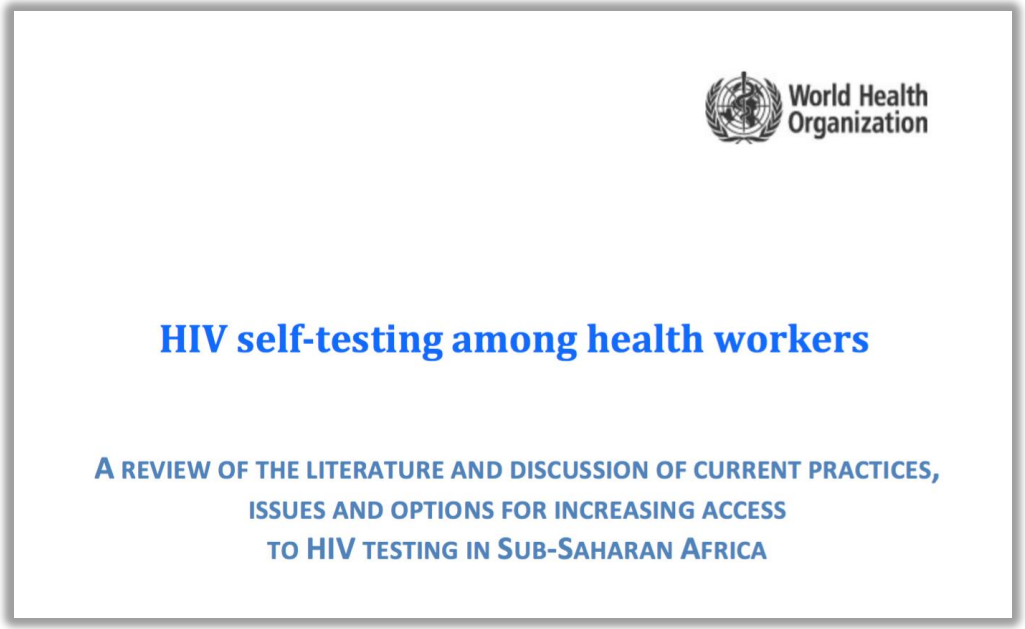
Source: UNAIDS, 2016

Confidentiality impedes decentralisation of HTS

Survey in health workers in 5 countries

Treat, train and retain: 2007

- Need for a moment of privacy when learning results
  - Testing at own facility out of question
- Thereafter, easier to turn to someone you know than to tackle the health system alone
  - HIV treatment at own facility preferred by many



HIV self-testing

psi

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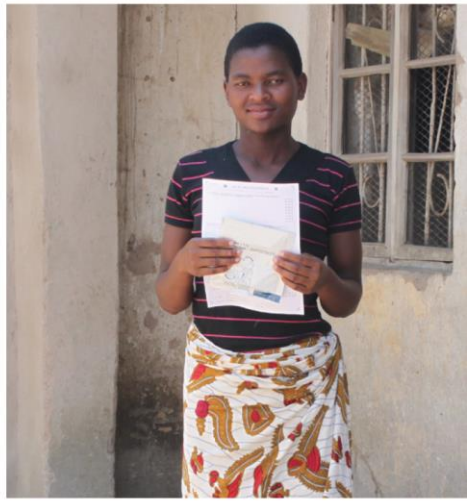
UNITAID
Application
$ 46 million

2013

A short technical update on self-testing for HIV



World Health Organization UNAIDS

2016

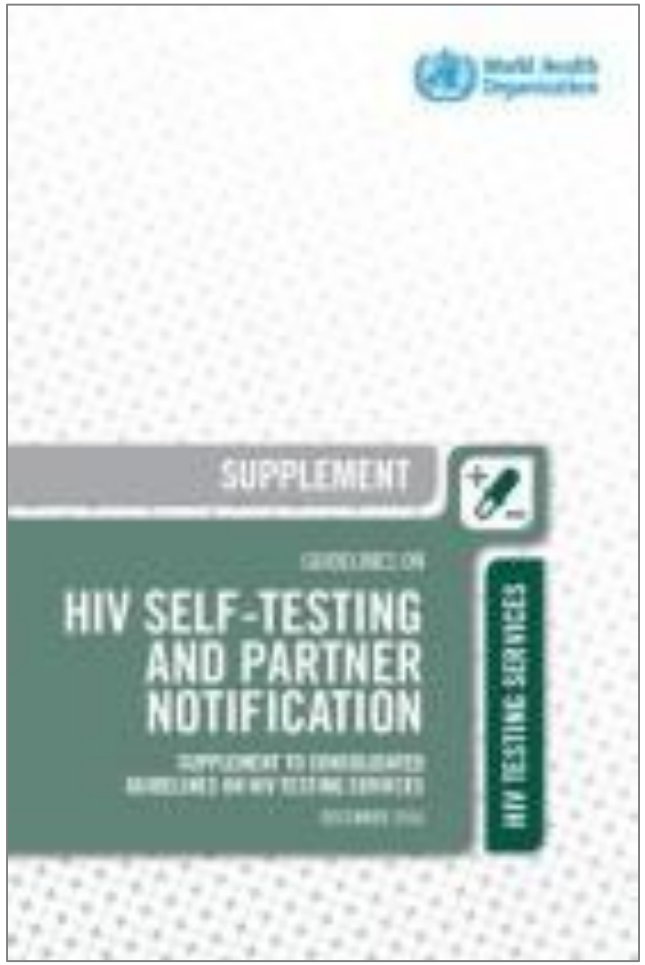
2017

UNITAID and the Global Fund expert panel approves the first HIV self-testing product

Malawi, Zim & Zam HIVST kits in GFA17

Cost of Oral HIVST kit
$40 ➔ $3.40
May reach $2
Lots of new products

Dec 2016 WHO Guidelines on HIVST



HIV self-testing should be offered as an additional approach to HIV testing services *(strong recommendation, moderate quality evidence)*

Outline

Data from Malawi 2012-15

- **(Accuracy)**
- **Social harms**
- **Linkage**

UNITAID-PSI-STAR HIV self-testing grant

HIVST in Malawi: 2012-15

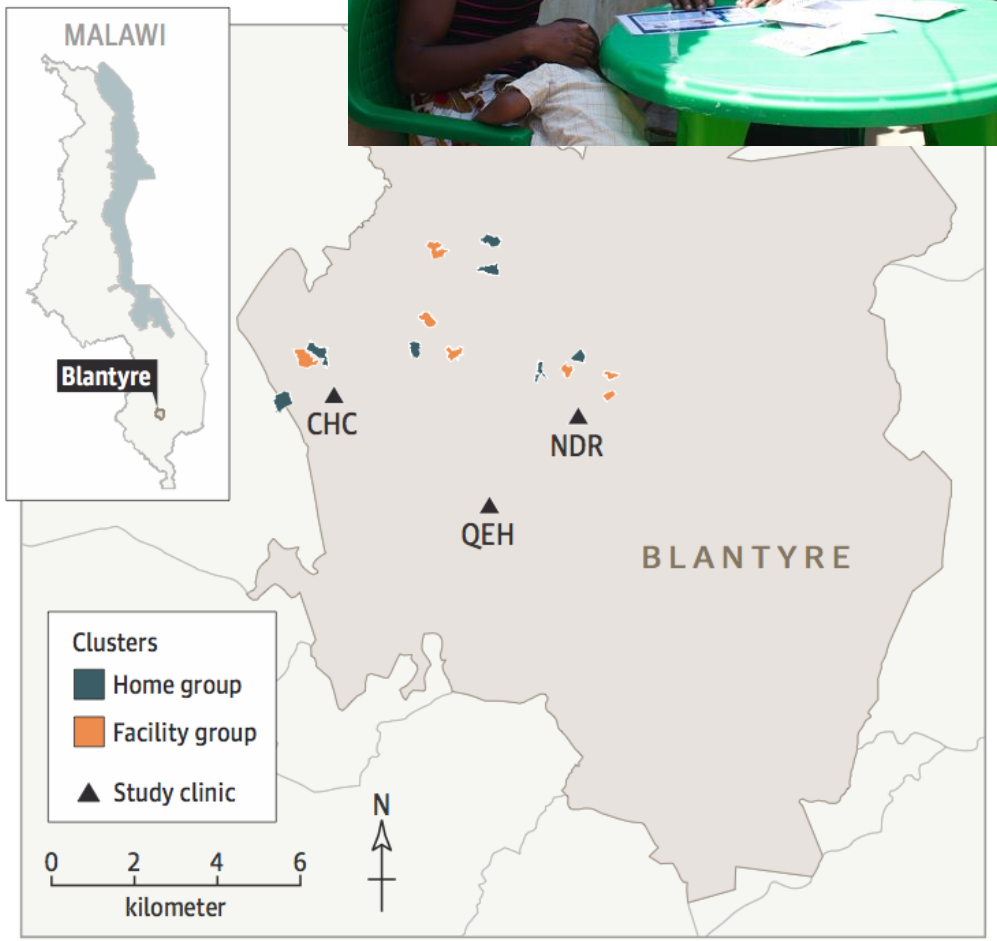
Huge potential and unmet demand

Community can take ownership

- Acceptable for neighbours to provide kits

- **High levels of motivation within community**
  - First-time testers
    - young people & men
  - HIV-ve women & other repeat testers
  - Transforms couples-testing

- **Add-on interventions can**
  - Increase demand for
    - ART
    - HIV prevention
    - Provide TB screening



Combined HIVST+ linkage intervention

Blantyre, Malawi

MacPherson JAMA 2014

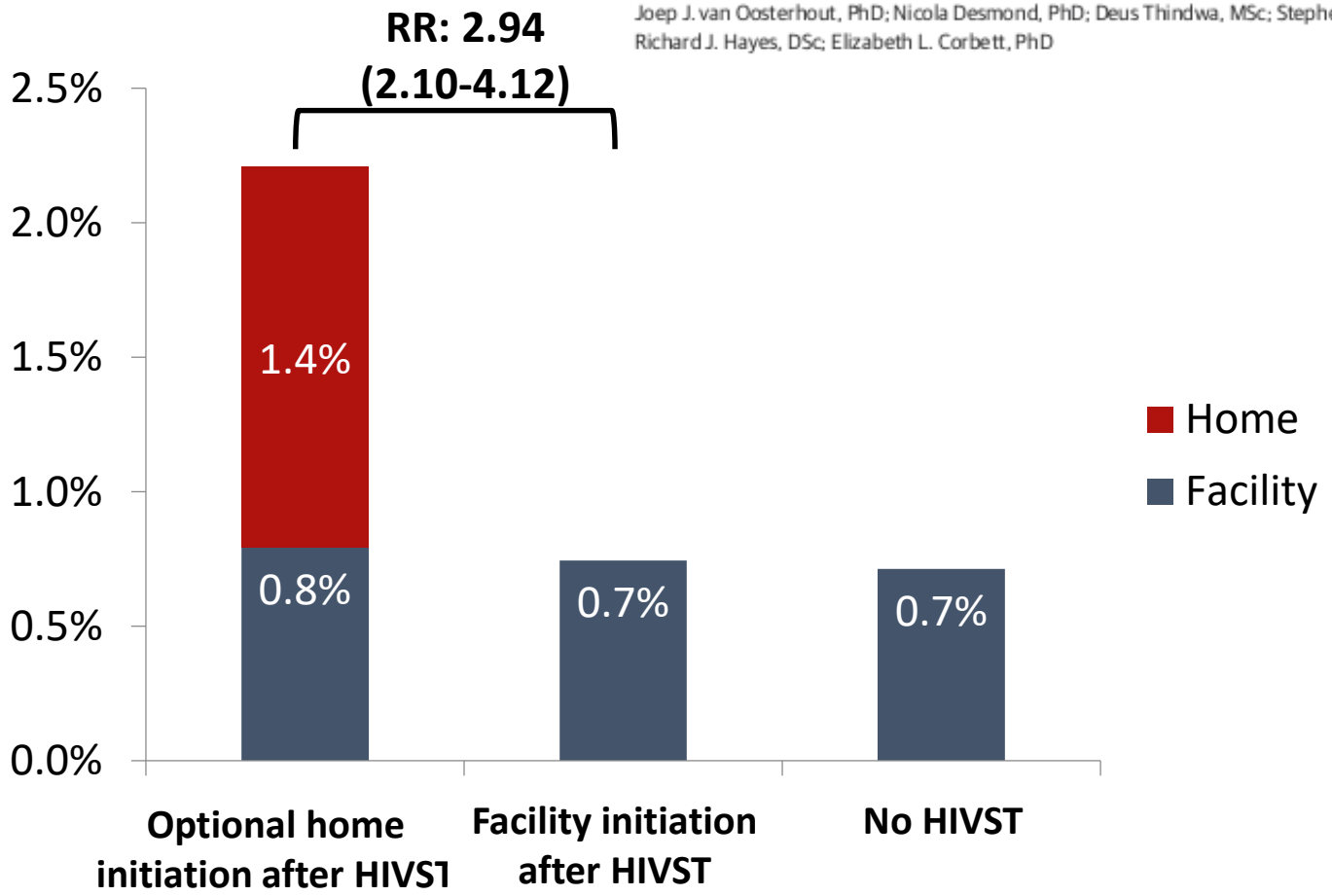
Original Investigation

Effect of Optional Home Initiation of HIV Care Following HIV Self-testing on Antiretroviral Therapy Initiation Among Adults in Malawi

A Randomized Clinical Trial

Peter MacPherson, PhD; David G. Lalloo, MD; Emily L. Webb, PhD; Hendramoorthy Maheswaran, MSc; Augustine T. Choko, MSc; Simon D. Makombe, DipClinMed; Anthony E. Butterworth, PhD; Joep J. van Oosterhout, PhD; Nicola Desmond, PhD; Deus Thindwa, MSc; Stephen Bertel Squire, MD; Richard J. Hayes, DSc; Elizabeth L. Corbett, PhD

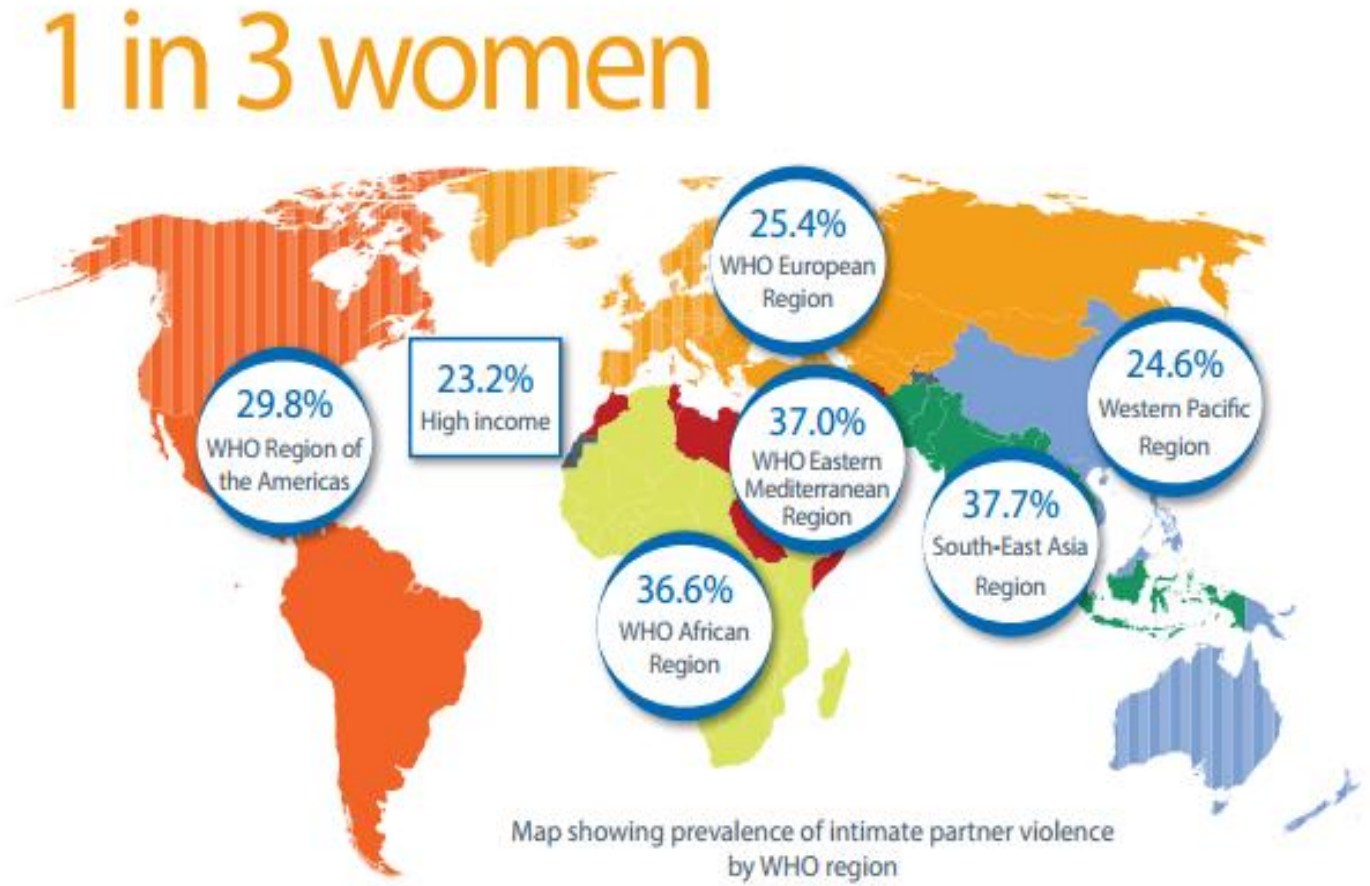
Percentage of <u>all adult residents</u> who initiated ART



wellcome

Impacts of health technologies

Global prevalence of intimate partner violence



Map showing prevalence of intimate partner violence by WHO region

Social harms

- An intended or unintended cause of physical, economic, emotional, or psychosocial injury or hurt from
  - one person to another,
  - a person to themselves,
  - or an institution to a person
- May be the result of the threat of or actual force or power

Impacts of health technologies:

UNITAID/PSI HIV Self-testing in Africa

Cohort Study

- General Population
- Focus on couples

ST Impacts

- Serial in-depth interviews
  - Biographical
  - Longitudinal
- Longitudinal diary study
  - Computer assisted self-interview
  - Face to face question'ire
  - Daily pictorial diary
- Critical incident interviews
  - Follow up of reports of GBV
  - Identify causes & effects
- Focus Group Discussions
  - Structured observations
  - Policy interviews

Key Findings

- Acceptability of "force" in context of gender inequality
- HIVST fosters openness between couples

Key Lessons taken forward

- Coercion: harm or benefit?
- Short-term harms translating to long-term benefits
- Ethics around
  - individual autonomy vs
  - public good &
  - relational responsibility

wellcome

What does it cost?

- Potential to be cost-saving, especially in countries with poorly decentralised services
  - Costs to client can be close to $0.00
  - Willingness to pay is very low in Malawi
- Easier to achieve cost-effectiveness if still far from reaching first 90
  - But do need linkage
  - Linkage into prevention becomes a key driver of cost-effectiveness
- Easier to achieve cost-effectiveness with Universal Test-and-Treat
- Potential for very low distribution costs (while maintaining linkage and 5Cs..)
  - Partner-delivered
  - Social and sexual networks
  - MoH distribution
  - Community-led campaigns
- Paradigm shift towards ensuring rational use
  - Desirable commodity

Economic analysis of HIVST in Blantyre, Malawi

Implementing HIVST in Blantyre, Malawi was cost-effective

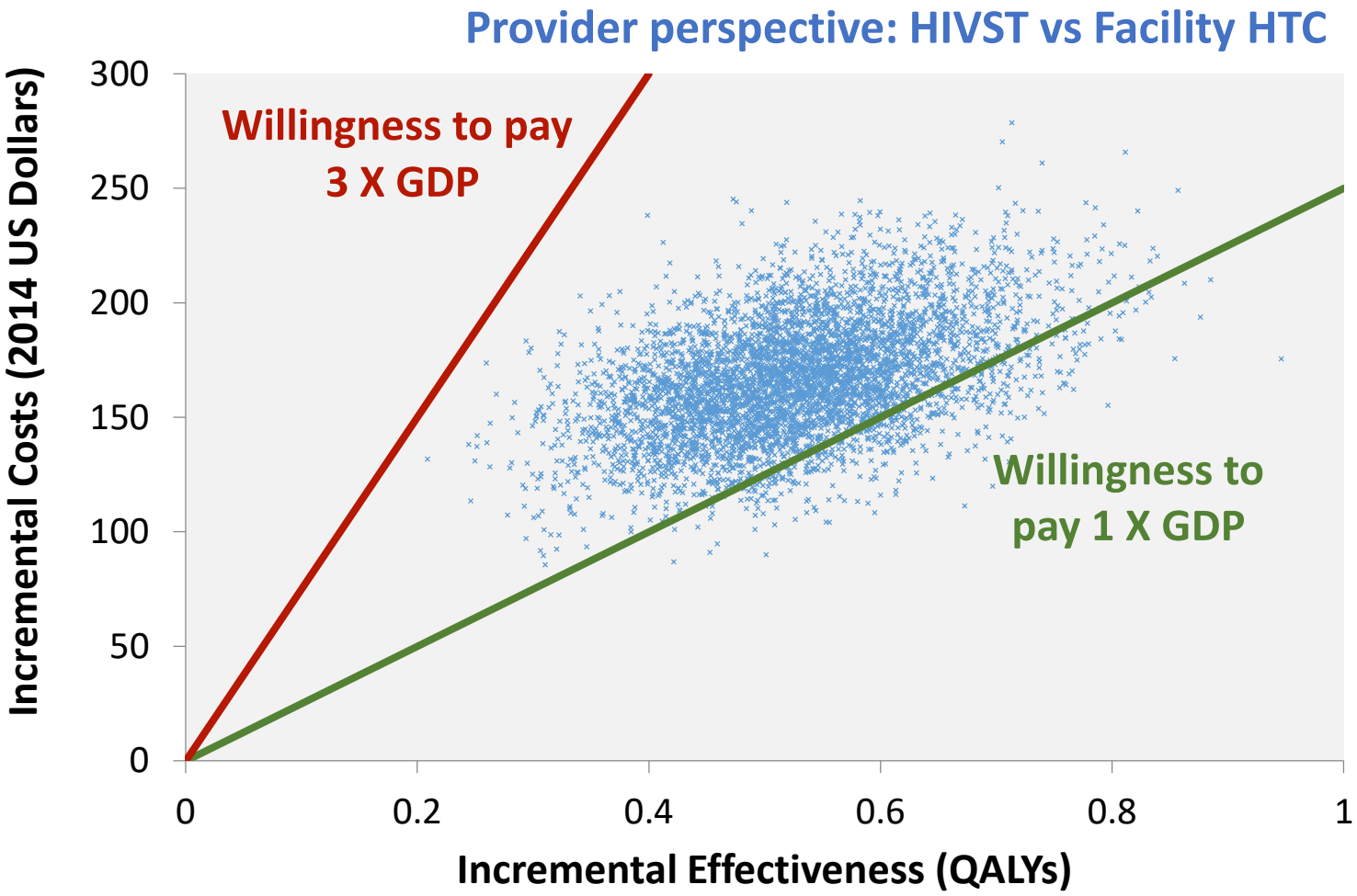
- US$ 230/QALY gained
- **WHO 2010 ART guidelines**

HTC comparable to facility-based HTC

- US$8.90 for HIVST
- US$8.78 for facility HTC

Implementing HIVST will increase healthcare spending

- But will improve health



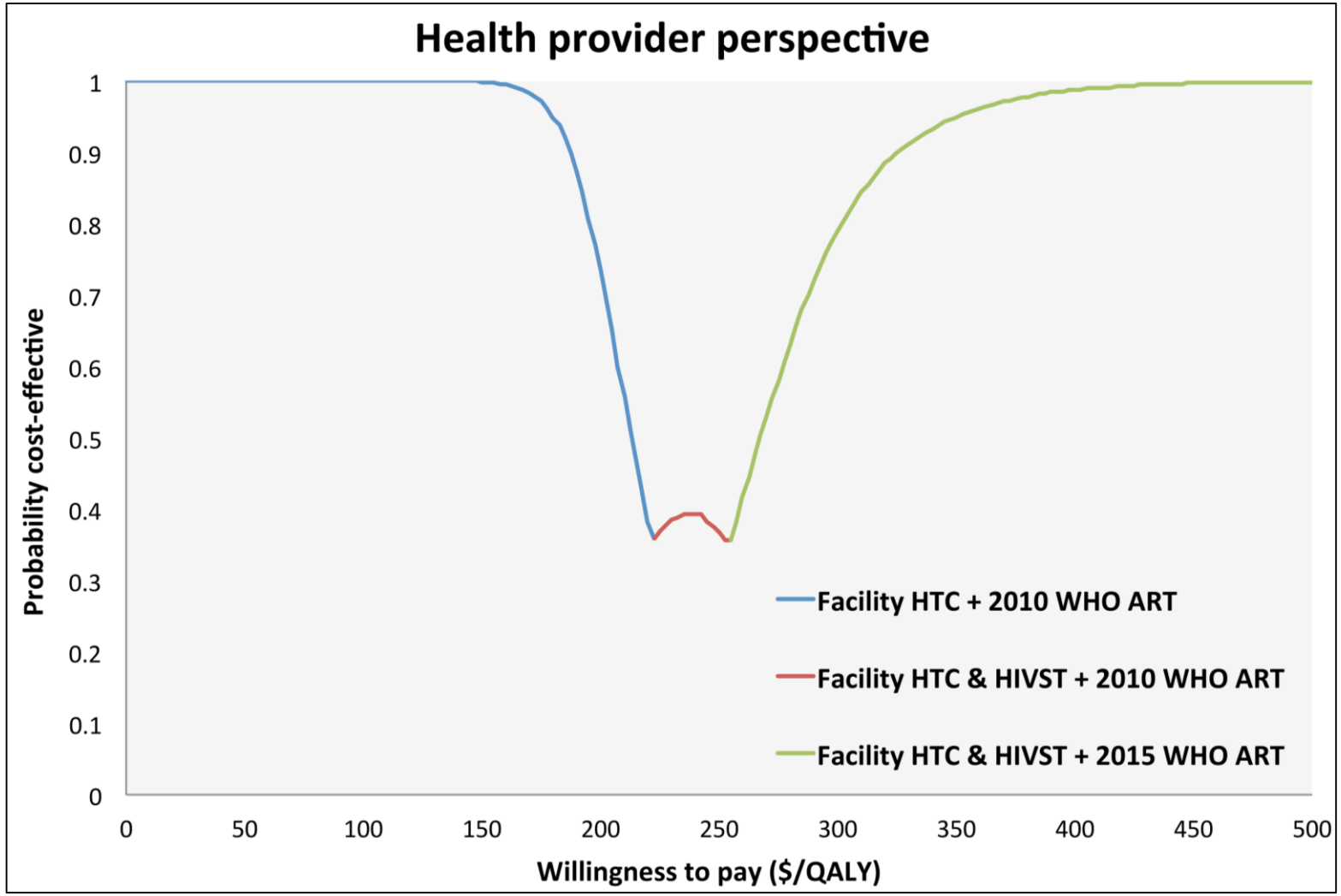
Mahesweran 2017

HIVST and ART guidelines: cost-frontier for Blantyre, Malawi

Which strategy is optimal with increasing willingness to pay for gains in health (QALYS)?

Cost-effectiveness acceptability frontier (CEAF) evaluating 4 strategies involving:

- Facility HTC **v** Facility + HIVST
- WHO ART Guidelines
  - 2010 **vs** 2015 initiation



Catalysing HIVST:
UNITAID STAR high-level goals

1) **Develop global normative HIVST guidelines**
   - Informed by project evaluation
   - Released by WHO
2) **National guidelines and algorithms to accommodate HIVST in all countries by end of project**
3) **≥1 HIV kit packaged for HIVST added to approved diagnostics list for donors**
4) **Price reductions for ≥1 quality assured HIVST product**
   - to ≤ USD$2.75 from USD$40.00/ kit

psi Healthy lives. Measurable results.

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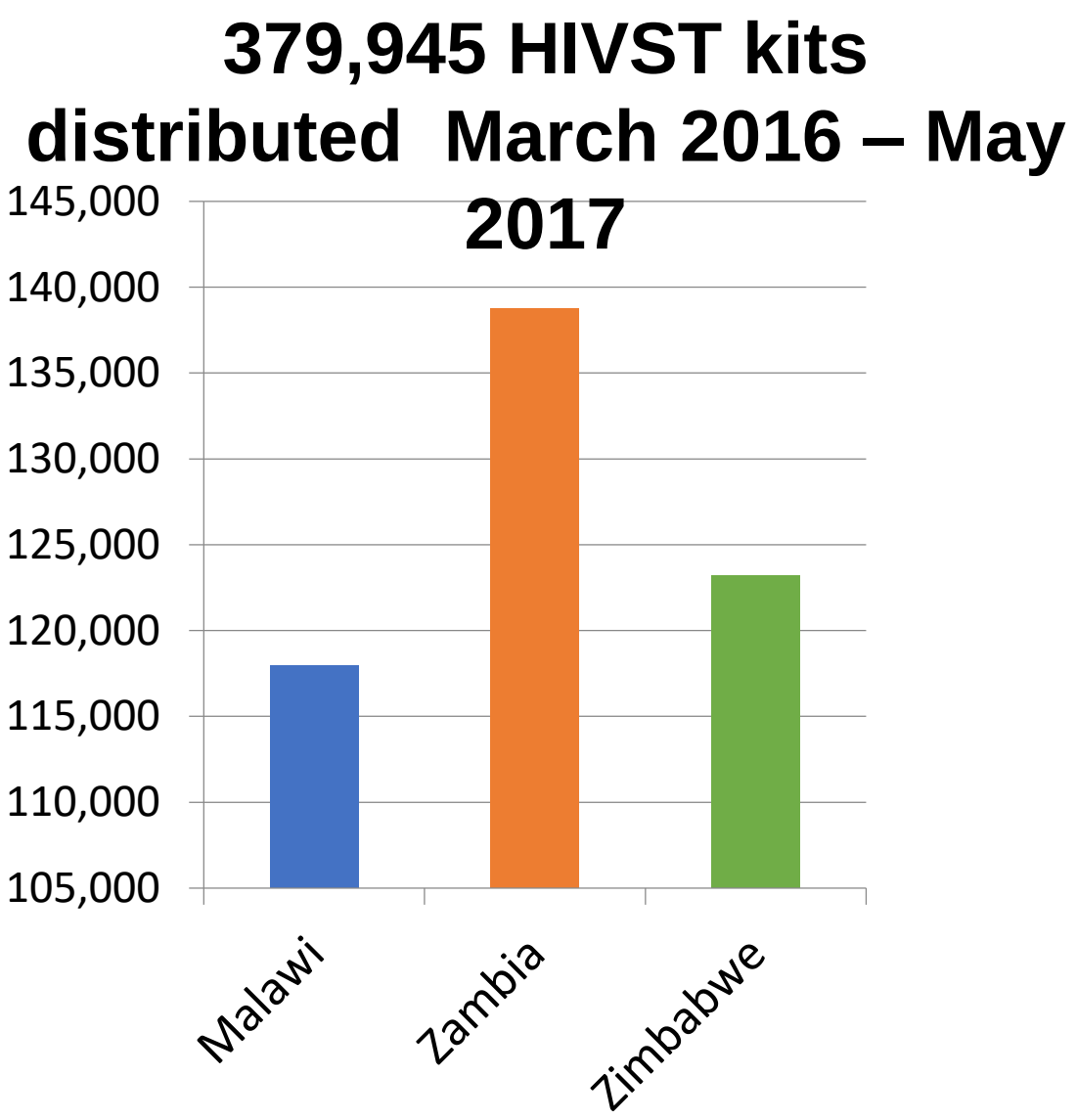
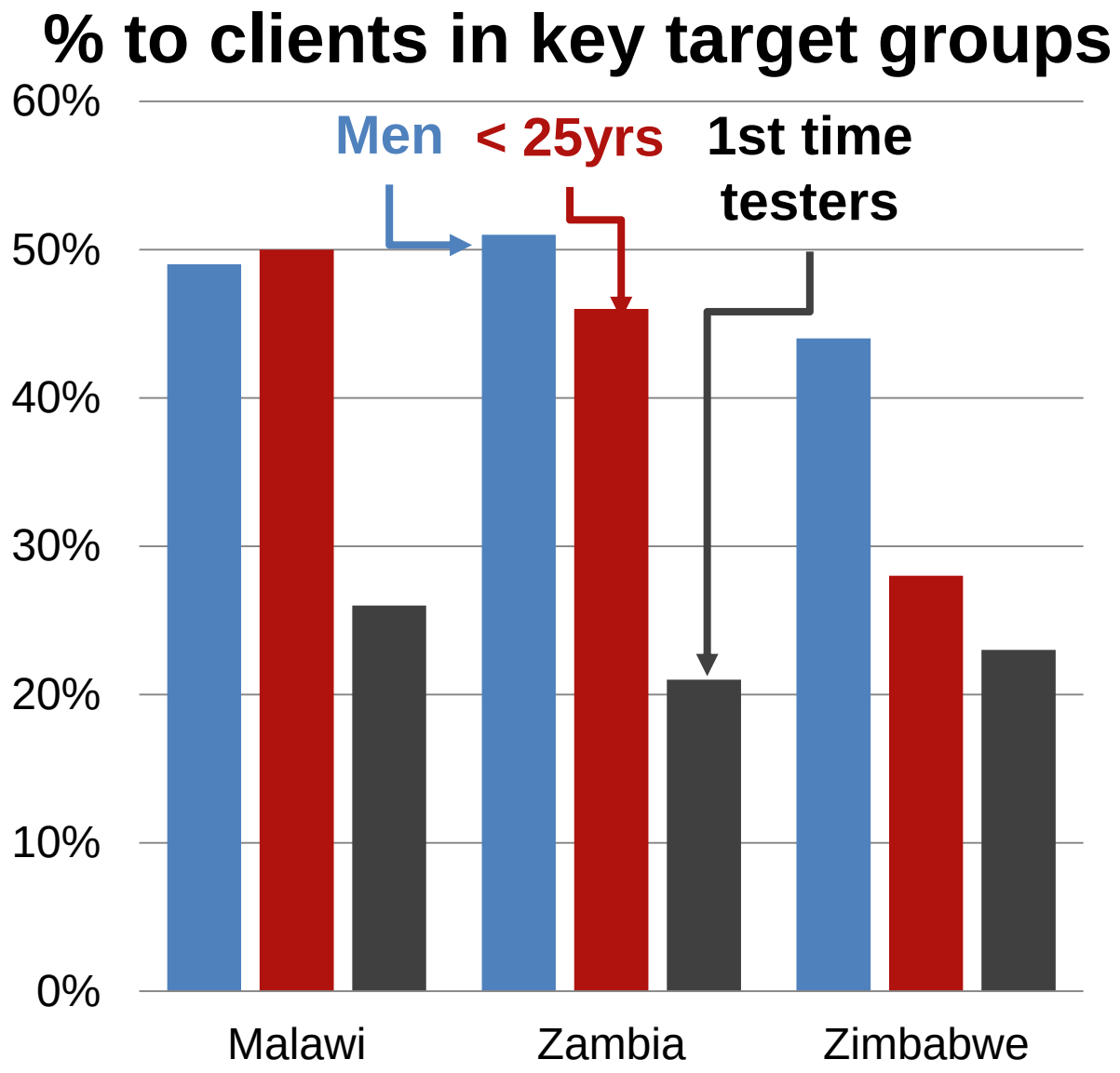
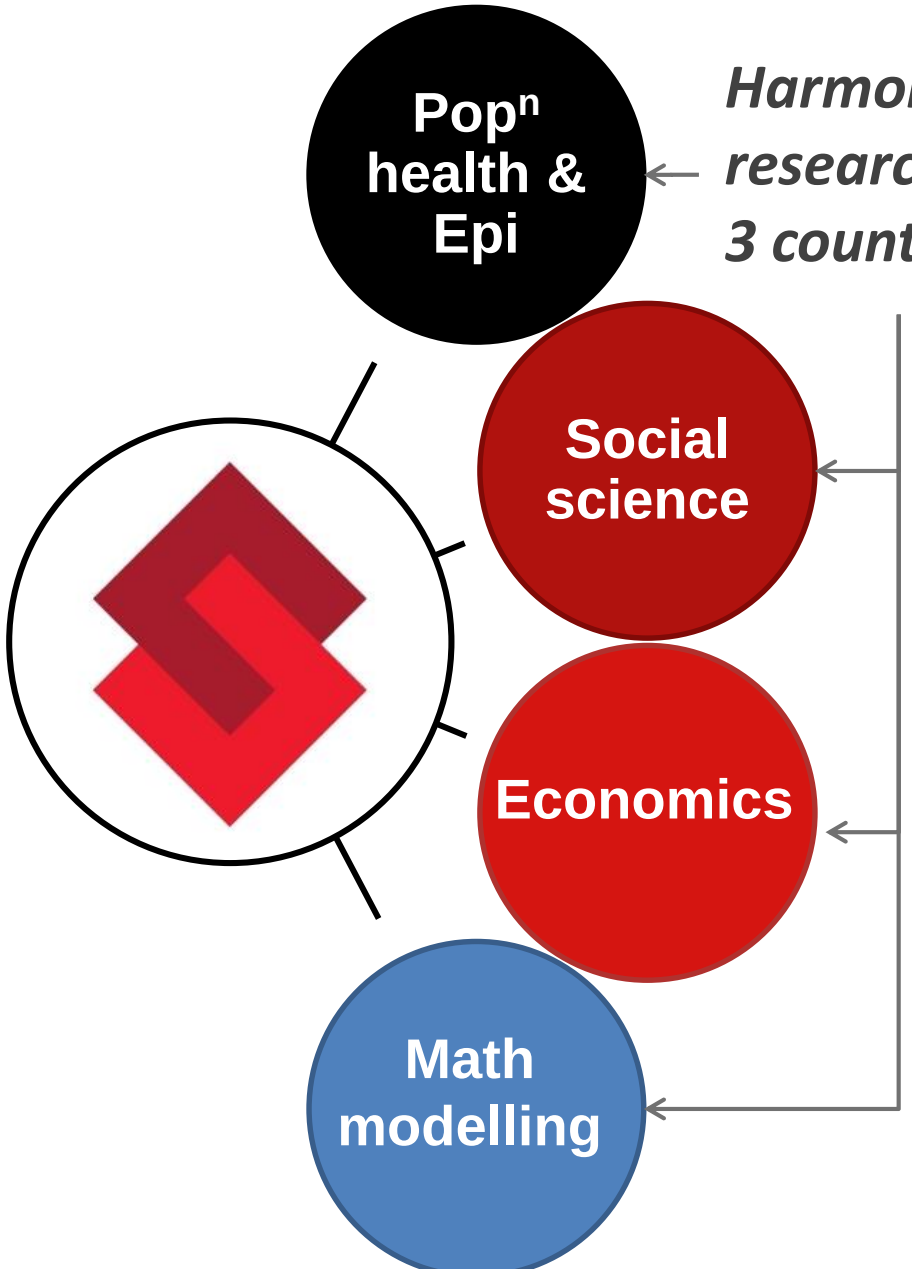
Unitaid Innovation in Global Health

STAR data to date





5 to 10 million tests by 2020



Harmonised research in 3 countries

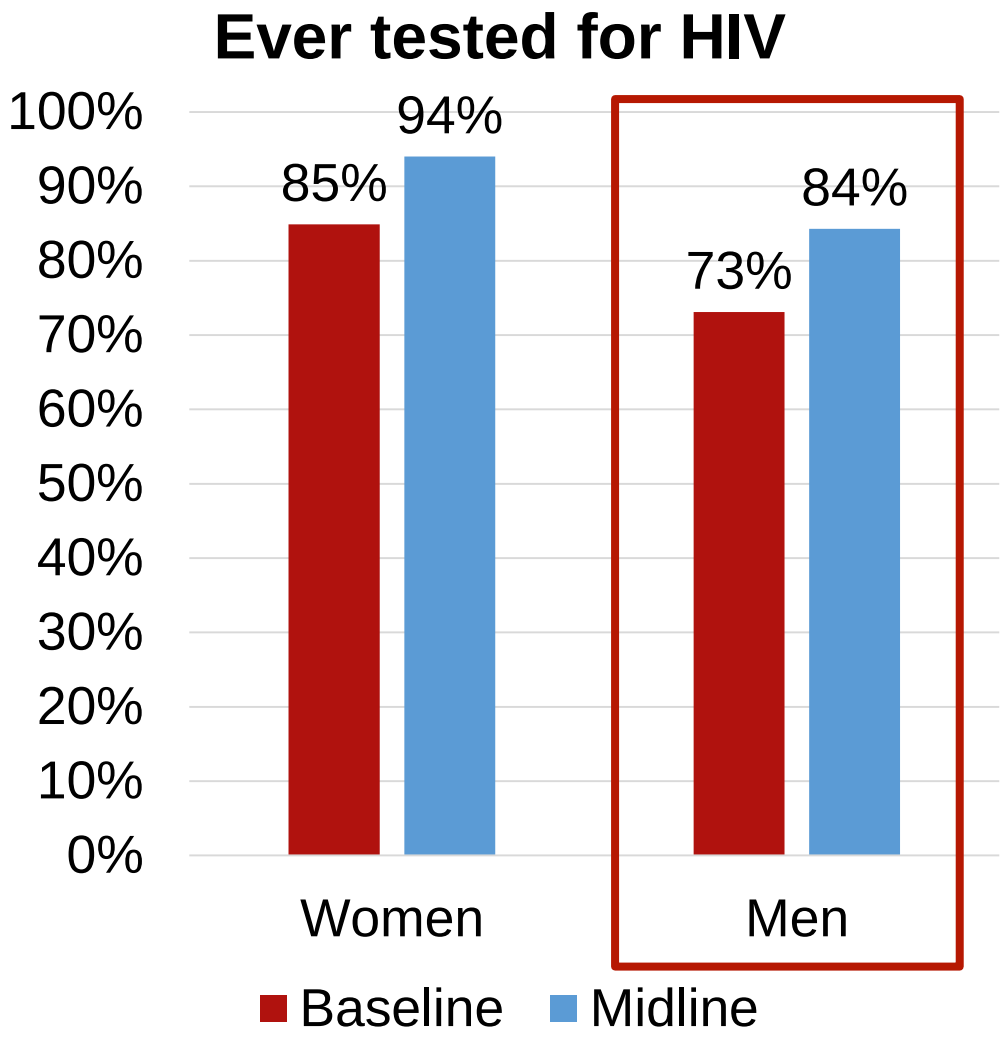
STAR Malawi 2015-19

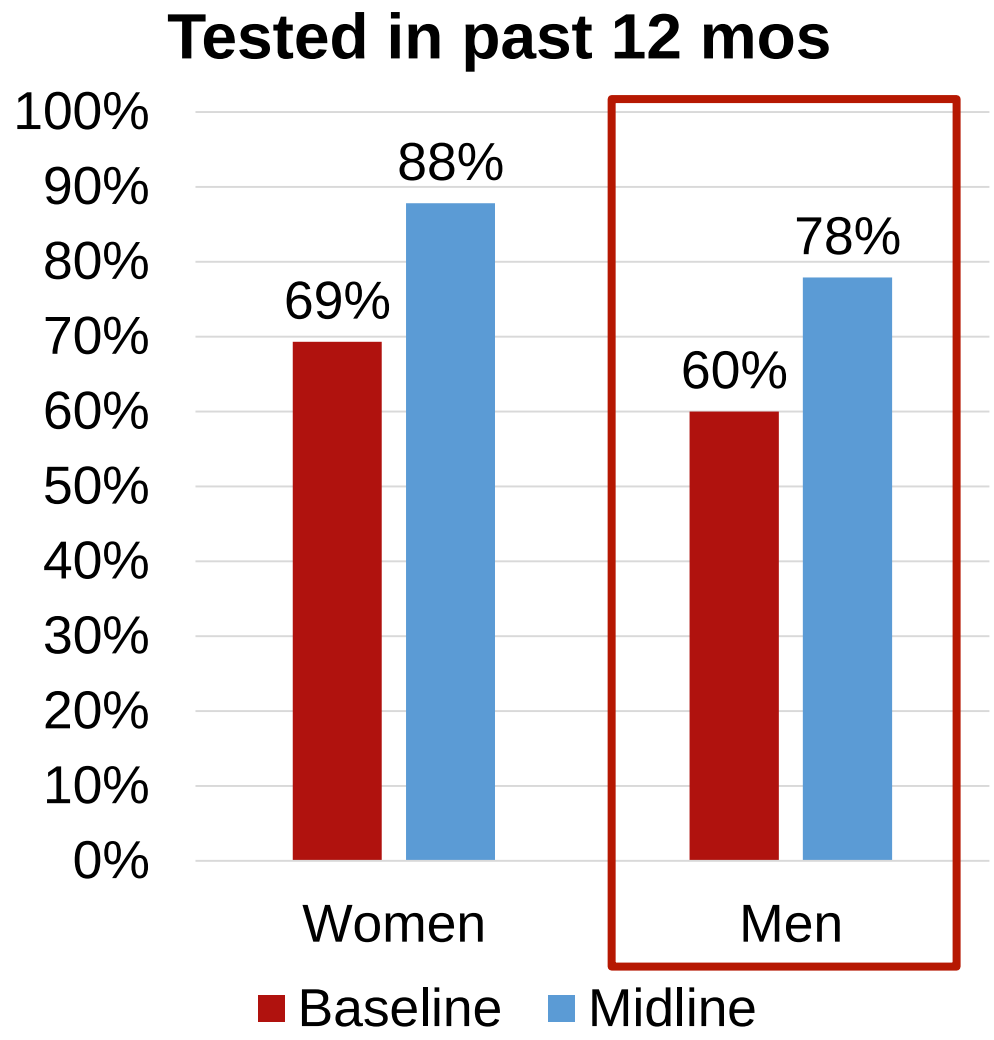
General Population Target: 648,588	Female Sex Workers Target: 10,002

1. How **feasible and accurate** is HIVST in rural Malawi?
2. Can **peer-led services** provide HIVST for sex workers safely and affordably?
3. **Health & social impacts** in rural Malawi?
   - Cluster-randomised trial in 4-Districts
4. **Key preferences** for HIV services?
5. **Costs and benefits** of different models?
6. **Policy & regulatory barriers** to HIVST?
7. **Priority new low cost models from Sept 17**
   - Community-led distribution
   - Facility-based with Ministry
   - Randomised trials: linkage to HIV prevention

11 facility catchment areas in rural Malawi

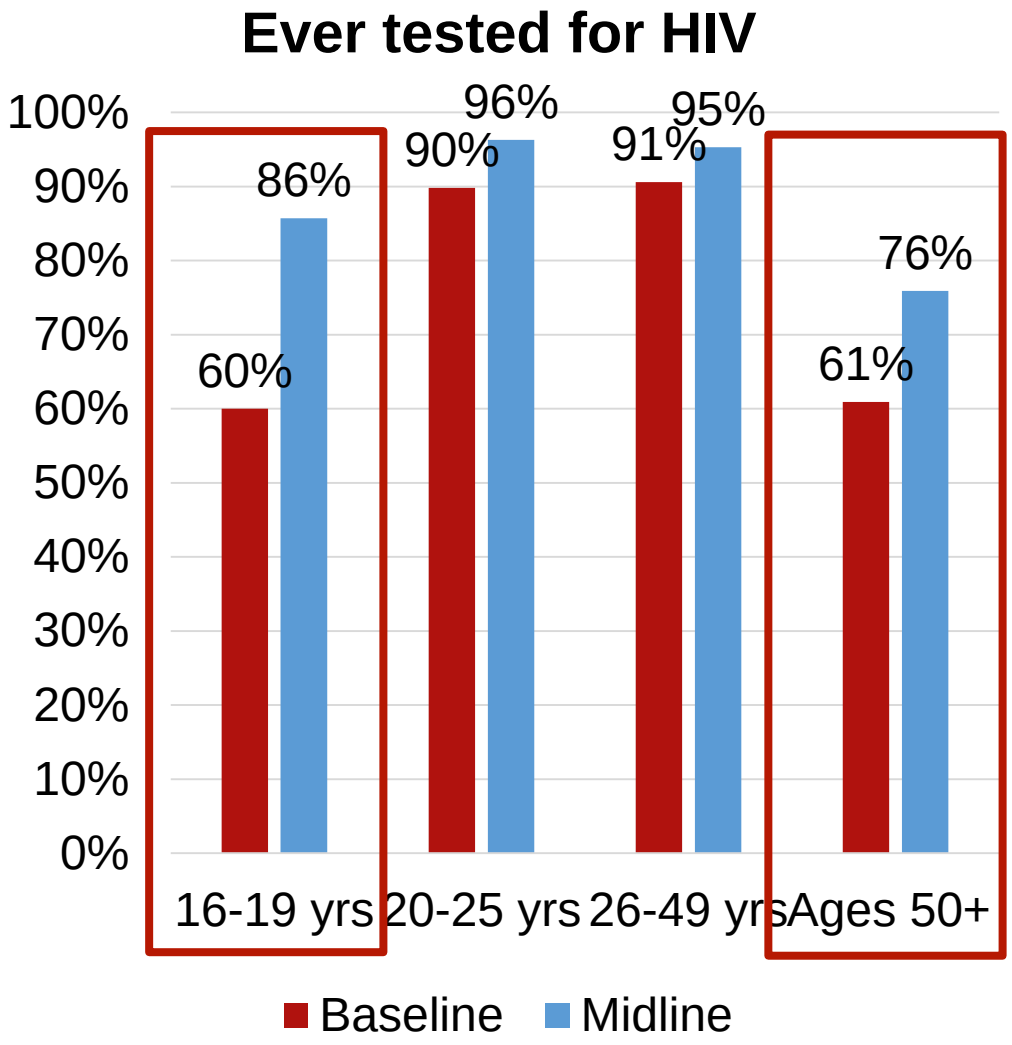
Change in HIV testing coverage by gender: repeat household survey

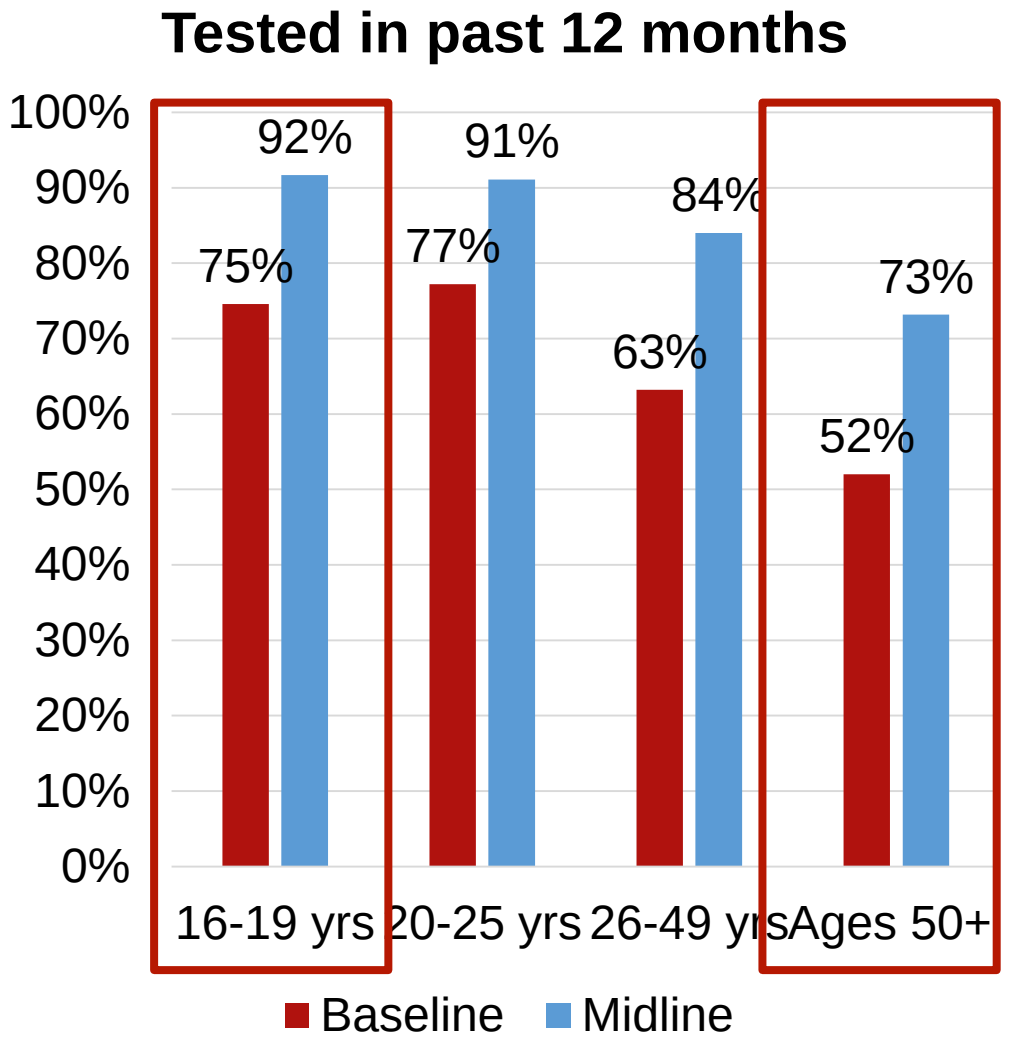




11 facility catchment areas in rural Malawi

Change in HIV testing coverage by age group: repeat household survey





Female Sex Workers (FSW) peer-led model

- **Objective:** Investigate appropriate models for delivering HIVST kits to FSWs
- Progress
  - R**apid ethnographic assessments** (Participant observations and semi structured interviews with FSWs) and
  - **participatory workshop with stakeholders**

- Results
  - Peer-delivery HIVST valued for convenience, confidentiality, privacy, and ease-of-use
  - Preferences for distribution through peers
    - Trusted to keep result confidential
    - Already provides social support; could help to detect social harms
    - Allows flexible pick-up location
  - Some concerns around lack of counselling and linkage to care if positive

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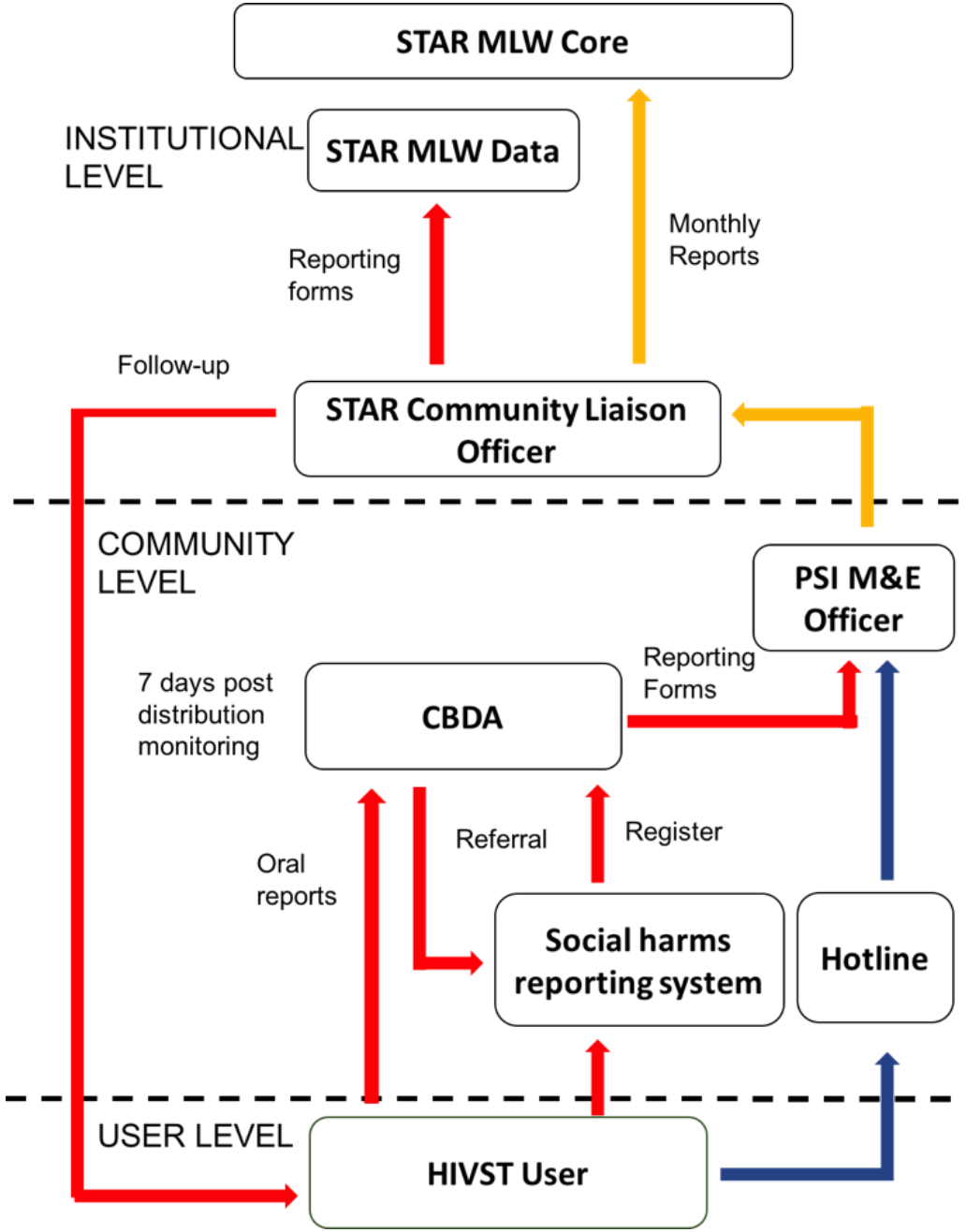
HIV SELF-TESTING AFRICA

Social harms reporting to support female-controlled HIV prevention technologies

- Establish prototype grading and reporting systems for HIVST
- Relate those to other female-controlled methods: event grading, event reporting, response system
  - Female condoms
  - Microbicides
  - PrEP
- Stakeholder workshops to develop SHRS in consultation with DfID and WHO



Multi-arm multi-stage (MAMS) cluster randomised trial design (Phase 2)

Methods development

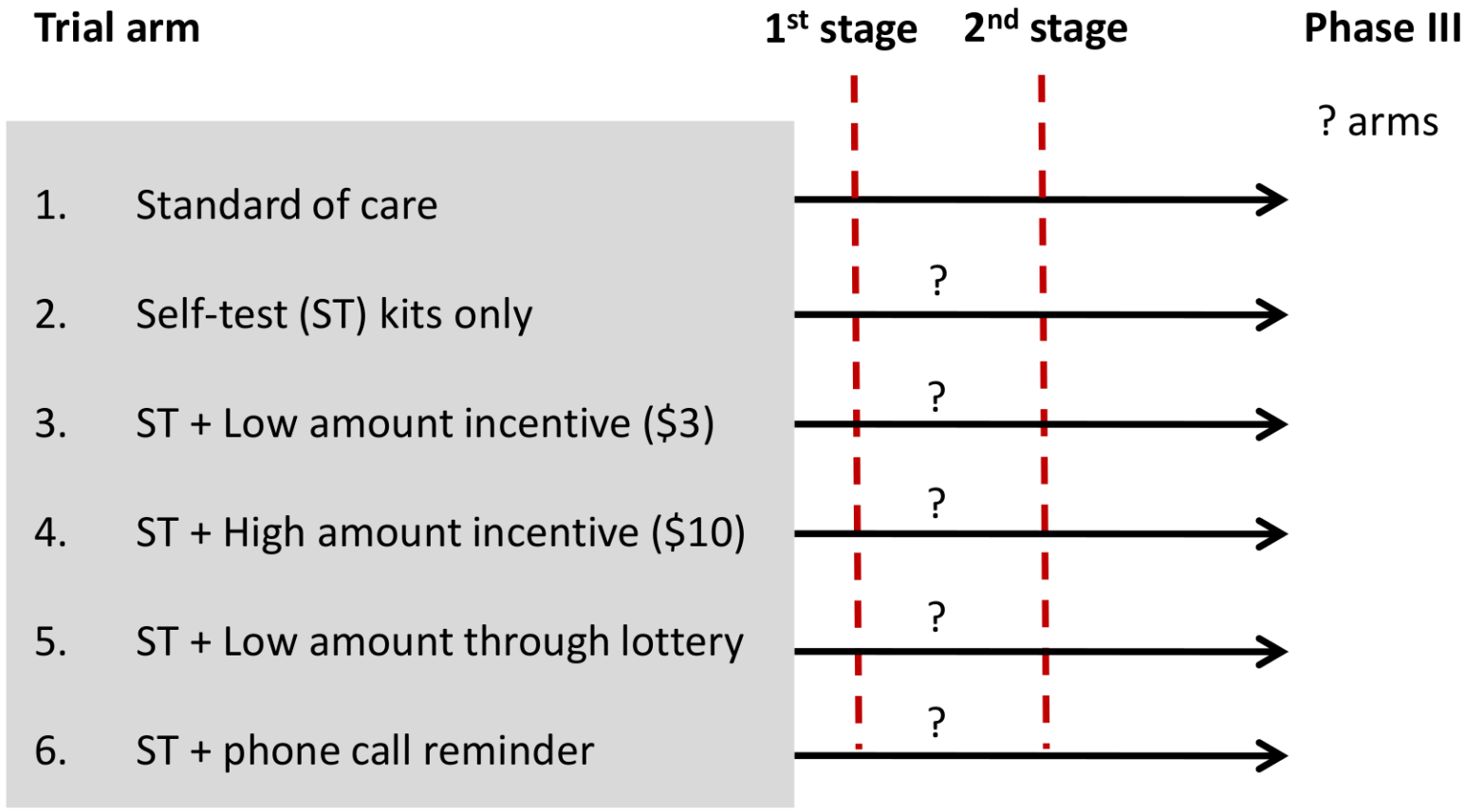
Unit of randomisation: ANC day (cluster)

One interim analysis (end of first stage) drop for

- Futility
- Safety

Cost* and *acceptability to Gov

- *Financial incentives*



Total number of antenatal clinic days per arm
ST: self-test

Choko unpublished

Conclusions

HIVST is an exciting and promising new development

- Everyone you want to get tested wants to self-test
- Built-in “moment of privacy” allows for “standard” decentralisation approaches
- Men, adolescents, key pops
- Complementary coverage including first time-testers
- Can be a “disruptive” technology in context of low coverage/no task-shifting

Public health --- needs linkage!

- PHIA studies reassuring in STAR countries
- Demonstrated effect on ART demand (MacPherson)
- Effect on VMMC (Choko)
- Tools to capture linkage from HIVST at scale need improvement

Affordability & cost-effectiveness

- Rational use and minimising distribution and linkage costs
- Effective linkage to prevention an increasingly important issue for community-based HTS models

Acknowledgements

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Choko
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Ayles