Testing and Linkage to Care as Gateways (or Closed Doors) to Successful HIV Control

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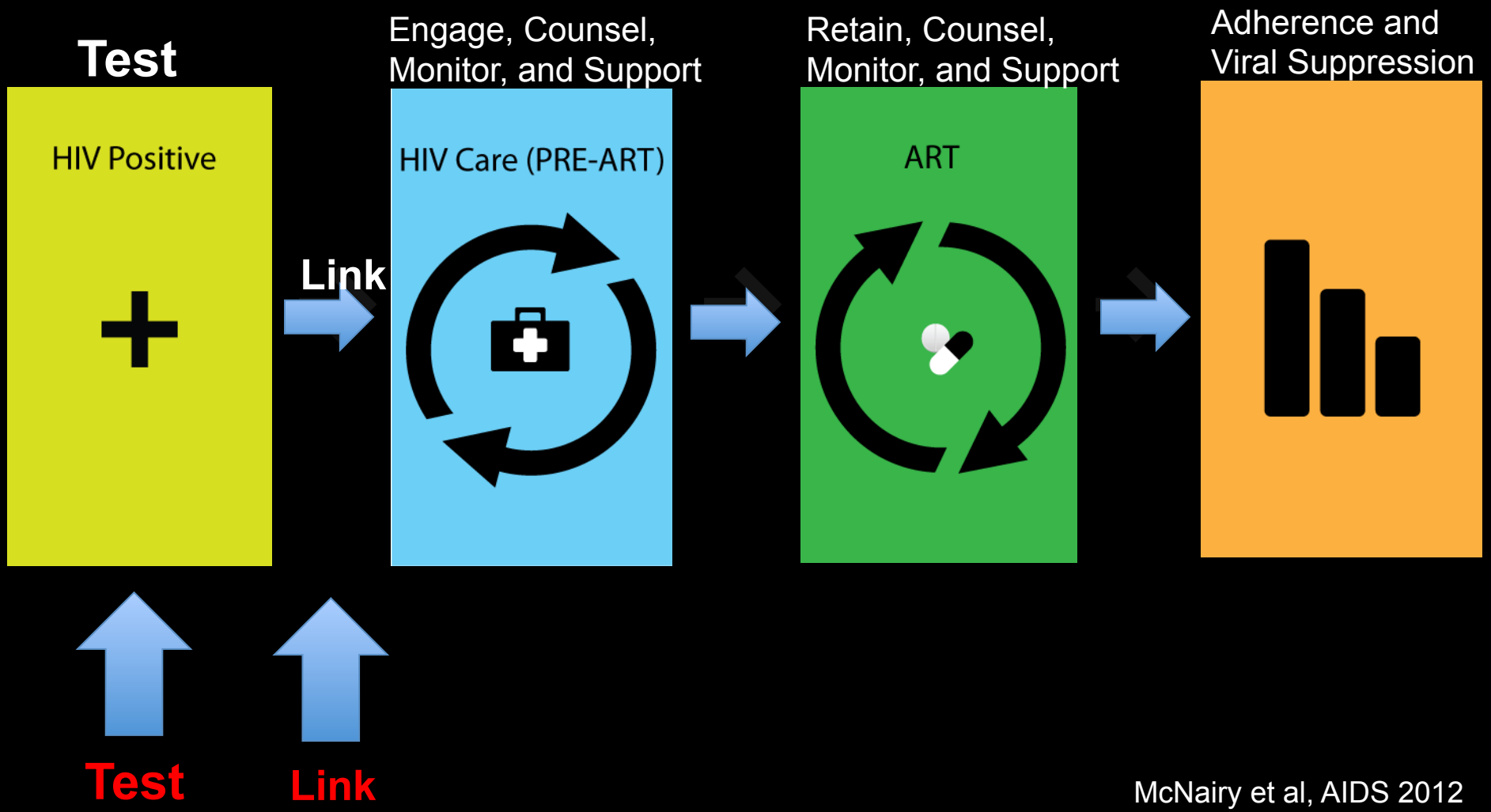
Testing and Linkage

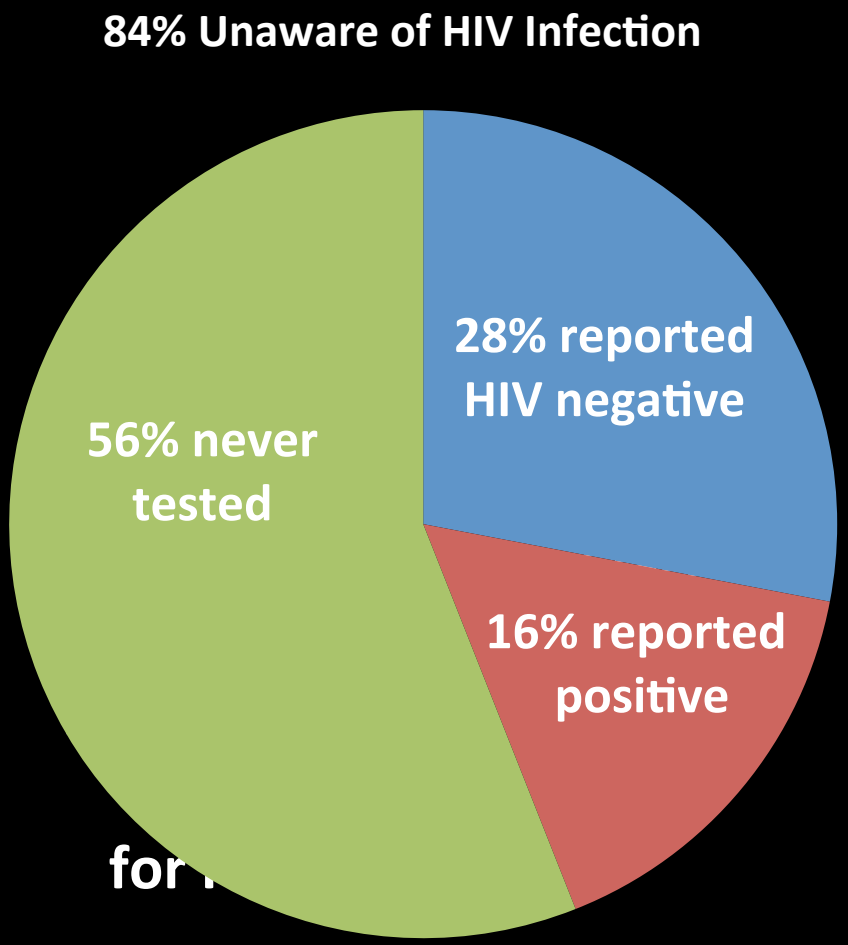
- How are we doing?
- What are promising approaches?
- Opportunities and Challenges
- Way forward

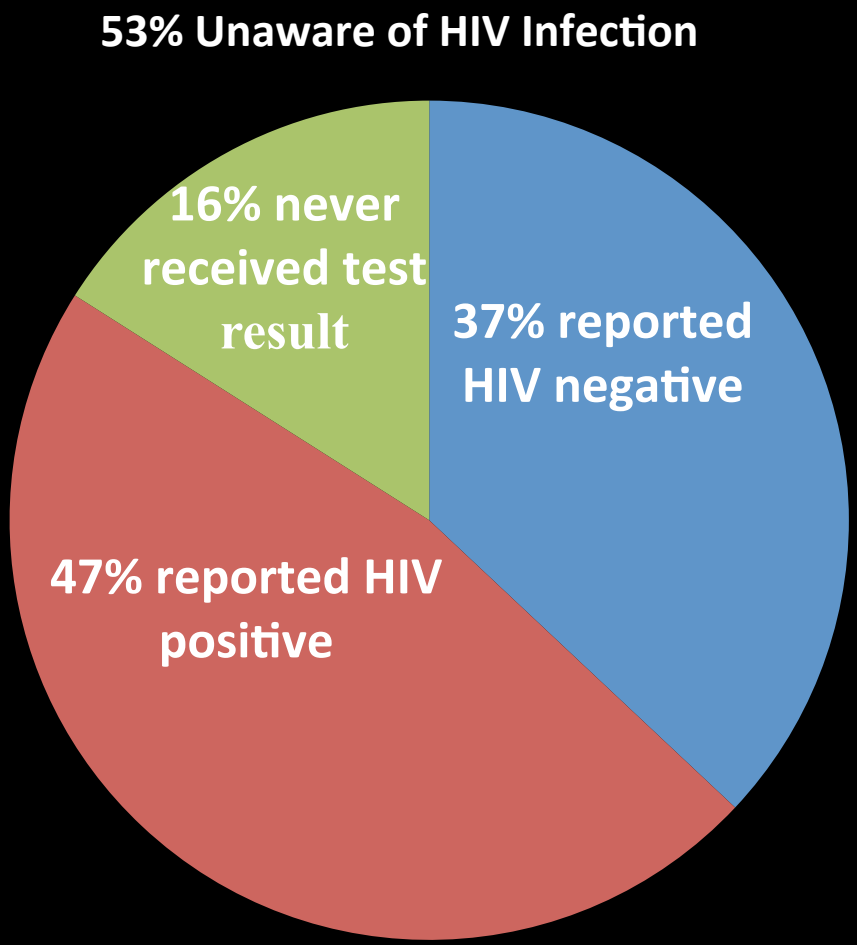
HIV Care Continuum



McNairy et al, AIDS 2012

Awareness of HIV Positive Status-- Kenya (15-64 yrs)





KAIS 2012

SHIMS PVL Cohort

Total # potentially eligible household members: 24,484* (Dec '10- June '11)

✖ No contact 3,812* (15%)

✖ Refused 2,493* (10%)

✔ Participated 18,179* (74%)

✔ HIV+ 5,802* (32%)

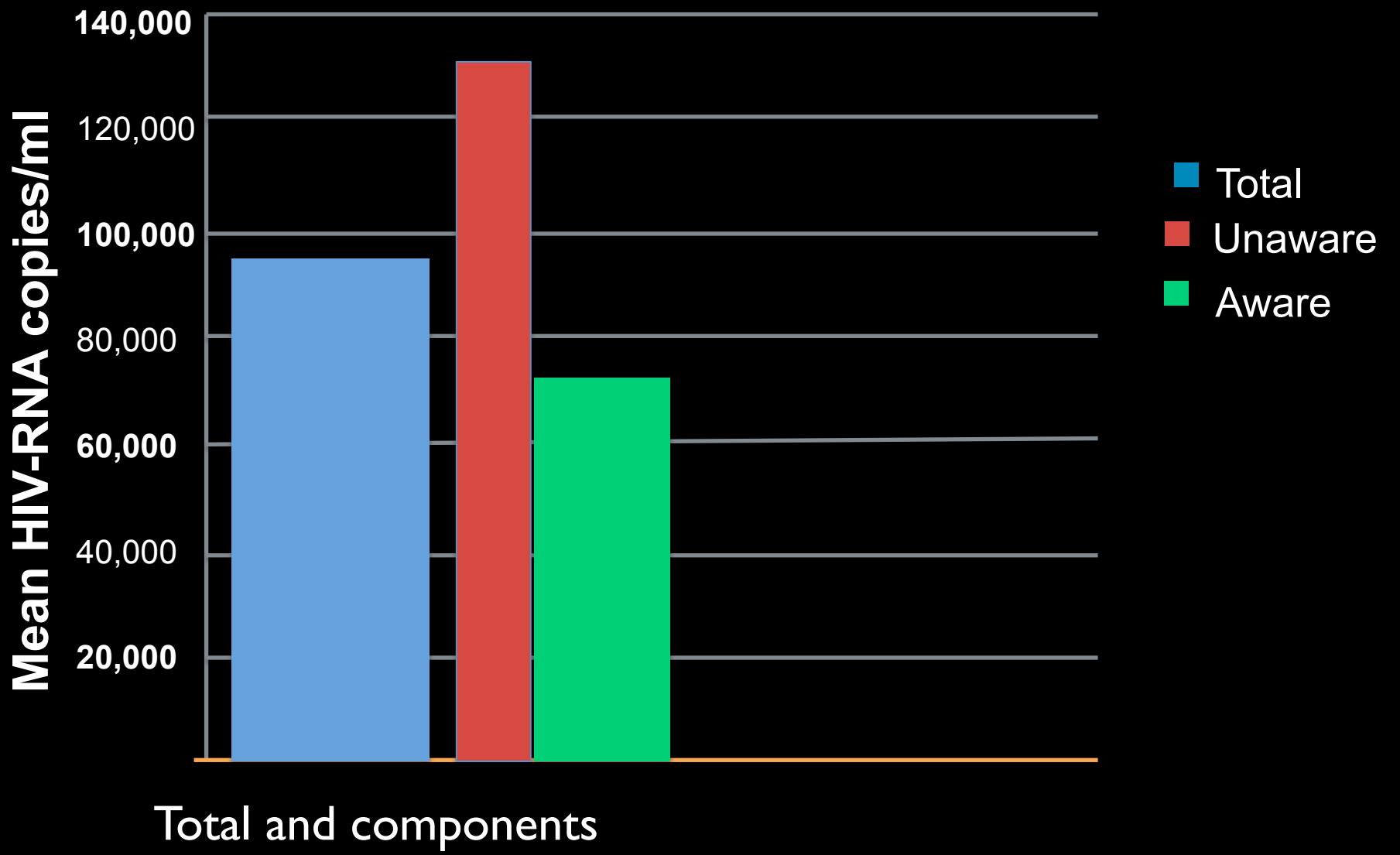
HIV-Neg 12,370* (68%)

*unweighted

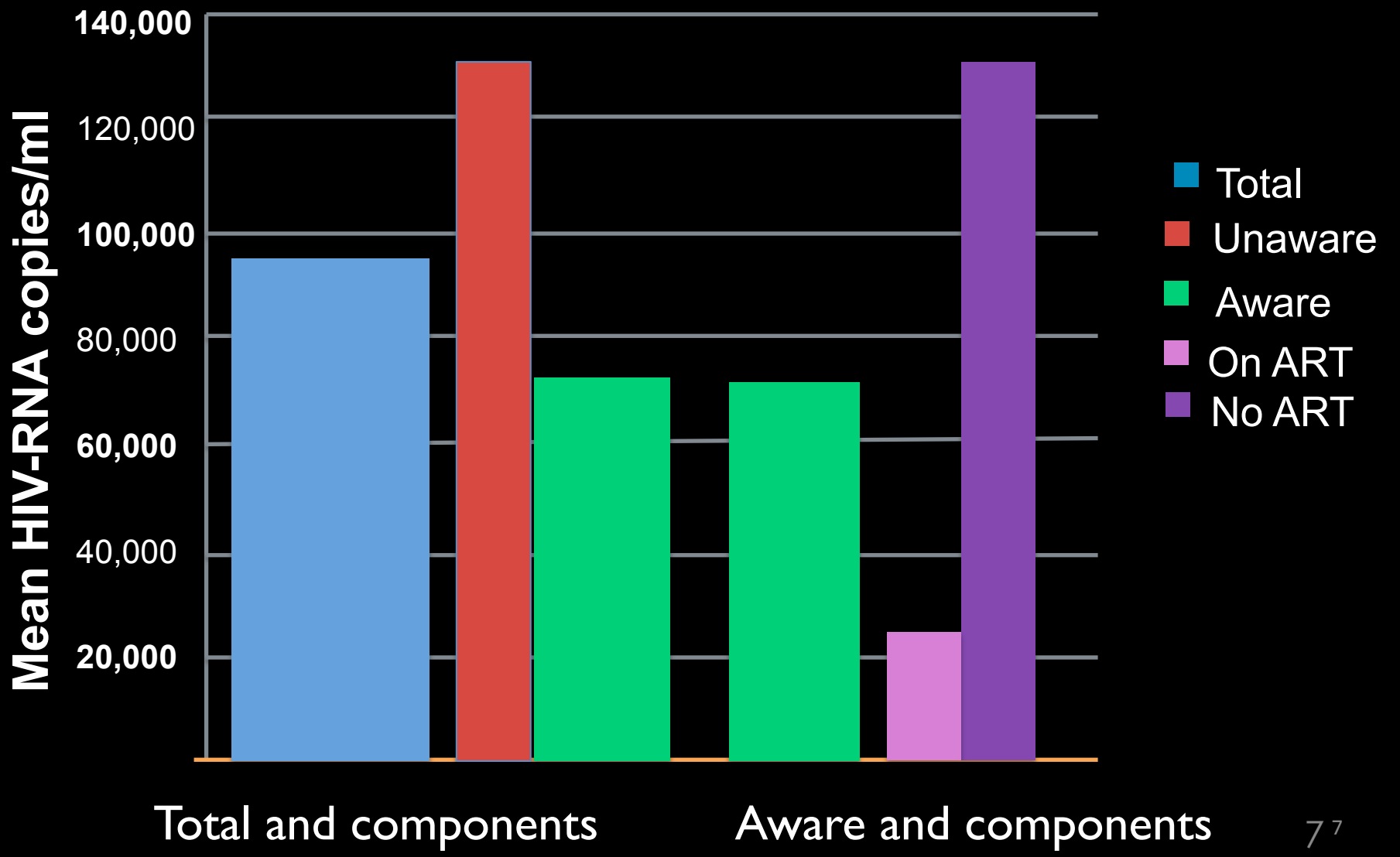
Shims
Swaziland HIV Incidence Measurement Survey

Justman et al, CROI 2013

Mean Population VL and Components



Mean Population VL and Components



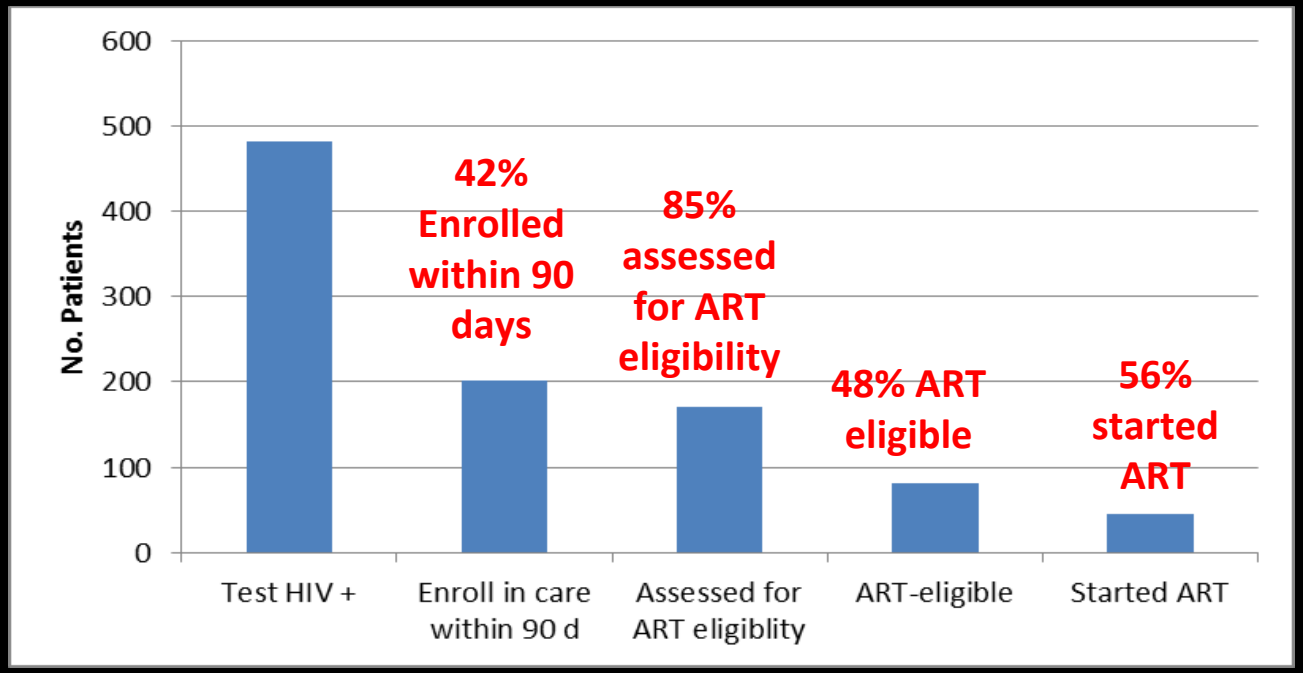
OPEN ACCESS Freely available online

PLoS one

Patient Enrolment into HIV Care and Treatment within 90 Days of HIV Diagnosis in Eight Rwandan Health Facilities: A Review of Facility-Based Registers

...Asiimwe[4],

- 8 health clinics
- 492 patients testing HIV+ from March-May 2009
- Testing sites: ANC, VCT, TB, OPD
- Median age 29 years, median CD4+ 387 cells/uL



Kaygamba et alPlos One, May 2012

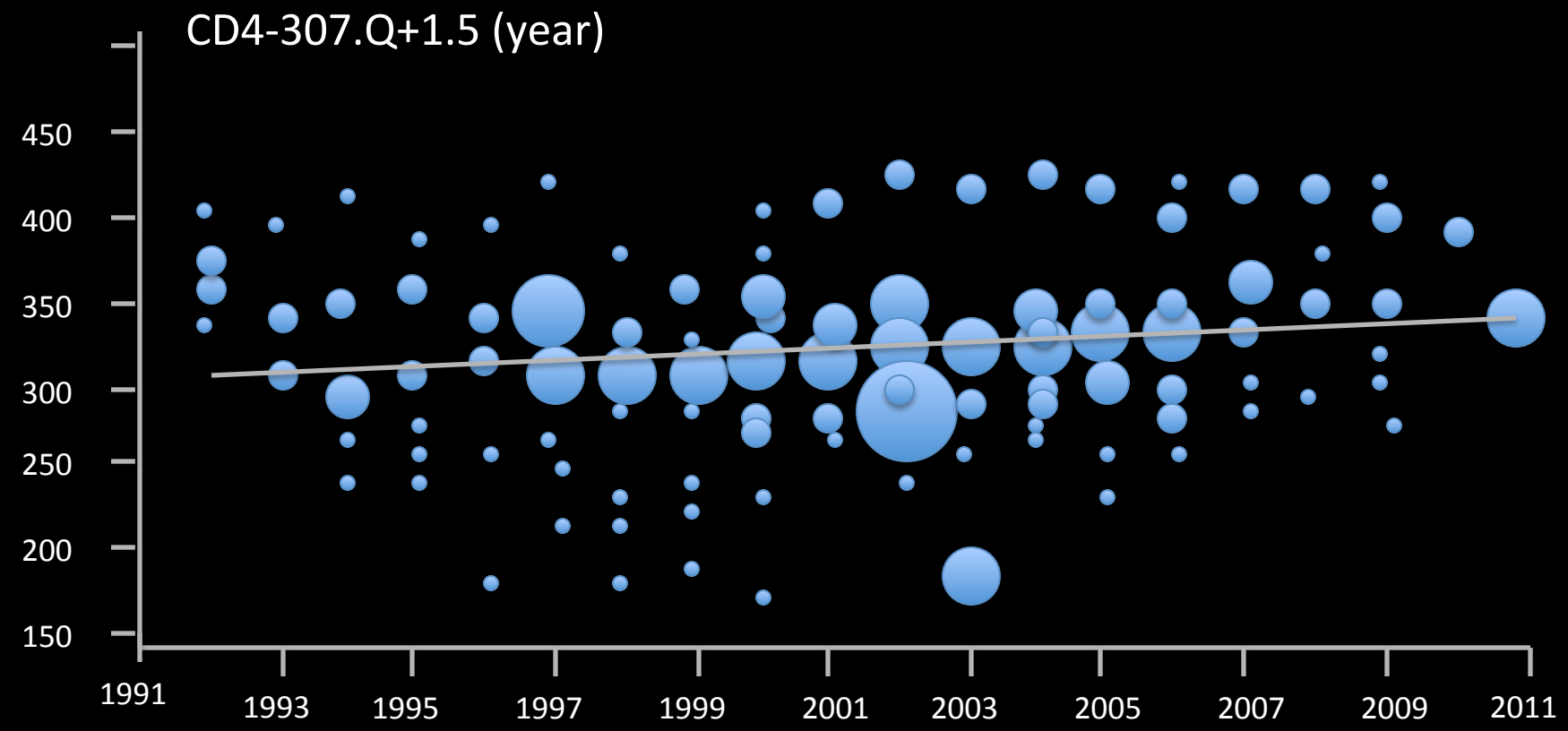
Linkage to HIV Care and ART by HIV Testing Service Type: Central Mozambique
A Retrospective Cohort Study

Outcome			Association	
	Venue	N (%)	RR (95% CI)	P
ART clinic enrollment ≤ 30 d of testing HIV +	VCT	16,232 (68)	Ref	
	PMTCT	5657 (58)	0.84 (0.72 to 1.02)	0.08
CD4 Testing ≤ 30 d of enrollment	VCT	10,773 (45)	Ref	
	PMTCT	2935 (30)	0.79 (0.66 to 0.94)	0.01
ART initiation ≤ 90 d of first CD4 test (if eligible)	VCT	2562 (11)	Ref	
	PMTCT	321 (3)	0.51 (0.41 to 0.64)	<0.001

- No significant difference in HIV care enrollment between PMTCT and VCT
- Poor linkages between HIV testing and care hamper efforts to improve coverage for HIV care and treatment services.
- Increased loss to follow-up among women diagnosed in PMTCT relative to VCT

Gerdts et al. JAIDS 2014

Mean CD4+ Cell Count Over Time in Developed Countries N= 44 studies



Lesko et al Clin Infec Dis 2013

Barriers to Testing and Linkage of HIV+

- Unaware of risk of HIV
- Disenfranchised and stigmatized population
- Fear of discrimination and stigma
- Unaware of benefits of knowledge of status
- Limited or difficult access to testing and care
- Provider bias or practices
- Unwelcoming services

Linkage to Care: Systematic Review

Table 2. Areas for intervention.

Factor	Predictor of attrition	Barrier to care	Number of papers cited in	Referenced in
ECONOMICAL				
Transport costs	YES	YES	13	18,27,29,32–35,37–39,41,43,44
Distance	YES	YES	9	17–19,21,33,36,39,43,51
Employed patients that are unable to take time off work for clinic visits		YES	6	18,19,39,41,44,46
Food shortage		YES	5	33,36,38,40,42
Patient-related time constraints		YES	2	18,39
PSYCHO-SOCIAL				
Stigma and fear of disclosure		YES	14	11,19,27,31,32,35,36,38–43,45
Fear of drug toxicities		YES	7	19,27,32,36,40,42,43
Perceived good health		YES	5	11,14,32,43,51
HEALTH SYSTEMS				
Long clinic waiting times		YES	7	31–36,39
Poor service received from HCWs		YES	5	31,32,35,38,39
Shortage of HCWs[a]	YES	YES	4	21,33,36,45
Inconvenient clinic hours		YES	2	32,39
MEDICAL				
Advanced immunodeficiency	YES		5	10,13,22,24,27
On TB[b] therapy/co-infected with TB	YES	YES	4	13,37,41,45
Pregnancy	YES		2	12,23
Severe malnutrition	YES		2	13,28
OTHER				
Male gender	YES		7	20–22,25–27,49
Younger age	YES		6	13,23,25,26,47,49
Low levels of education	YES		2	12,28

[a]healthcare workers.
[b]tuberculosis.

Most common factors: 1) transport costs, 2) stigma/disclosure, 3) clinic factors

Govindasamy et al. AIDS June 2012

Types of Interventions

Biomedical

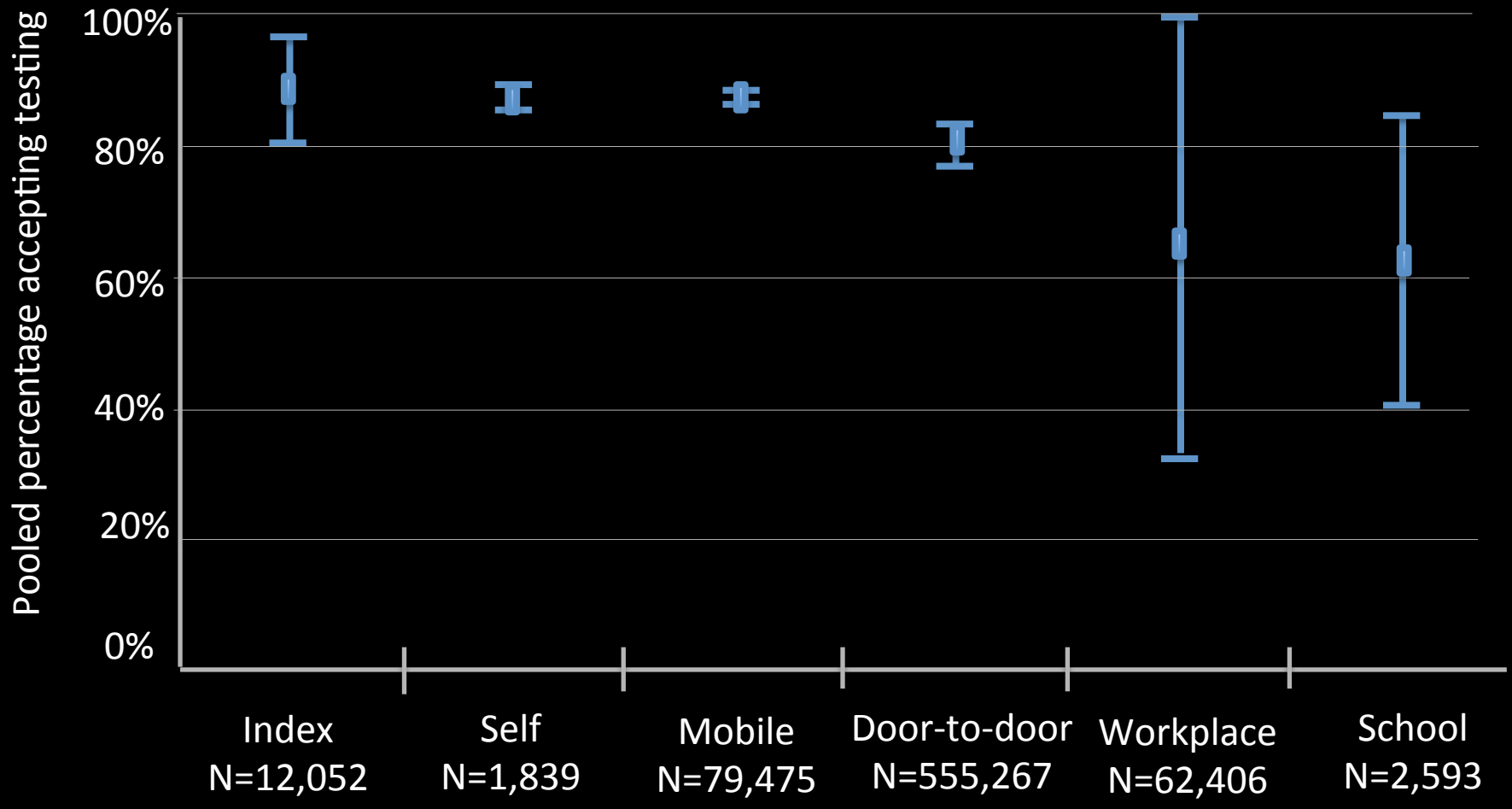
Behavioral

Structural

Strategies to Increase HIV Testing

- Home Based Testing and Counseling (HBTC)
- Community Based Testing and Counseling (CBTC)
- Self-Testing
- Provider Initiated Testing and Counseling (PITC)
- PITC for specific populations: PMTCT, TB
- Couples counseling and testing
- Tailored testing interventions for key and vulnerable populations
- Voluntary Counseling and Testing (VCT)

Uptake of Community HIV Testing and Counseling



Suthar et al PLoS 2013

Strategies to Increase Testing - HBTC

- Trained counselors conducted home visits and offered HIV testing
- Persons ≥ 13 years
- Children at risk
- More than 154,000 tested
  - 22% adolescents (13-18 years)
  - 19% younger adults (19-24 years)
  - 59% ≥25 years
- High acceptance
  - Less likely to test if previously tested
  - More likely to be HIV+ if previously tested and agree to re-test
- HIV +ve referred to care

Wachira et al. JAIDS 2014

Provider Initiated Testing and Counseling (PITC)

AIDS Behav (2011) 15:751–760
DOI 10.1007/s10461-010-9704-1

ORIGINAL PAPER

Linkage to HIV Care and Survival Following Inpatient HIV Counseling and Testing

Rhoda K. Wanyenze · Judith A. Hahn · Cheryl A. Liechty · Kathie Ragland · Allan Ronald · Harriet Mayanja-Kizza · Thomas Coates · Moses R. Kamya · David R. Bangsberg

- RCT conducted at Mulago Hospital in Uganda
- 500 consenting patients were randomized to inpatient HTC (intervention arm) or outpatient HCT 1 week post –discharge (control arm)
- HCT was received by 98.8% (n=248) in the intervention arm compared to 68.7% (n=171) control arm.

HIV Self-Testing

- Individuals offered oral self-testing
- 260 of 283 opted for self-testing
- Accuracy 99.2%
- 98.5% rated test "not hard at all"
  - 10% minor procedural errors
  - 10% required extra help

Choko et al. PLOS Med 2011

Strategies to Improve Linkage

- Co-location of services
- Decentralization of services
- Use of Peer Support/PLWH patient navigators
  - Craw et. al. BMC Health Services Research 2010
  - Hatcher et. al. AIDS Behav. 2012)
- Referral after Home HTC
  - van Rooyen et. al. JAIDS 2013
- Point of Care CD4 Cell Count Testing
  - Wynberg et. al. JIAS, 2014

Strategies to strengthen linkage to care – PLWH Navigators

AIDS Behav (2012) 16:1295–1307
DOI 10.1007/s10461-011-0065-1

ORIGINAL PAPER

Predictors of Linkage to Care Following Community-Based HIV Counseling and Testing in Rural Kenya

Abigail M. Hatcher · Janet M. Turan · Hannah H. Leslie · Lucy W. Kanya · Zachary Kwena · Malory O. Johnson · Starley B. Shade · Elizabeth A. Bukusi · Alexandre Doyen · Craig R. Cohen

- Following the HBTC campaign, PLWH navigators attempted to conduct home visits to offer support for enrolling into HIV care
- Of 483 persons consenting to follow-up, 305 (63.2%) enrolled in HIV care within 3 months of an HIV diagnosis.

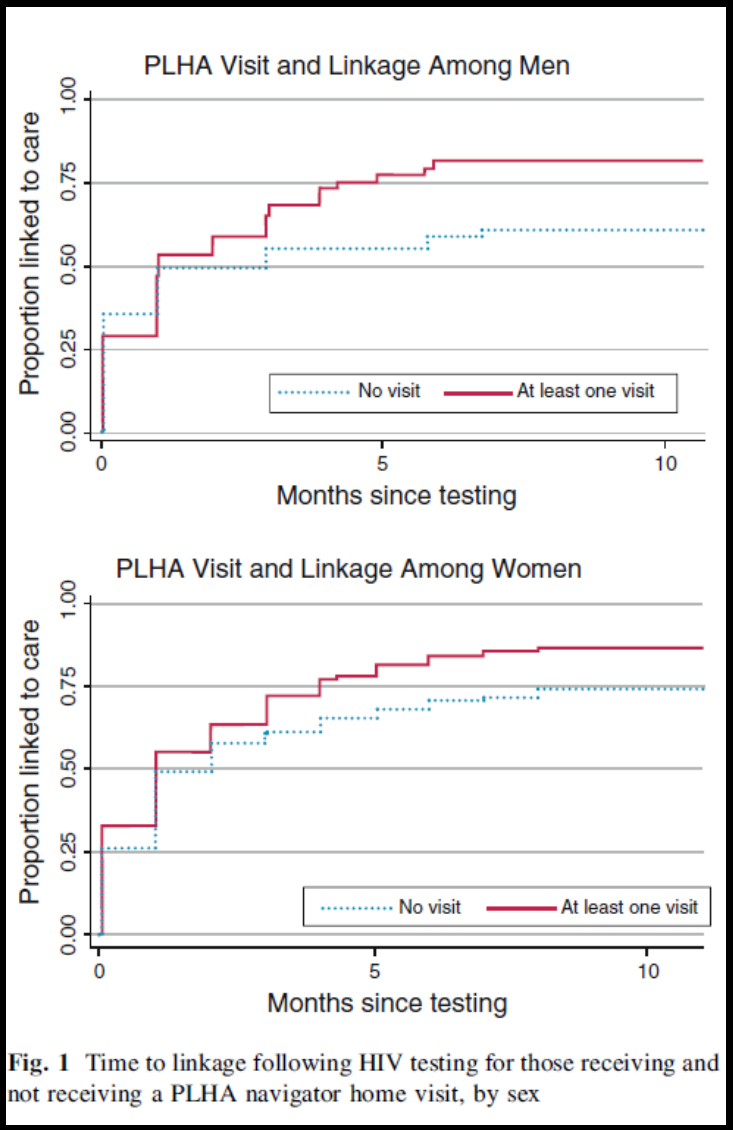


Fig. 1 Time to linkage following HIV testing for those receiving and not receiving a PLHA navigator home visit, by sex

Point of Care CD4+ Cell Count

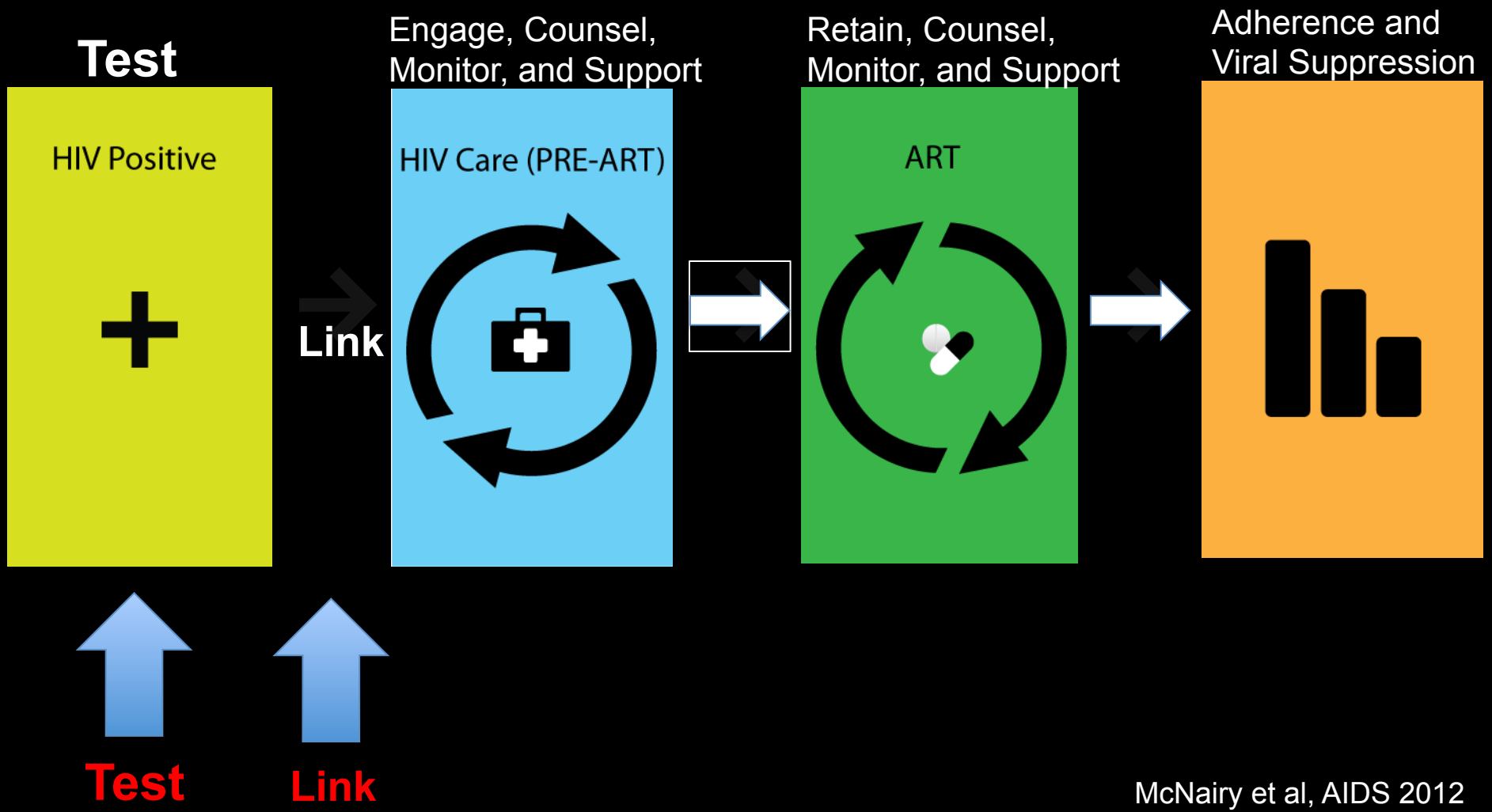
Location	Outcome Linkage	Standard CD4 Count	POC CD4 Count
1. South Africa	Attendance for further care after HIV test	33%	43%
2. South Africa	Initiation of ART within 16 weeks of HIV test for those with CD4 < 250 at diagnosis	62%	75%
3. South Africa (Mobile VCT)	Self-reported attendance at referral site w/in 8 weeks of HIV test for those reached by phone	42%	61%
4.Mozambique	Enrollment in HIV care after HIV test	63%	89%

Slide from Rosen et al. CROI 2011 Presentation
"From HIV Testing to ART Initiation: the missing Link"

1. Faal et al IAS 2010
2. Larson et al 2011
3. Larson et al 2011
4. Jani et al IAS 2010

Unanswered Questions

HIV Care Continuum



McNairy et al, AIDS 2012

HPTN 065 (TLC-Plus)

Test

HIV Positive

+

Link

Engage, Counsel, Monitor, and Support

HIV Care (PRE-ART)

ART Eligible

Retain, Counsel, Monitor, and Support

ART

Adherence and Viral Suppression

Financial incentives

Provider training

Financial incentives

Community Mobilization
Facility testing

McNairy & El-Sadr, AIDS 2012

HPTN 071 (PopART)

21 communities
Population: **1.2 million**

Test

HIV Positive

Link

Engage, Counsel, Monitor, and Support

HIV Care (PRE-ART)

ART Eligible

Retain, Counsel, Monitor, and Support

ART

Viral Suppression

CHIPs for Linkage

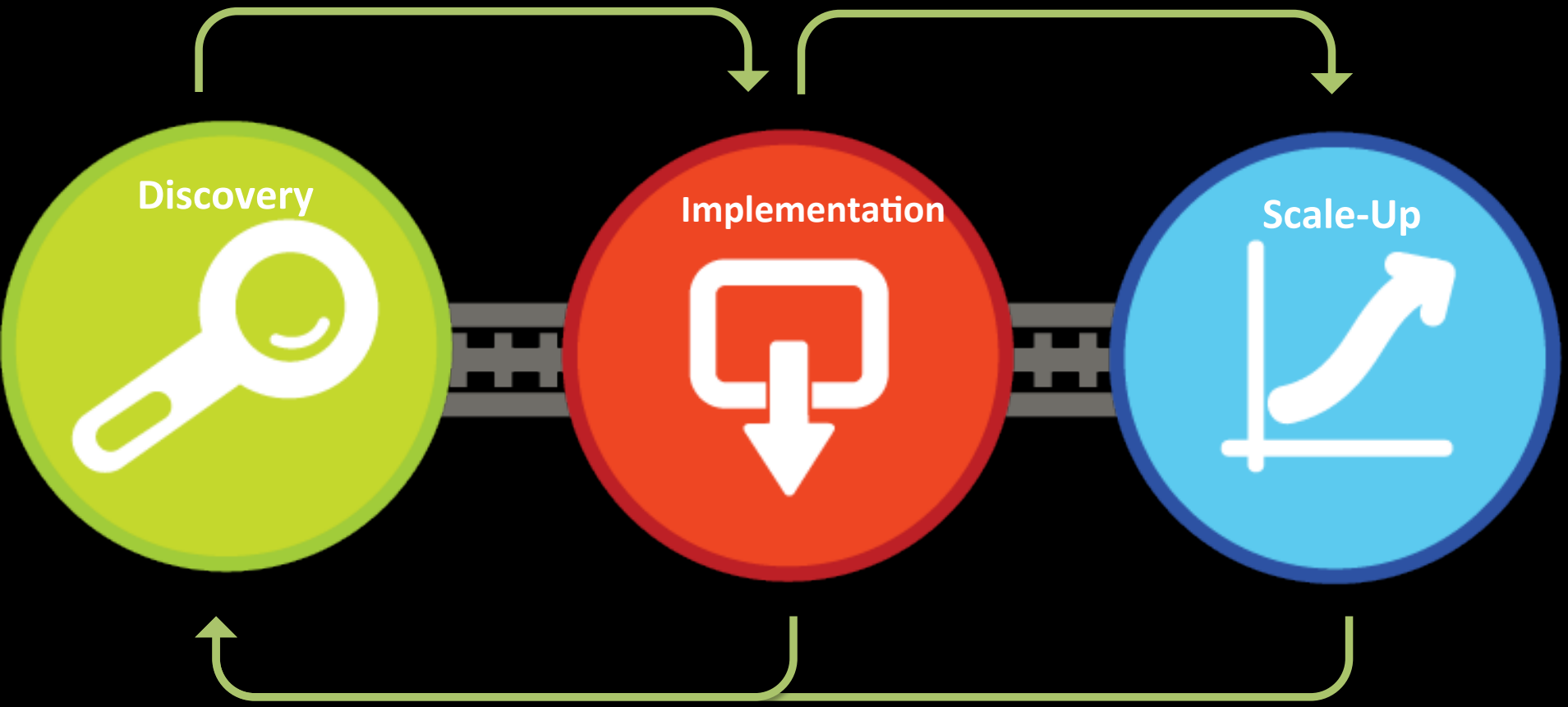
Household testing

Universal ART

CHIPs for retention And adherence

McNairy & El-Sadr, AIDS 2012

The Science of Implementation and Scale-Up



Link4Health

Swaziland combination strategy for linkange and retention

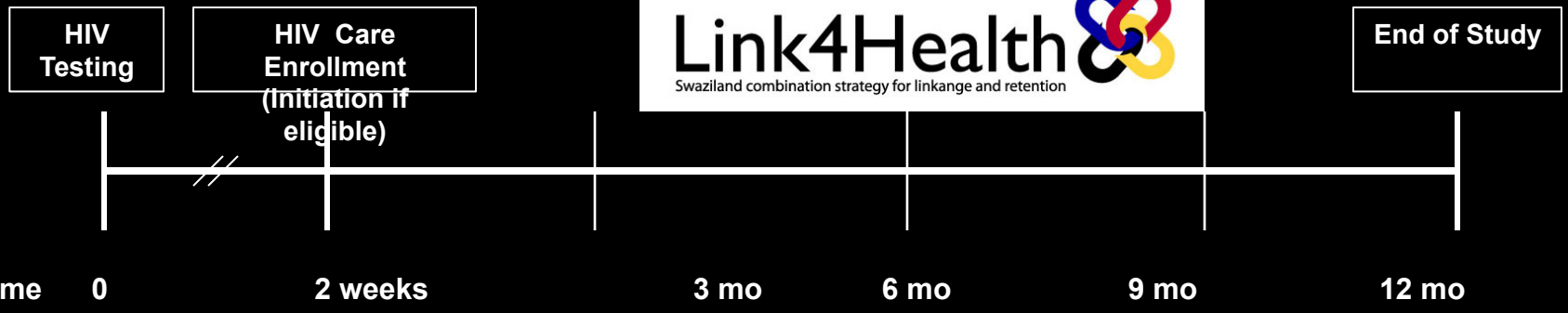
ENGAGE4HEALTH

LIGAÇÕES PELA SAÚDE

Start
TB patients on
ART and
Retain on
Treatment

MIR4HEALTH

Mother and Infant Retention for Health



INTERVENTION	Testing	2 weeks	3 mo	6 mo	9 mo	12 mo
1. POC CD4	X					
4. Care Bag, Education	X	X	X	X	X	X
2. Accelerated ART initiation		X				
3. SMS Reminders		X	X	X	X	X
5. Financial Incentives		X		X		X

Outcomes Primary

1) Retention at 12 months from testing

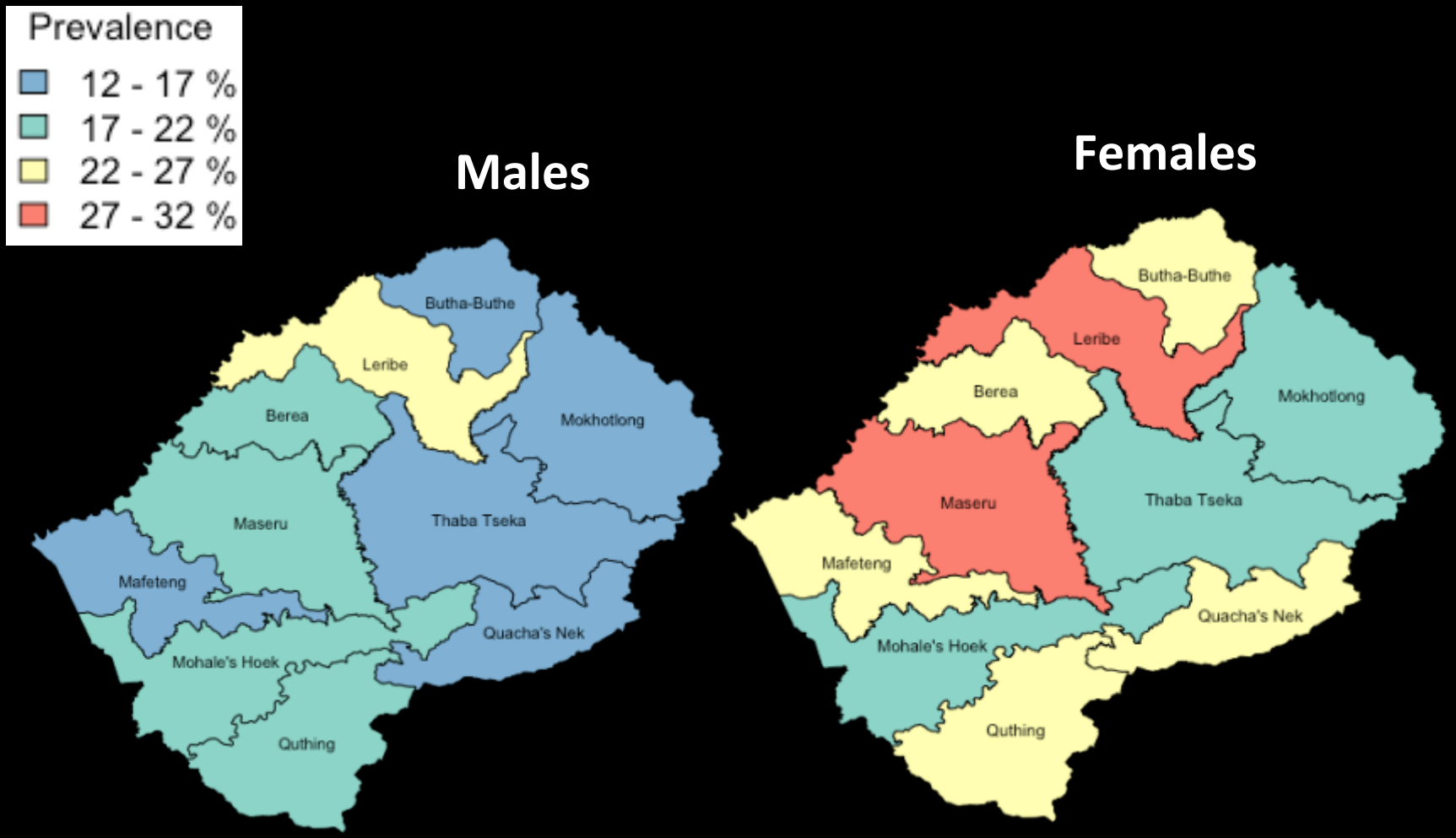
2a) Linkage at 3 months

2b) Retention from enrollment at 6 months

Way Forward

Tip of the Iceberg

HIV Prevalence in Lesotho Healthcare Districts by Gender

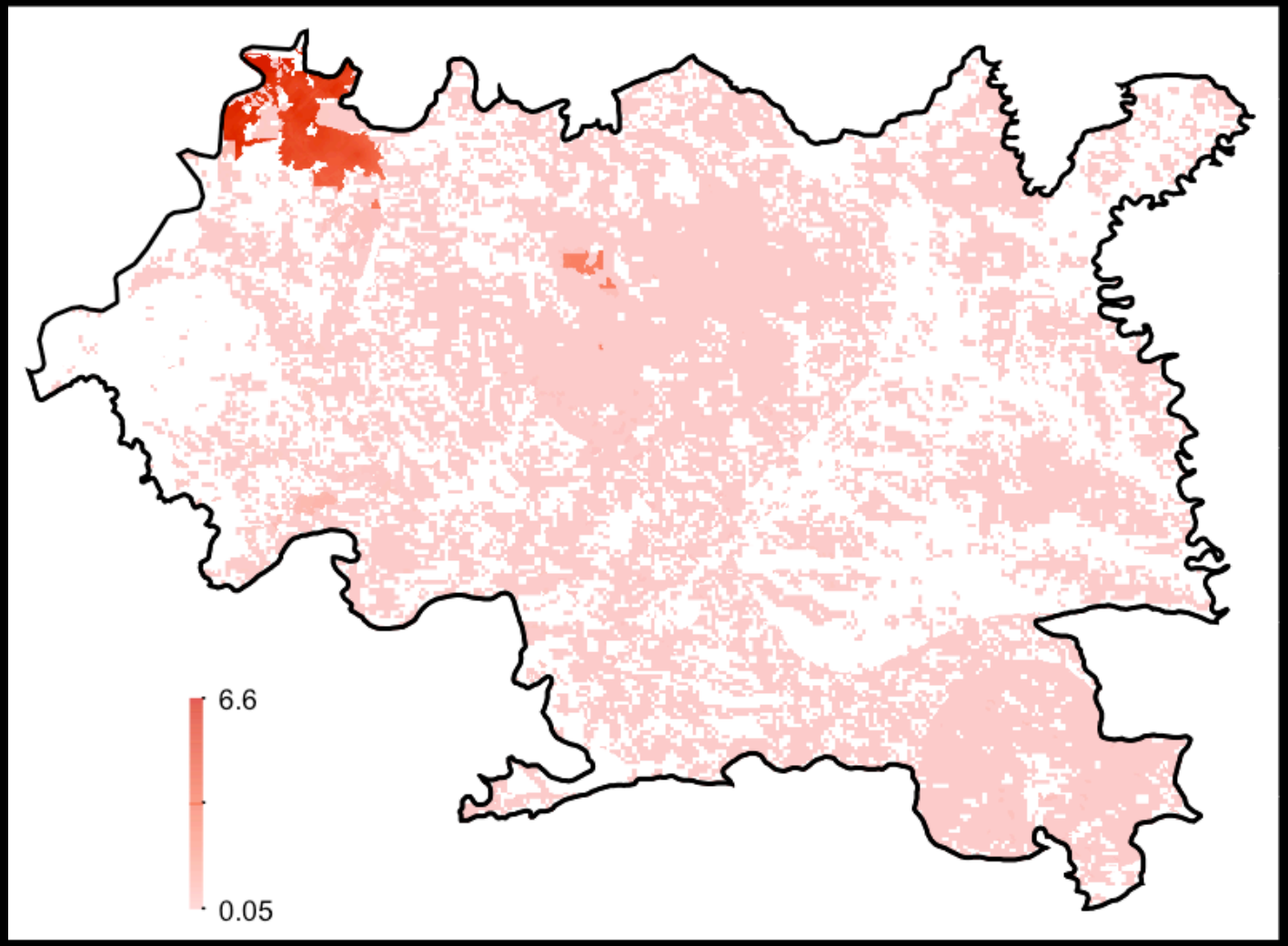


BJ Coburn, JT Okano, S Blower. *BMC Medicine* 2013, 11:224.

Maseru District, Lesotho

Infected Individuals per 100 m^2

15-49 years old

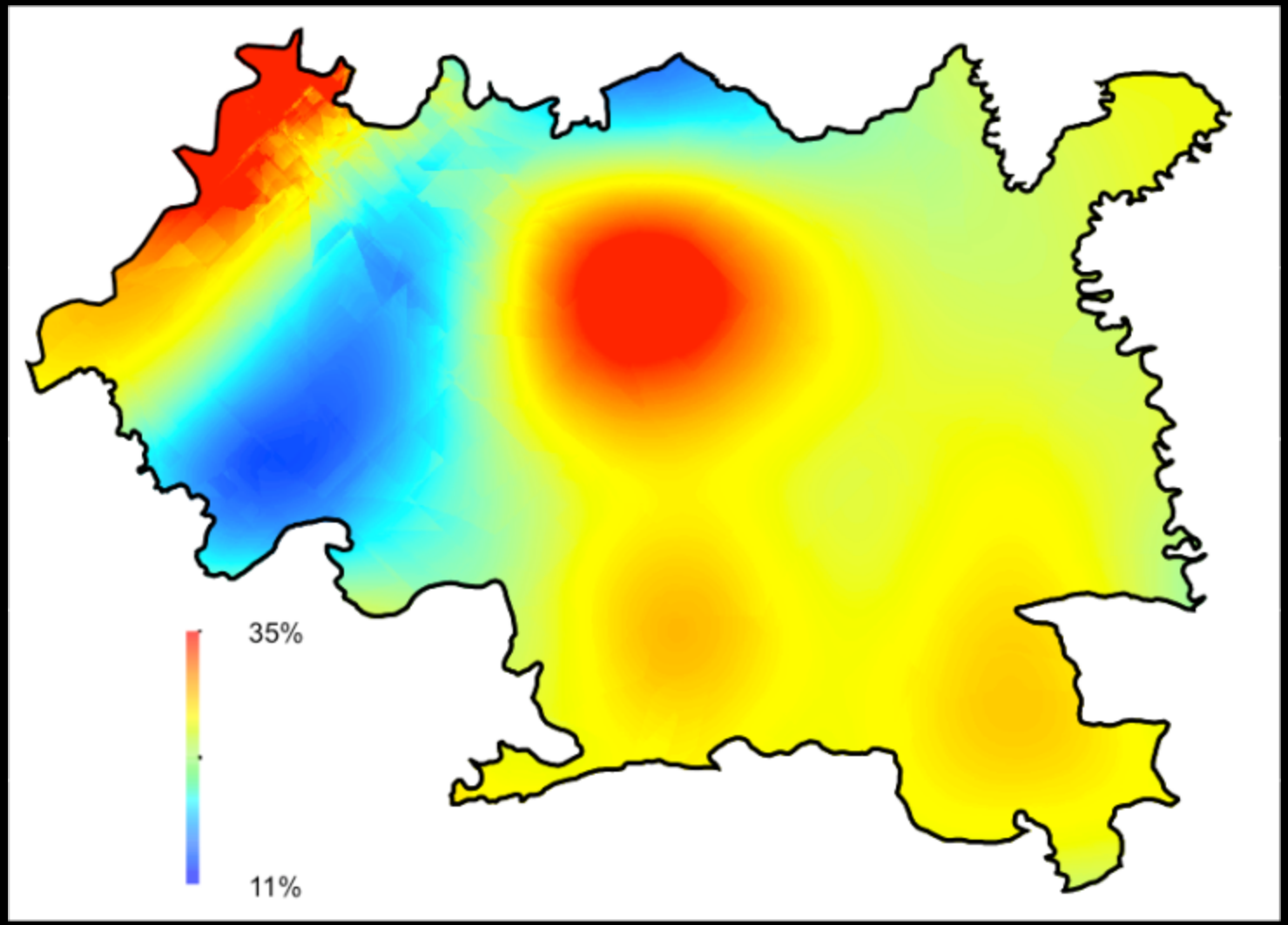


~46,000 HIV-infected individuals

BJ Coburn, S Blower. Lancet Global Health 2013, 1:5, e251-e253 .

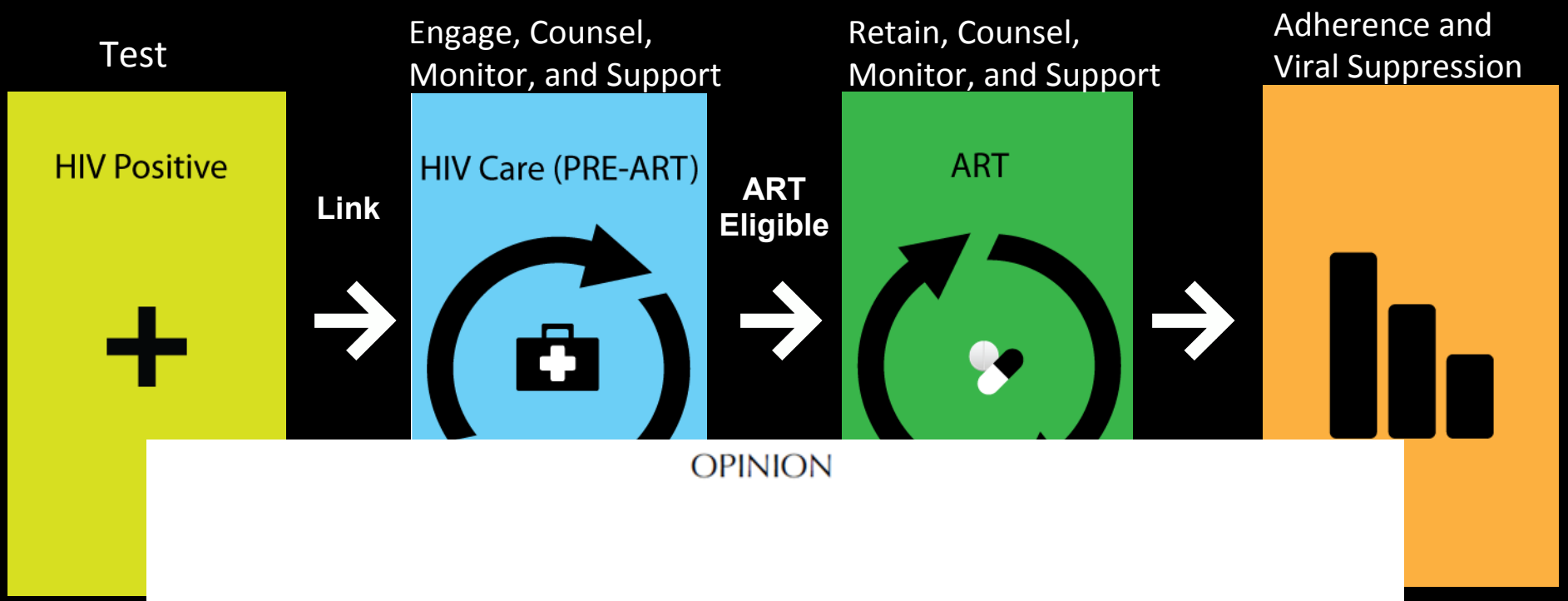
Maseru District, Lesotho

HIV Prevalence: 15 to 49 years old



BJ Coburn, S Blower. Lancet Global Health 2013, 1:5, e251-e253 .

HIV Continuum



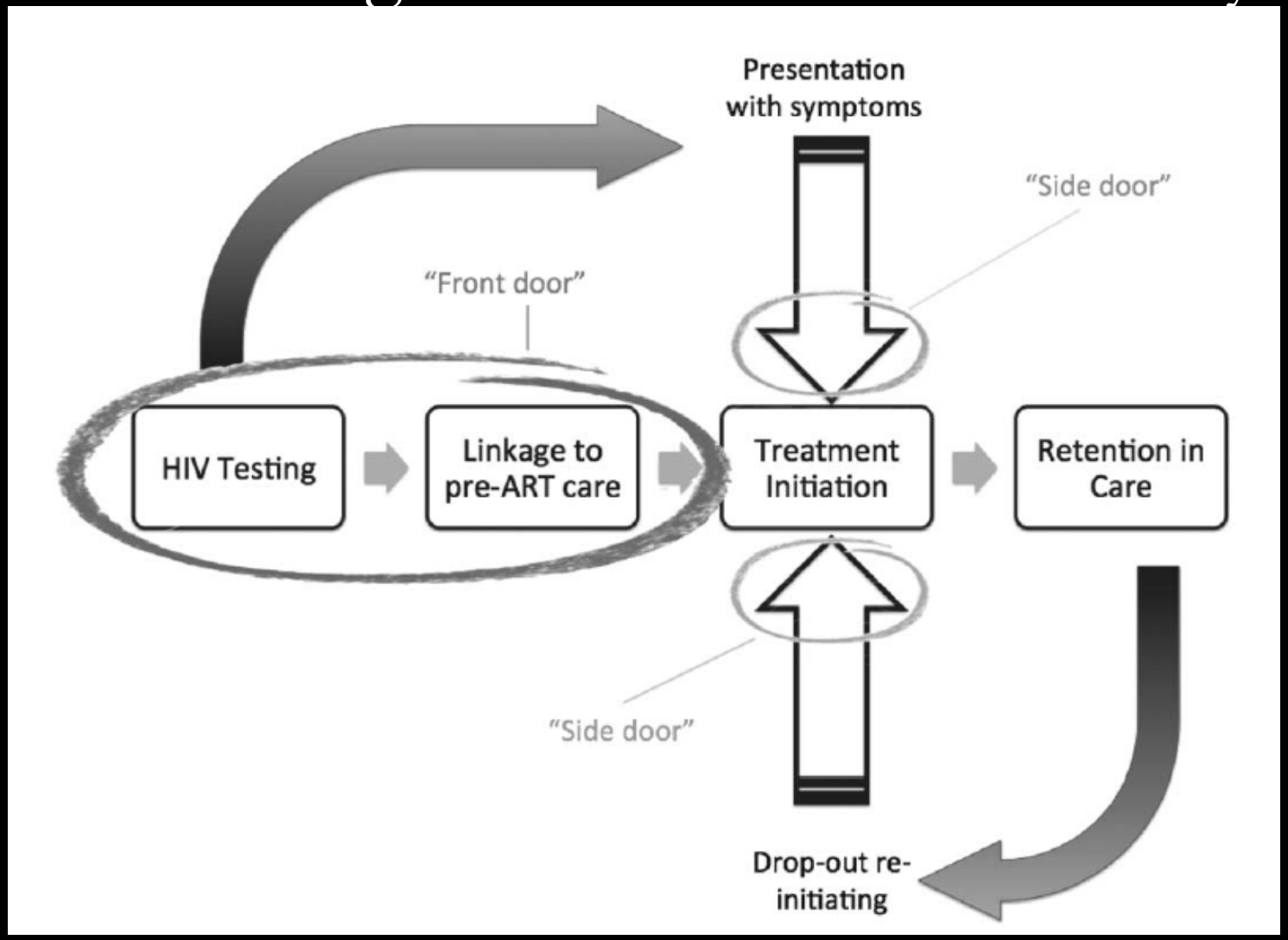
OPINION

The HIV care continuum: no partial credit given

Margaret L. McNairy[a,b,c] and Wafaa M. El-Sadr[a,b]

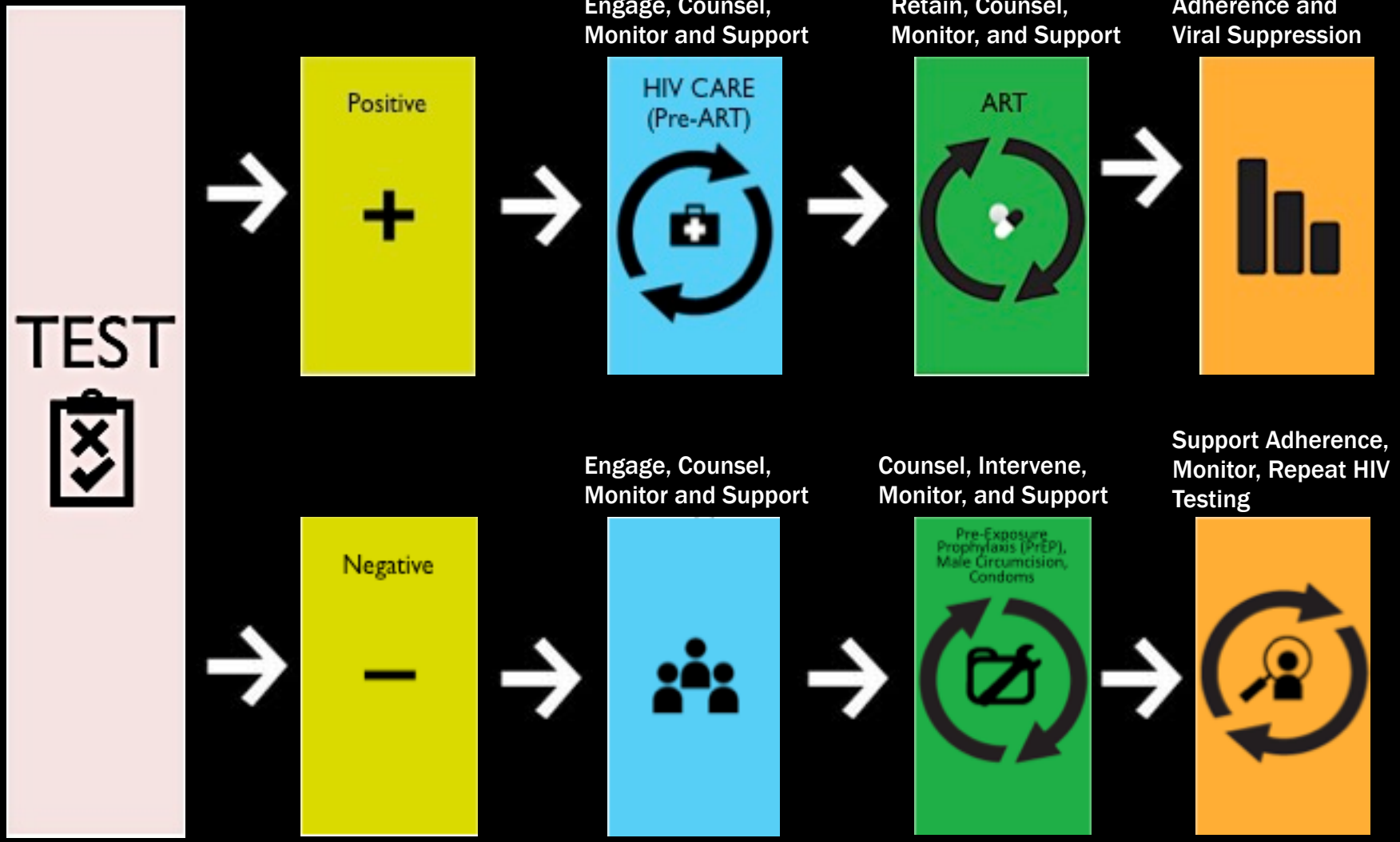
McNairy et al, AIDS 2012

Side Door
Finding PLWH in the Community



Hallett et al. JAIDS 2013

Paradigm Shift: Focus on the HIV Prevention Continuum



McNairy, Clin Inf Dis 2014

Opportunities and Challenges

- Testing is the foundation for all HIV-related programming
  - Multiple approaches available
  - Need to use combined approaches
  - Adapt to specific populations
  - Focus on HIV negatives and positives
  - Develop new metrics
  - Aim for high coverage
- Linkage is critical missing link in the chain
  - Promising approaches
  - Co-location of testing and care services
  - Navigation
  - Decentralization of services
  - Welcoming, patient friendly care
- Many unanswered questions necessitate continued innovation and research

Thank you

Access Acceptability Quality Coverage Effectiveness

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