

# REFLECTIONS ON ADHERENCE 2017

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MICHAEL STIRRATT PHD

NIMH DIVISION OF AIDS RESEARCH

JUNE 6 2017

# CONFLICT OF INTEREST DISCLOSURE

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Michael Stirratt, Ph.D.

Has no real or apparent conflicts of interest  
to report

# RAPPORTUER CLUB





# Adherence 2017

JUNE 4 - 6, 2017 • MIAMI

- 500+ delegates
- 450+ abstracts submitted
- More presentations than I can count

CONFERENCE THEME

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# ACTIONING THE VISION

# THE VISION

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# 90-90-90 and Continuum of Care Targets



Know status



On treatment



Virally suppressed



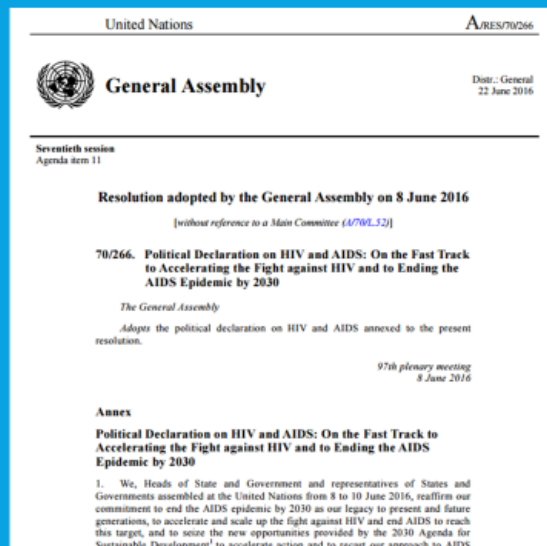
# ON THE FAST-TRACK TO ACCELERATE THE FIGHT AGAINST HIV AND TO END THE AIDS EPIDEMIC BY 2030

2016 Political Declaration

César A. Núñez  
04 June 2017



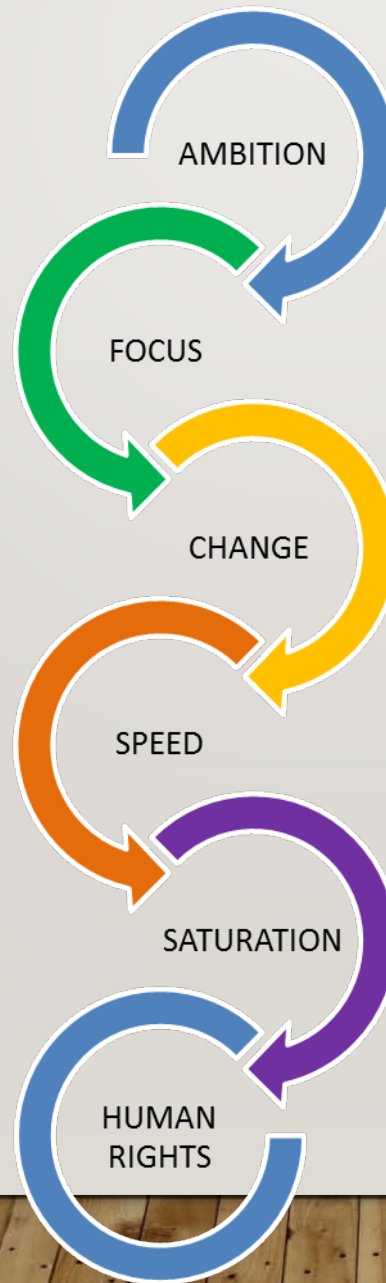
Cesar Nunez Plenary  
#Adherence2017



Getting to zero



# THE CORE FAST-TRACK PRINCIPLES



Building solid political commitment for ambitious prevention, testing, treatment and rights targets for 2020 and beyond. Set national and sub-national targets, informed by global targets

Achieving detailed, localized understanding of country epidemics and drivers, and focus services and resources on locations and populations with the largest HIV burden.

Stopping what does not work. Quickly introduce new evidence-based approaches. Broaden options for service delivery to reduce the burden on strained health systems and extend the reach of services, including greater use of community-based approaches and new partnerships.

Drastically quickening the pace and accelerate the scale up of services over the next five years.

Delivering HIV services in the intensity and quality needed to reach the targets within the next five years. Implement the full complement of high-impact HIV services in prioritized locations and populations.

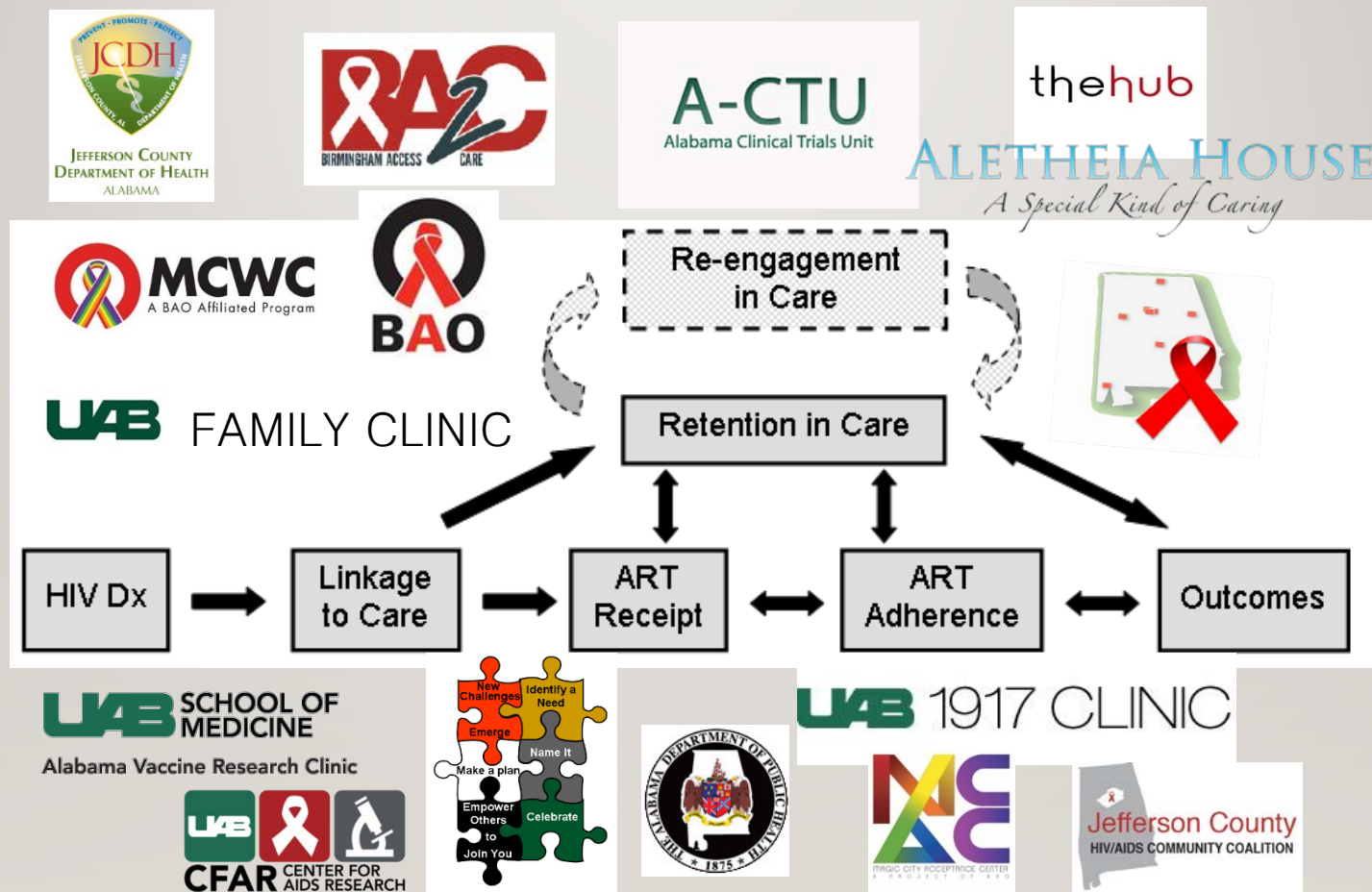
Ensuring that services are people-centred. Repeal laws, reform policies and end practices that hold back a more effective and equitable AIDS response.

# FAST TRACK PANEL: MONDAY JUNE 5



#Adherence2017

# MUGAVERO: PARTNERSHIPS ARE THE KEY

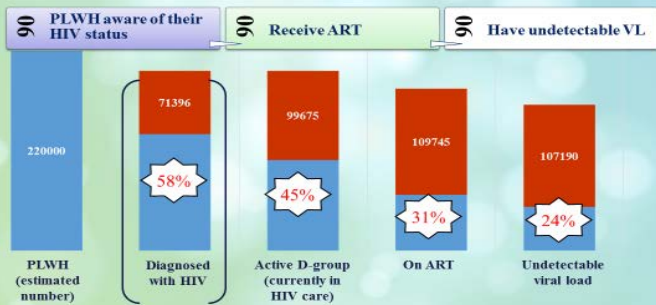


# CASCADE BRIGADE

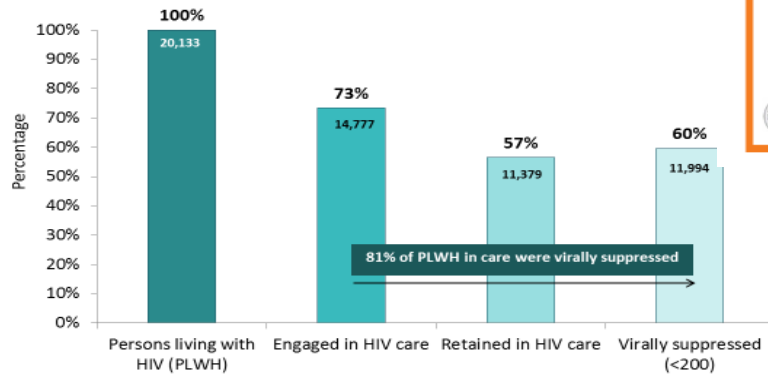
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## HIV treatment cascade in Ukraine, 2016

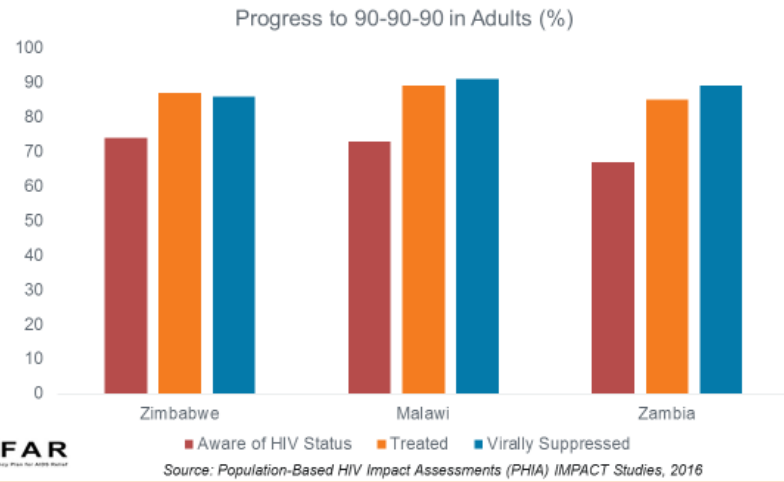


## HIV Continuum of Care Louisiana, 2016

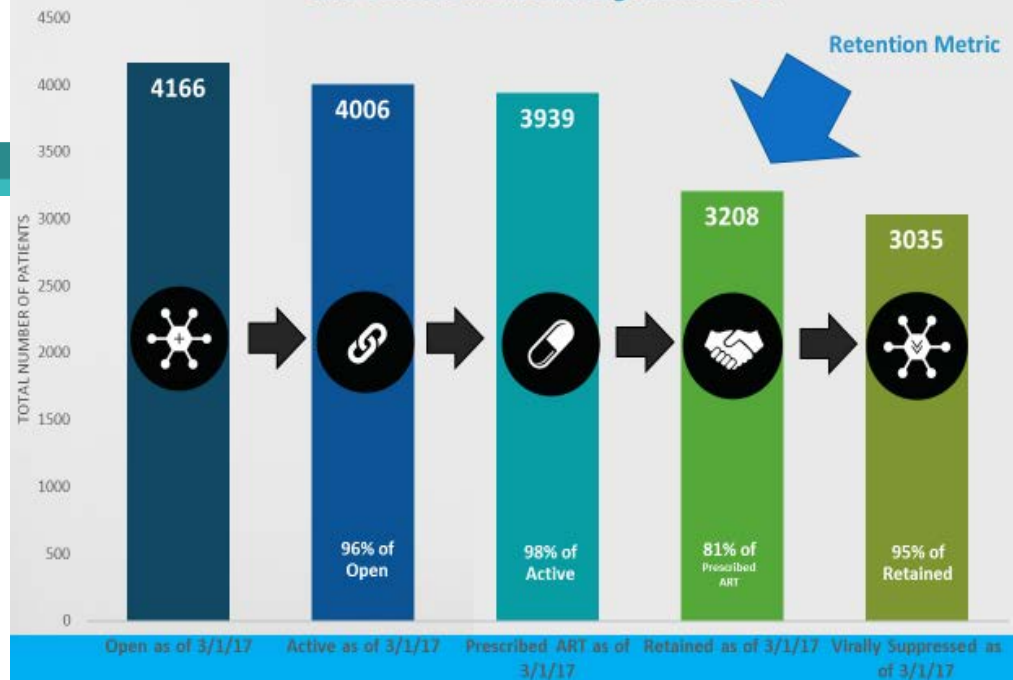


## Achieving Epidemic Control

Astounding Results from Zimbabwe, Malawi, and Zambia



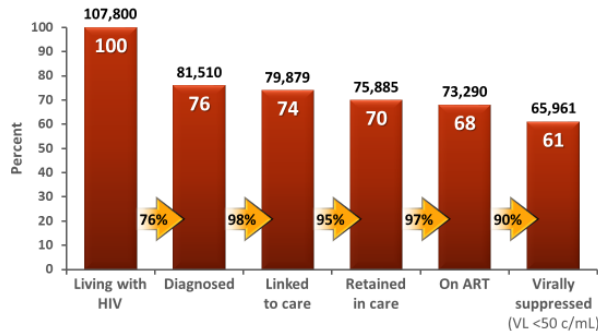
## Callen-Lorde Community Health Center Live Cohort Cascade through March 2017



Retention Metric

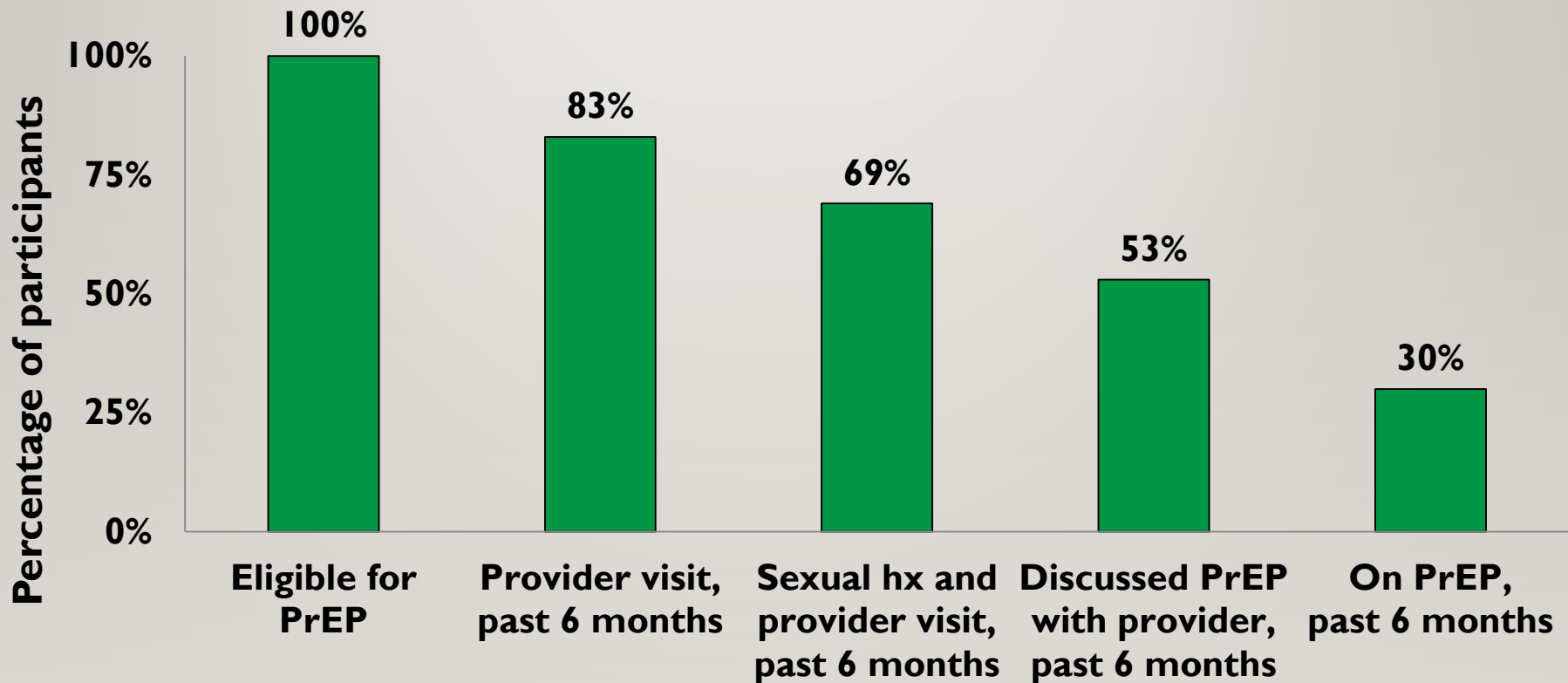


In UK, ~35,000 (32%) HIV infected people  
NOT on antiretroviral treatment





# HIV PREVENTION CONTINUUM AMONG NYC MSM ELIGIBLE FOR PREP\*



ORAL #270 (EDELSTEIN):  
HIV PREVENTION CONTINUUM AMONG MSM IN NEW  
YORK CITY, SPRING 2016

# BRUCE AGINS: ACTIONING CASCADES IN HEALTHCARE ORGANIZATIONS

## Why construct an organizational cascade

### *Ending the Epidemic*

- To assess how all PLWH who touch an institution are linked to ongoing care that results in achievement of viral load suppression.
- To identify areas of focus for reaching and engaging those patients in the community who are not connected to care and to spark associated improvement activities – within the community and in partnership with other agencies.
- To visually portray the success of agencies in achieving both patient and public health outcomes related to Ending the Epidemic.

# BRUCE AGINS: ACTIONING CASCADES IN HEALTHCARE ORGANIZATIONS

## Cascade measures

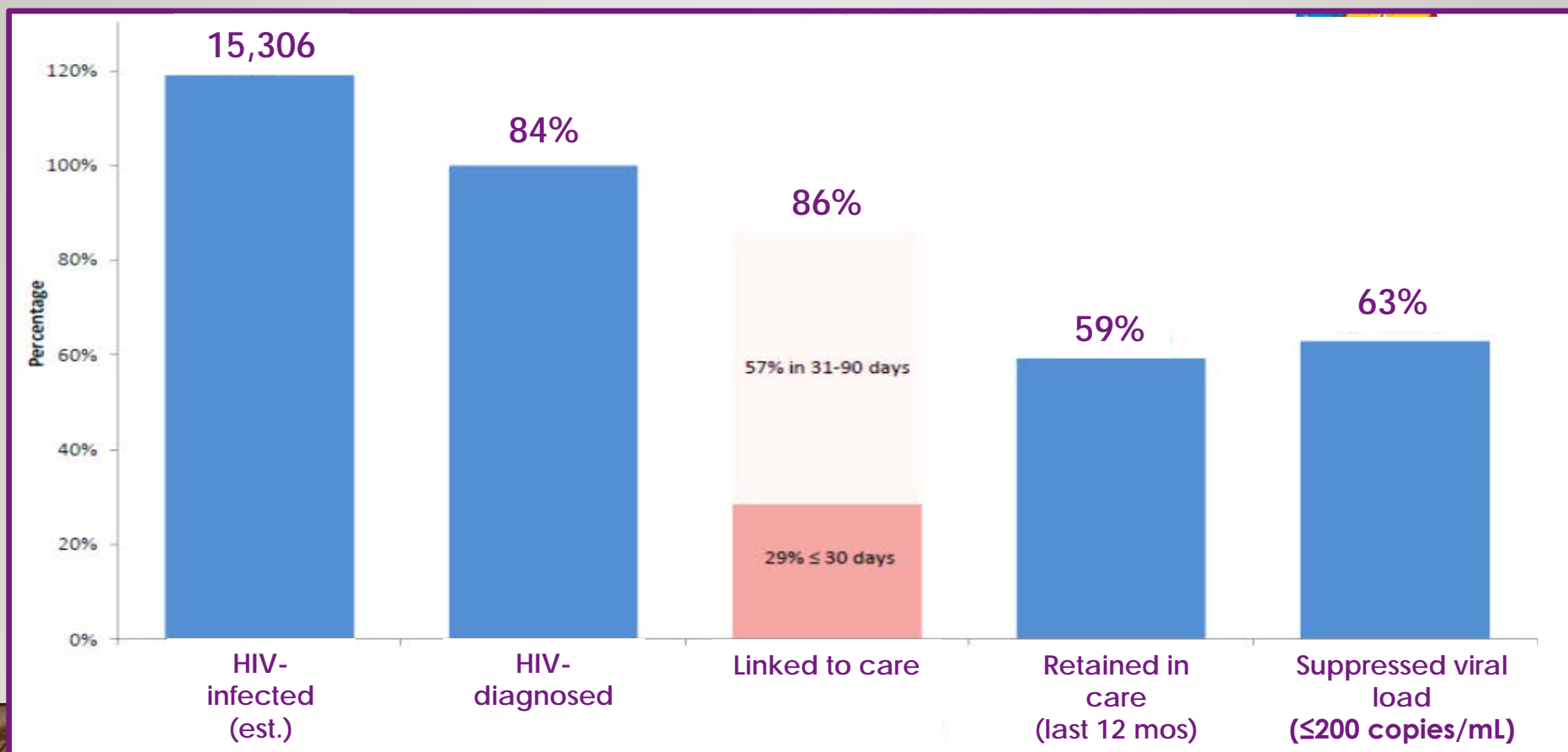
Measure	Calculation for newly diagnosed patients cascade	Calculation for established patients cascade
Linkage to HIV medical care	<p><i>Denominator:</i> Number of patients newly diagnosed with HIV during the measurement year.</p> <p><i>Numerator:</i> Number of patients who attended a routine HIV medical visit within 3 calendar days of diagnosis if linked to care within the organization, and within 5 calendar days of diagnosis if linked to care at an outside organization during the measurement year.</p>	Not applicable
Prescription of ART	<p><i>Denominator:</i> Number of patients newly diagnosed with HIV during the measurement year.</p> <p><i>Numerator:</i> Number of patients prescribed ART during the measurement year.</p>	<p><i>Denominator:</i> Number of patients in active caseload.</p> <p><i>Numerator:</i> Number of patients prescribed ART during the measurement year.</p>
Viral load suppression	<p><i>Denominator:</i> Number of patients newly diagnosed with HIV during the measurement year.</p> <p><i>Numerator:</i> Number of patients with a HIV viral load less than 200 copies/mL at last HIV viral load testing during the measurement year.</p>	<p><i>Denominator:</i> Number of patients in active caseload.</p> <p><i>Numerator:</i> Number of patients with a HIV viral load less than 200 copies/mL at last HIV viral load testing during the measurement year.</p>

30 days will no longer be regarded as "timely" linkage to care.



# HIV Treatment Cascade for Alabama (AL), 2016

## Via Oral #185, Scott Batey



Source: AL Department of Public Health (ADPH)

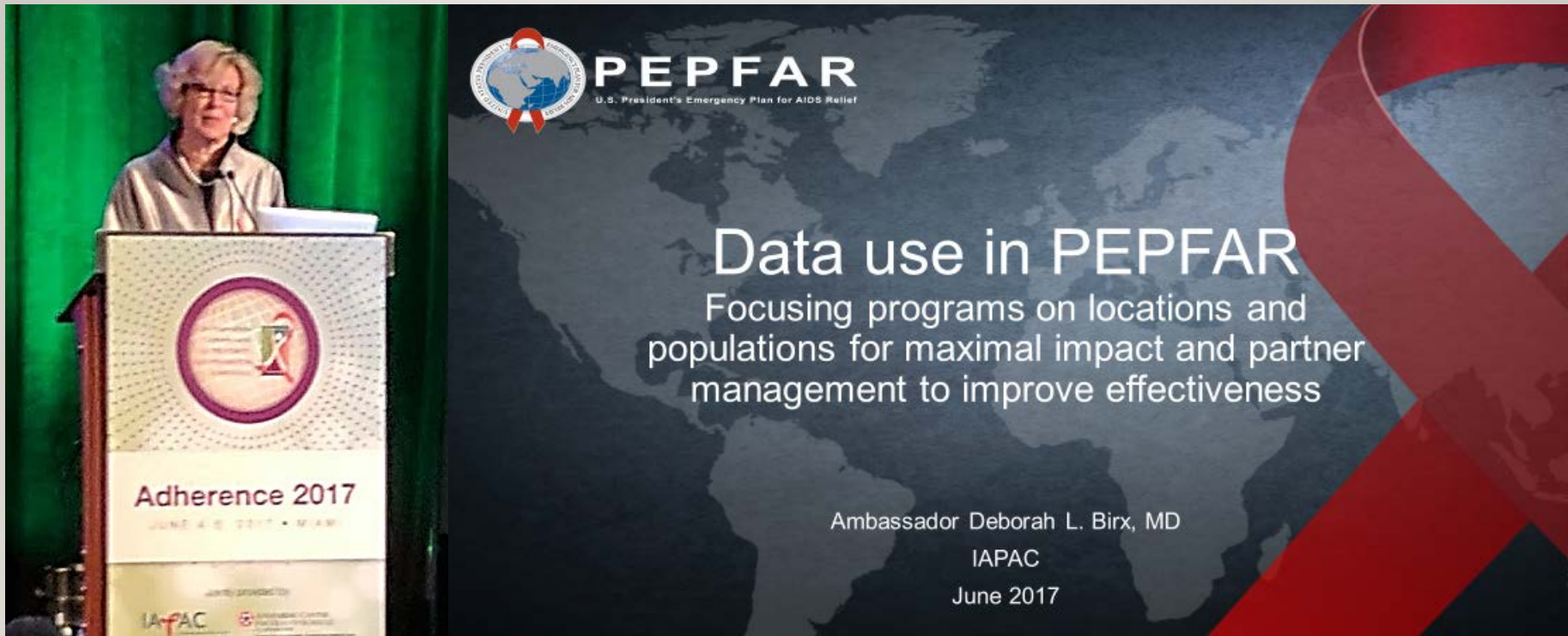
# LET DATA LIGHT THE WAY

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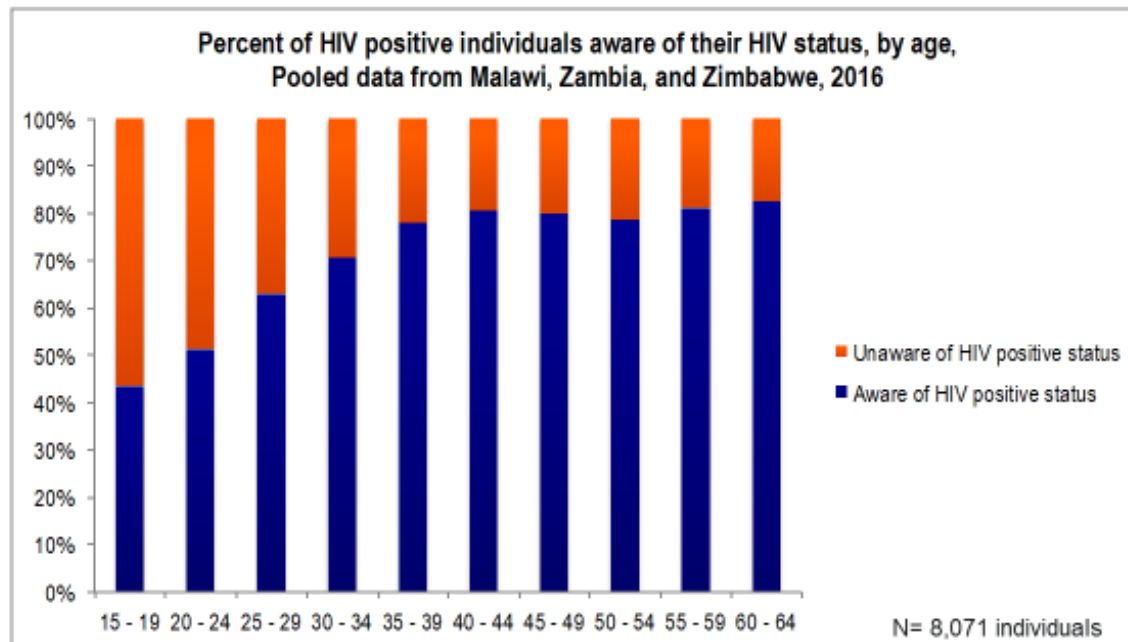
# AMBASSADOR BIRX: REITER/KAPLAN MEMORIAL LECTURE

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# AGE AND GENDER DISPARITIES IN THE CASCADE

Awareness of HIV positive status by age – those under 30 unaware they are HIV positive



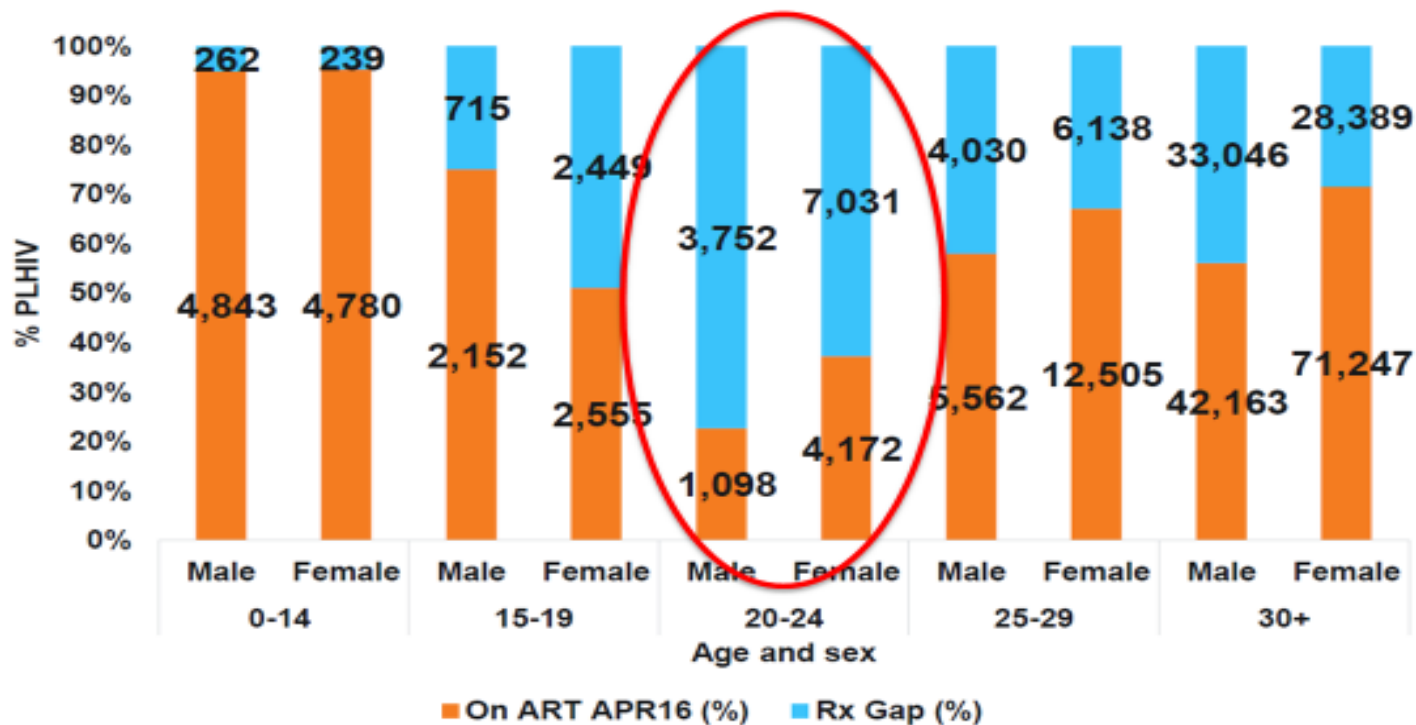
**PEPFAR**  
U.S. President's Emergency Plan for AIDS Relief

Prepared by ICAP on September 12, 2016 in response to request from OGAC Preliminary data, not cleaned, unweighted and subject to change

# AGE AND GENDER DISPARITIES IN THE CASCADE

## Namibia: National ART Gap by Age and Sex

Young men and women aren't on treatment



Source: PEPFAR Namibia & UNAIDS, 2017



# Geographic Variability in Time from HIV Diagnosis to Viral Suppression in Alabama

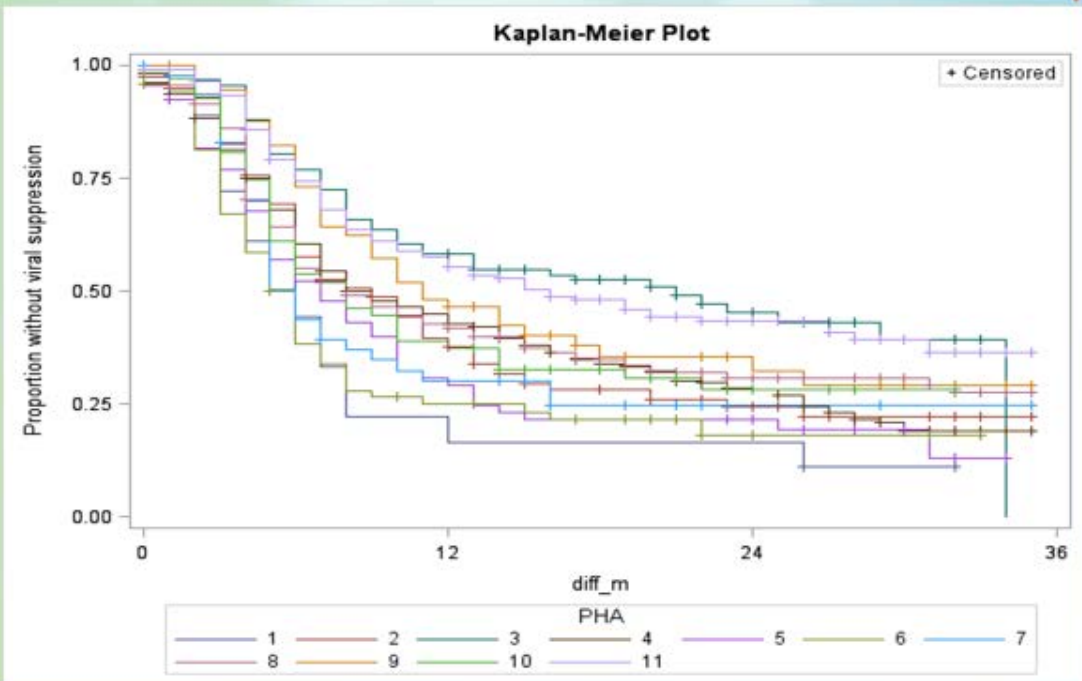
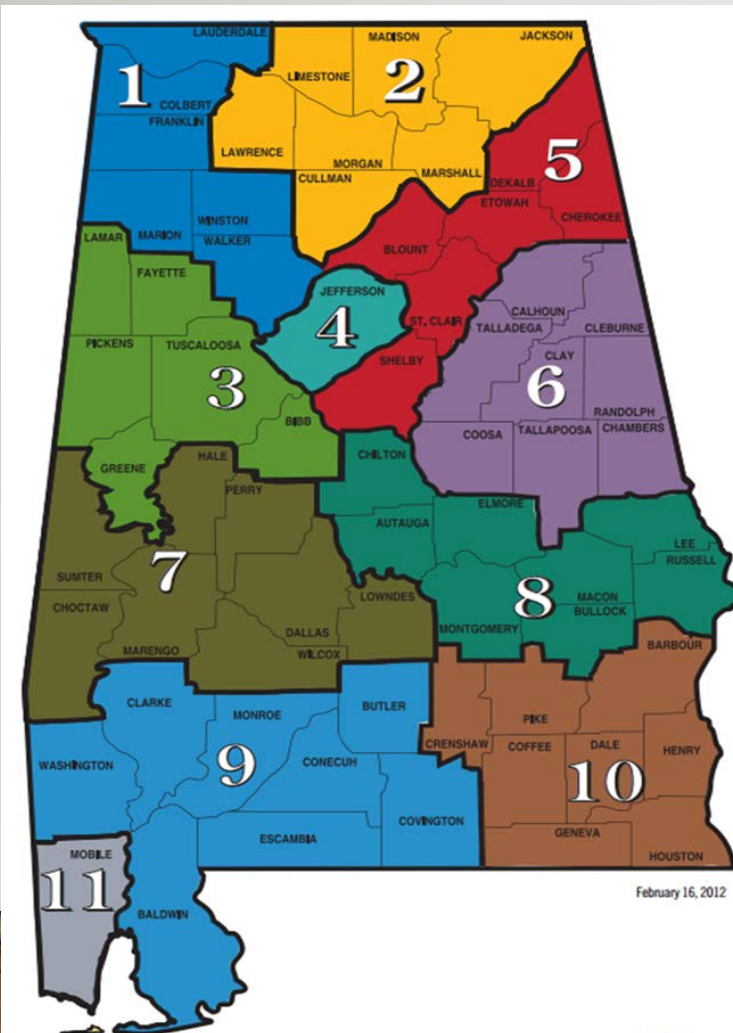
Richard P Rogers,<sup>1</sup> Tian Tang,<sup>2</sup> **D Scott Batey**,<sup>3</sup> Anthony Merriweather,<sup>1</sup>  
H Irene Hall,<sup>4</sup> Michael J Mugavero<sup>3</sup>

ORAL  
#185

#ADHERENCE2017



## Results



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# DEPARTMENT OF HEALTH RESOURCES FOR DATA

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GRETCHEN  
WEISS,  
NACCHO,  
PRE CON #1

Only 26% of all LHDs employ epidemiologists/statisticians, though this is higher among LHDs serving larger populations:

79% (250,000-499,999); 92% (500,000-999,999); 95% (1,000,000+)

Source: National Association of County and City Health Officials (NACCHO) 2016 National Profile of Local Health Departments



Only 18% of all LHDs employ information systems specialist, though LHDs serving larger populations are more likely to:

57% (250,000-499,999); 66% (500,000-999,999); 76% (1,000,000+)

Source: National Association of County and City Health Officials (NACCHO) 2016 National Profile of Local Health Departments





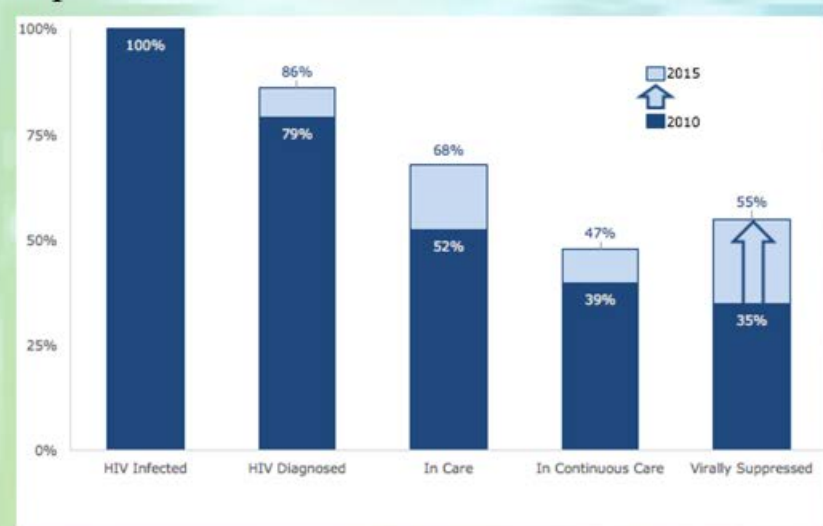


## Detroit Background

- City privatized most public health programs in 2012
  - Ryan White & HOPWA remained with the HD
- City declared bankruptcy in 2013
- Services began transitioning back to the HD in 2015
  - HIV prevention funding returned in October 2016



## Detroit Metro Area HIV Care Continuum, Improvements 2010-2015



**Lagging behind is  
not fatal, remaining  
there is.**



Mark Nelson MD,  
Plenary: Why are there still such large gaps in coverage in the test and treat era?

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# DIVERSIFYING REGIMENS

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# WHO OPTS FOR DAILY VERSUS ON-DEMAND PRE-EXPOSURE PROPHYLAXIS?

- Younger patients were more likely to receive daily PrEP, which may be explained by behaviour profiles in line with daily use, such as spontaneous sex with multiple partners
- Older patients may tend to engage in planned sex, making on-demand PrEP an appropriate option

Zoe Greenwald, Oral #227,  
Clinique médicale l'Actuel,  
Montréal, Québec, Canada

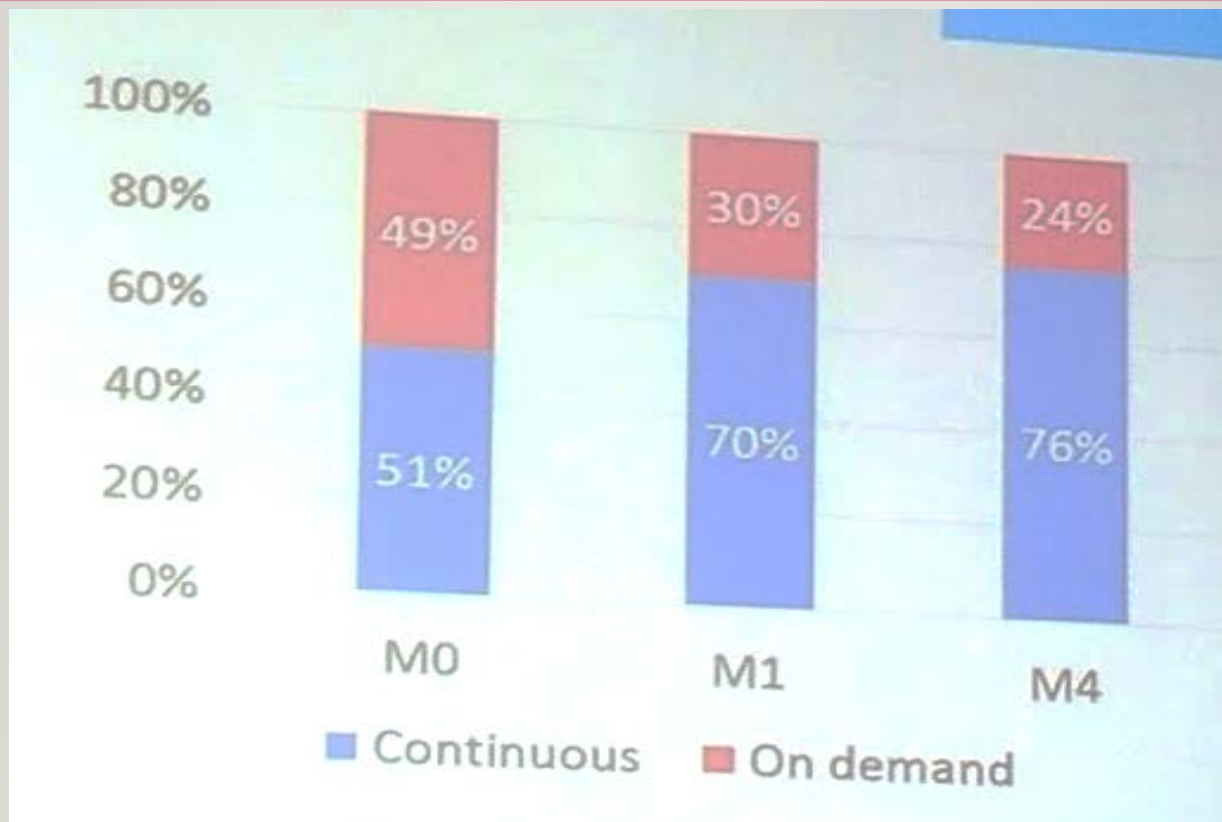
## Associations between baseline factors and decision for On-Demand PrEP

VARIABLES	Univariate Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Age	1.02***	(1.01 - 1.04)	1.02**	(1.00 - 1.04)
Total number of sex contacts in past 12 months (reg. + occasional)	0.987***	(0.978 - 0.996)	0.98***	(0.98 - 0.99)
Serodifferent partner	0.44**	(0.22 - 0.86)	0.41**	(0.19 - 0.88)
Education	Secondary or below	Ref.	Ref.	
	College	1.21	1.22	(0.66 - 2.26)
	University	1.44	1.38	(0.80 - 2.40)
Annual income	< \$20 000	Ref.	Ref.	
	\$ 20 001-35 0000	0.87	0.84	(0.42 - 1.65)
	\$ 35 001-55 000	1.18	1.17	(0.67 - 2.04)
	\$ 55 0001-75 000	1.17	1.05	(0.59 - 1.87)
	\$ 75 000+	1.72**	1.31	(0.75 - 2.27)

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1



# REGIMEN PREFERENCE EVOLVES





# PSYCHOSOCIAL MOTIVATIONS AND BARRIERS FOR LONG-ACTING PREP AMONG CURRENT PREP USERS

Figure 1. Percent Ranking each option as #1 choice

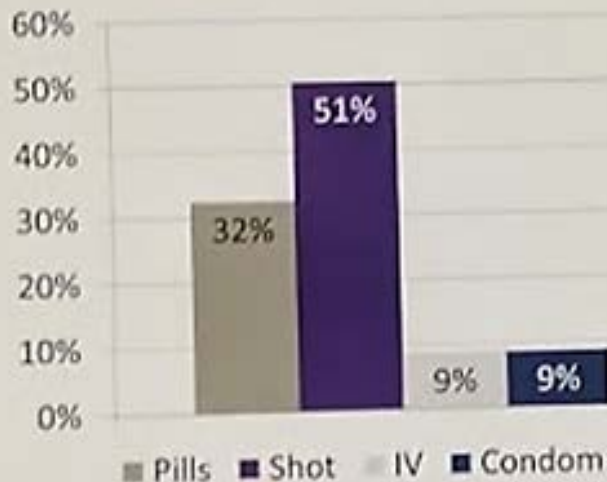


Figure 2. Motivators and Barriers associated with ranking LAI PrEP as #1 choice

## Motivators

### No Pill Burden

"I wouldn't need to take a pill every day" ( $p < .05$ )

### Early Adopter

"I'm the type of person who is always the first to try something new" ( $p < .01$ )

### PrEP Pride

"People are proud of PrEP users for taking PrEP" ( $p < .02$ )

### Risk Tolerance

"I'm the type of person who likes to take risks" ( $p < .05$ )

## Barriers

### Injection Concerns

"I would be worried about the pain during/after the shots" ( $p < .02$ )

### Clinic Access

"It would be difficult to return to the clinic to get shots" ( $p < .01$ )

### Lowered Sense of Control

"I would feel less in control of my HIV prevention because I'm not taking a pill every day" ( $p < .05$ )

### Reliability Concerns

"I would be worried that the shot would stop working in my body and I wouldn't know" ( $p < .02$ )

# TECHNOLOGIC INTERVENTIONS

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# ORAL #275

## *SMS Support Increases PrEP Retention and Adherence among Young MSM and Transgender Women in Chicago*

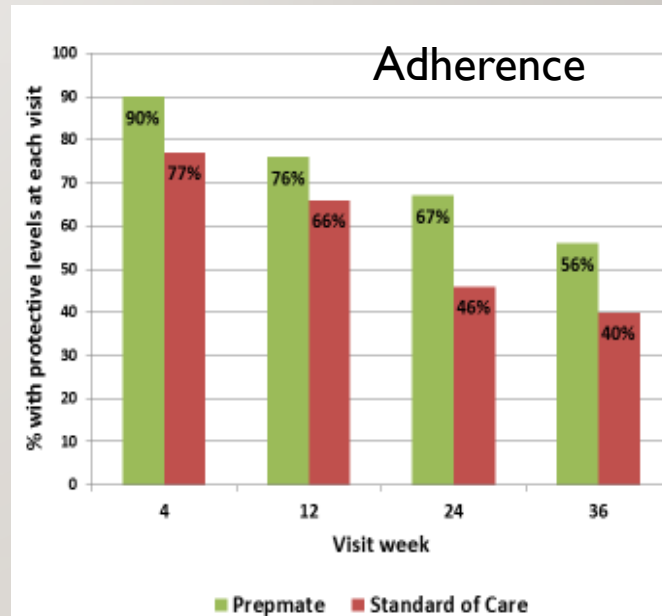
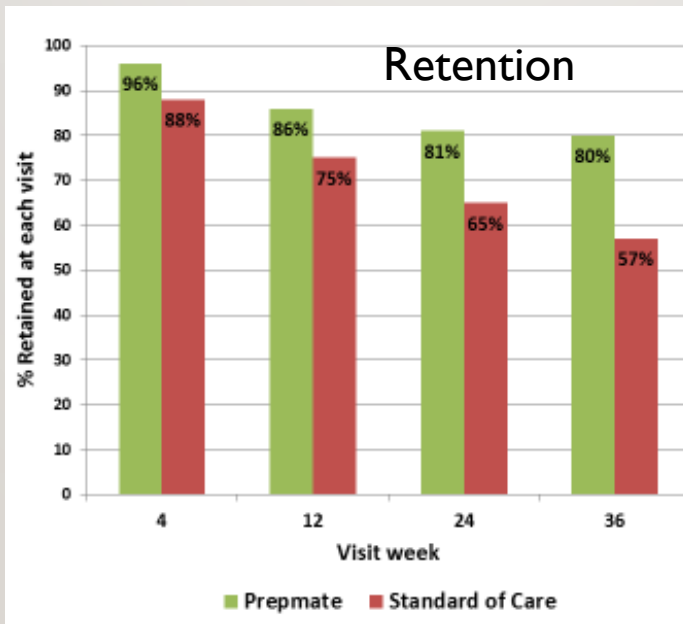
A Liu, E Vittinghoff, P von Felton, KR Amico, Peter Anderson, R Lester, E Andrew, Ixchell Estes, P Serrano, J Brothers, S Buchbinder, S Hosek, J Fuchs



How is PrEP going?

Ok

Not great.



**Adjusted  
OR\***

**2.73  
(95% CI 1.3-  
5.73)  
P=0.007**

**Adjusted  
OR\***

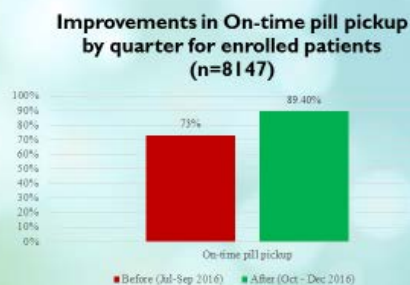
**2.06  
(95% CI  
1.07-3.99)  
P=0.03**

# SHORT MESSAGE SERVICE (SMS) REMINDERS IMPROVE PATIENT ON-TIME PILL PICK-UP OF THEIR ANTIRETROVIRAL MEDICINES IN NAMIBIA

SAMSON S. MWINGA

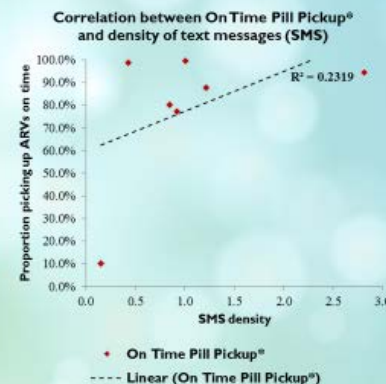
## Results ...

- By Dec 2016, on-time pill pickup had improved from 73% in the previous quarter to 89.4% for patients enrolled for the SMS reminder service




## Results ...

- Between Oct – Dec 2016 more than 9,000 text messages were sent out
- A strong correlation between patients picking up their ARVs on time and the density of SMS reminders was observed.



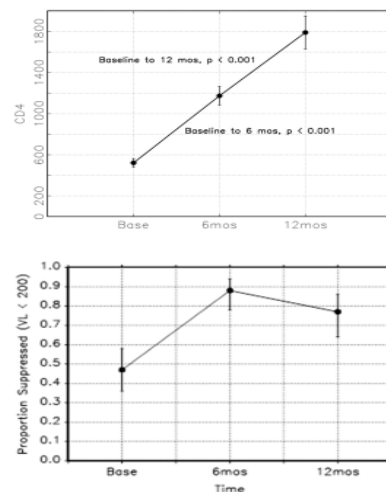
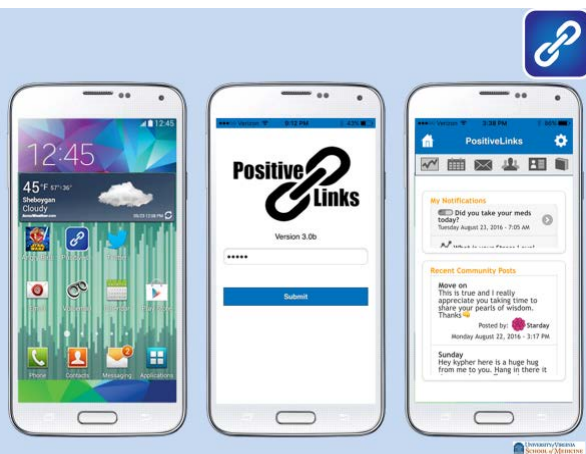


# “POSITIVE LINKS” MOBILE APP TO SUPPORT PEOPLE LIVING WITH HIV

 UNIVERSITY of VIRGINIA

**Design and Impact of  
*Positive Links*:  
A Mobile Platform to  
Support People Living with  
HIV in Virginia**

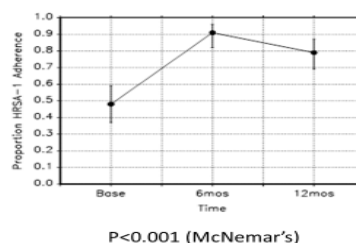
Rebecca Dillingham, MD/MPH  
Associate Professor of Medicine



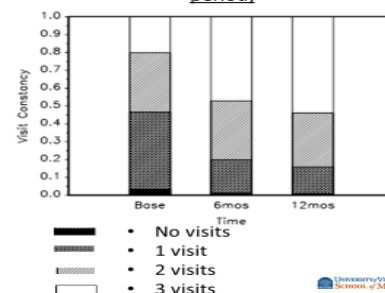
The Positive Links Program resulted in significant *increases* in CD4 count (top) and in HIV viral load suppression (bottom) over one year of follow-up. (n=56)

## Participation in PL Improved Engagement in Care

HRSA-1: % With at least 2 visits  
separated by 90 days within one year



Visit Constancy (per 4 month  
period)



WATCH THIS SPACE:  
<https://www.positivelinks4ric.com/>

#Adherence2017

# ORAL 276 EFFECTIVENESS OF A CELL PHONE COUNSELING INTERVENTION ON PMTCT RETENTION, ADHERENCE TO TREATMENT, AND UPTAKE OF EARLY INFANT DIAGNOSIS AND PREGNANCY RELATED SERVICES IN KISUMU, KENYA: A RANDOMIZED CONTROLLED STUDY

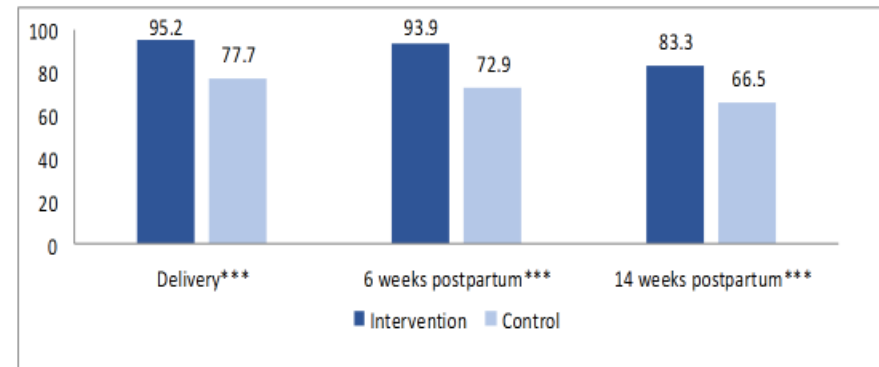


## The intervention improved retention in care

### Effectiveness of cellphone counseling on PMTCT retention and uptake of early infant diagnosis in Kisumu, Kenya

Avina Sarna, MD PhD; Jerry Okal, PhD,  
James Matheka, MA; Lopamudra Ray Saraswati, MSc Mphil;  
Nancy Reynolds, PhD; **Sam Kalibala, MD**

12th International Conference on HIV Treatment and  
Prevention Adherence  
4–6 June 2017  
Miami, Florida



Delivery: I: 197/207; C: 153/197; 6 weeks: I: 183/195; C: 153/188; 14 weeks: I: 160/192; C: 125/188

Still births and infant deaths have been excluded at 6 weeks (I: 9 still births and 3 infant deaths; C: 8 still births and 1 infant death) and 14 weeks (I: 2 infant deaths and 1 maternal death) postpartum.

\*\*\*  $p < 0.001$

# #220 EFFECTS OF A REAL-TIME REMINDER INTERVENTION ON RETENTION IN HIV TREATMENT AMONG PREGNANT AND POSTPARTUM WOMEN IN A LOW-RESOURCE SETTING: THE UGANDA WISEMAMA STUDY

## What happened in intervention arm?

1. SMS reminder to cell phone if WPC unopened within 1 hour of dose time
  - Subjects chose one of 10 possible reminders; examples:
    - *Time for prayers*
    - *Hello, it's time*
    - *Don't forget to watch the news*
2. WPC-generated data used in counseling sessions
  - At monthly clinic visits, WPC report given to subject
  - Subjects <95% adherence in previous month given counseling using report

## What happened in comparison arm?

- No reminder messages
- WPC report NOT shared with subject

## Why no improvement in retention?

Real-time feedback did not address structural and interpersonal barriers

- Quantitative analysis of retention barriers found two significant positive factors on retention:
  - Disclosure: having disclosed HIV status to partner increased attendance at scheduled visits by 8.6% overall and by 18.6% in the postpartum period
  - Education: women with secondary education or higher completed 13.3% more visits overall and 22.7% in postpartum period
- Qualitative analysis of post-intervention focus group discussions found more issues, suggests reasons for post-delivery decline:
  - Travel to hospital clinics: expensive, time-consuming, burdensome due to child-caring responsibilities
  - Motivation to stay on ART high during pregnancy: women wanted to avoid HIV transmission to child; became busier after delivery

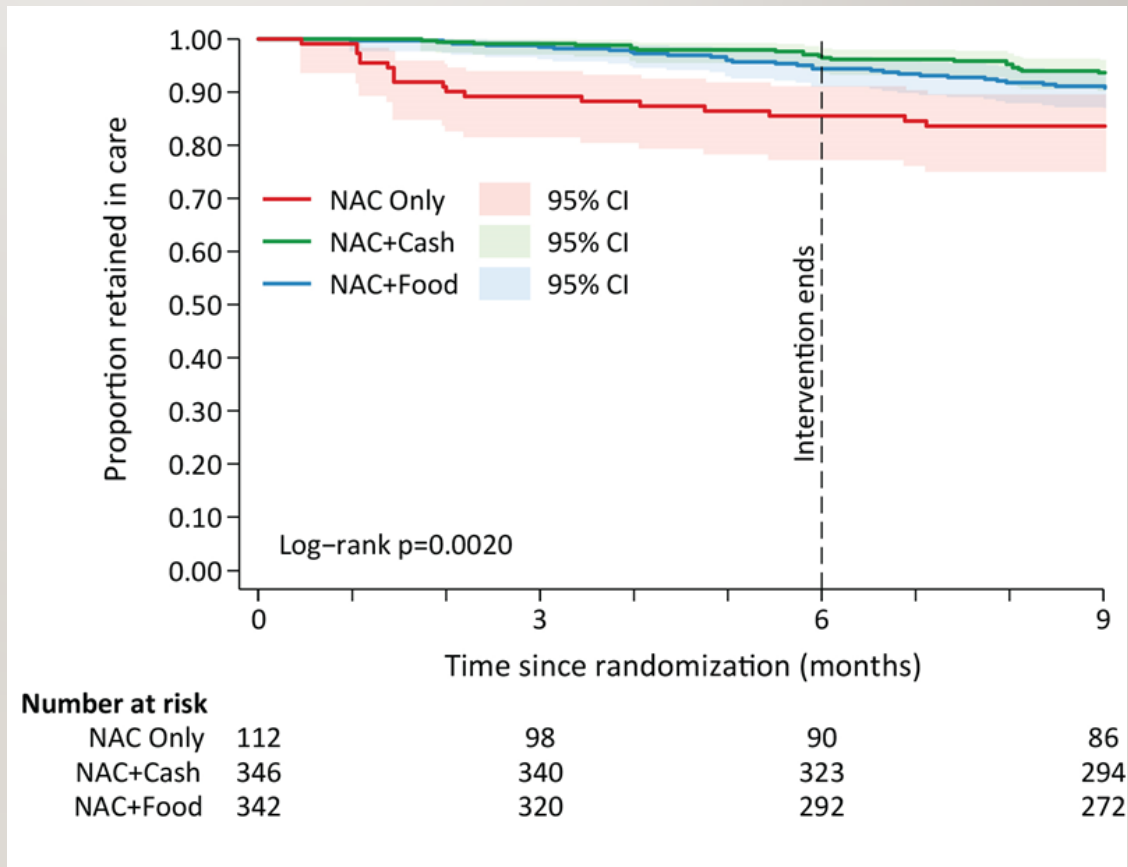
**CHANGE CARE  
NOT JUST PEOPLE**

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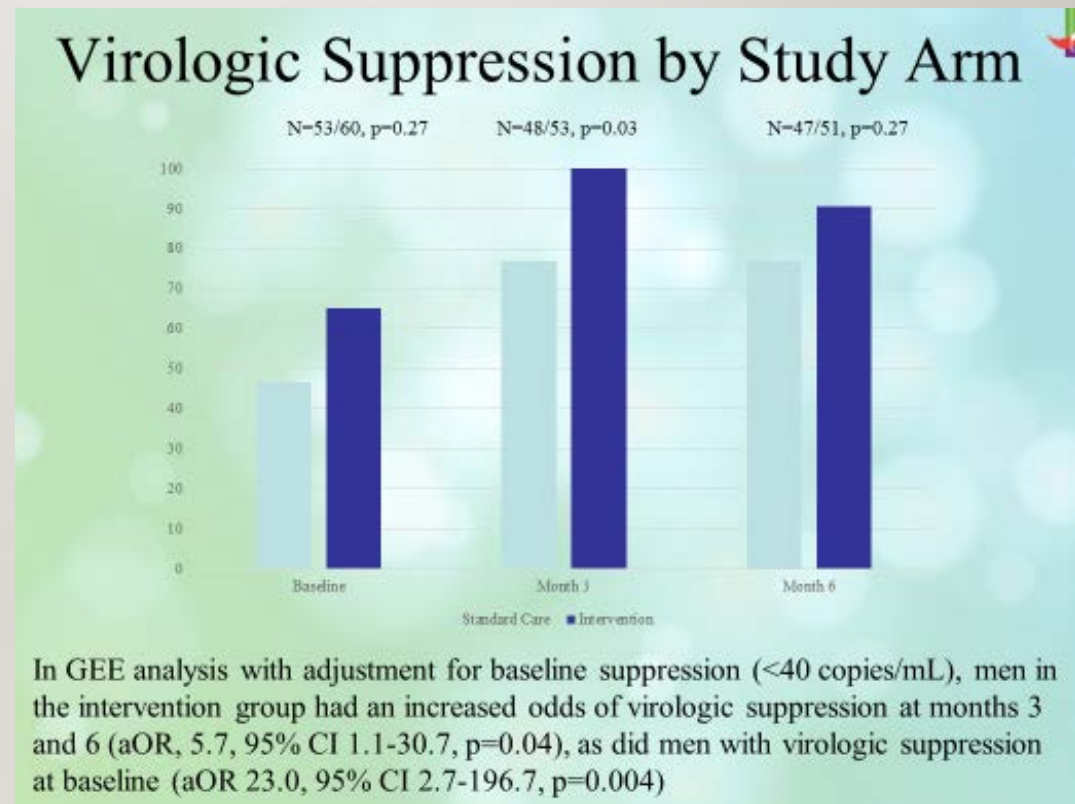
# SANDI MCCOY, ORAL #278: CONDITIONAL INCENTIVES

- Oral 278 (McCoy):  
Conditional cash incentives or  
food supplementation  
(contingent on visit  
attendance) improved MPR  
and reduces LTFU



# SUSAN GRAHAM, ORAL #306: THE SHIKAMANA INTERVENTION TO SUPPORT ART ADHERENCE AND CARE ENGAGEMENT FOR KENYAN MSM

- MSM in Kenya
- Substantial stigma/discrimination
- Multicomponent intervention:
  - MSM sensitivity training for medical providers
  - Modified Next Step adherence counseling
  - Peer Support (Washikaji)
  - Mental health screening and support (peer/provider)



- Culturally competent care for transgender individuals (Arianna Lint, Sunday Discussion Panel)
- 



# Same-Day Antiretroviral Therapy Initiation

## How Do We Get There?

## Should We Go There?

Thomas P. Giordano, MD, MPH  
Baylor College of Medicine  
IQuEST, DeBakey VA Medical Center  
Houston, TX



## Evidence summary

- 3 large randomized studies in different contexts with fairly consistent results: more suppression, same or better retention in care, same or better survival
  - Pre-ART care can be dramatically simplified
  - Even easier if CD4 count not needed
- Long-term safety and outcomes are not known
  - Concern about the strategy with NNRTI-based ART
- Promising but very limited data in high resource countries
- Emerging data for starting ART outside the HIV treatment clinic (Glass, abstract 201, Lesotho)

Tom Giordano Plenary  
#Adherence2017

T. P. Giordano

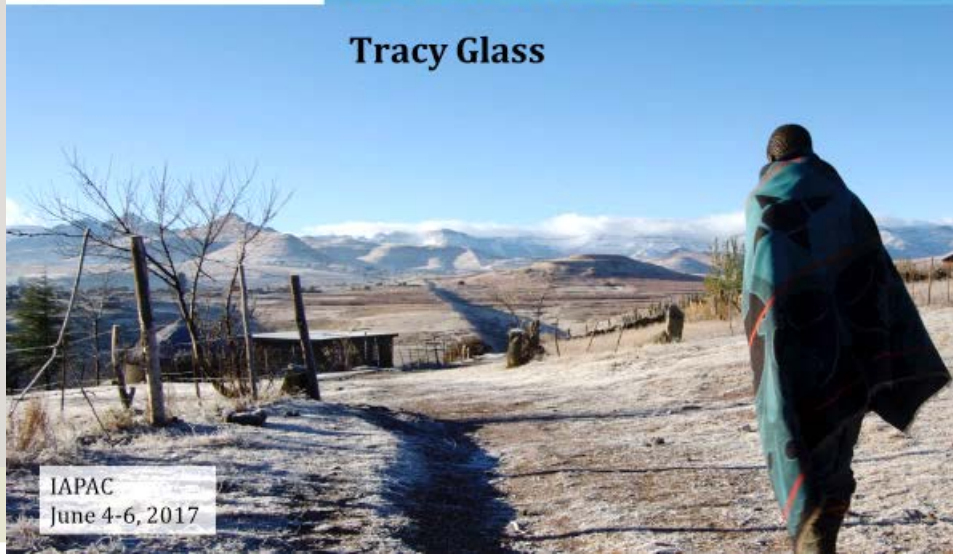






# Same-day home-based ART start in Lesotho: lessons from the field

Tracy Glass



IAPAC  
June 4-6, 2017

ORAL  
#201

## Acceptability

### Readiness to start ART

- 137 (100%) said they understood implications of life-long ART
- 134 (98%) ready to start ART that day
- 2 (1.5%) in the next few days
- 1 (0.5%) did not want to start

### ART

- 136 provided with 1-month supply ART
  - TDF/3TC/EFV (n=135) and AZT/3TC/EFV (n=1)
- 58 (43%) given cotramoxizole

### Linkage to care

- 6-months: 72%
- Time to linkage: median 15 days (IQR: 14-27)

14% presented at clinic >30 days after home visit

→ late start, inconsistent ART use, drug holidays

At first clinic visit, there were no reported side effects or ART regimen changes

Older individuals and those with a partner who knew their HIV status were more likely to link to care



### An Internet Start-up Makes PrEP Easier:

1. Online history,
2. trip to a local lab,
3. PrEP delivered to home,
4. phone, email or SMS support throughout.



# UNMET CHALLENGES

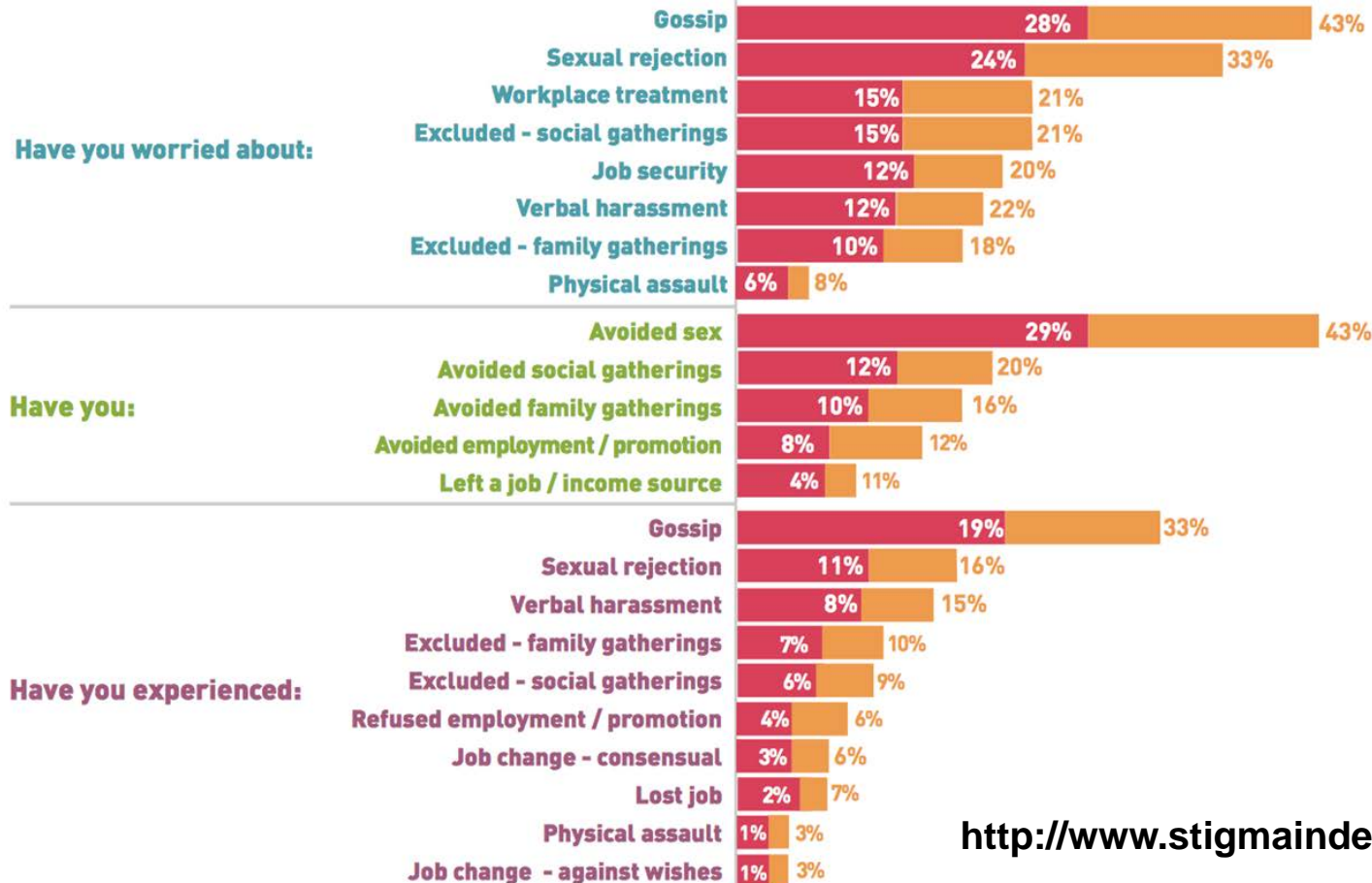
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# STIGMA AND DISCRIMINATION

Worry, avoidance and discrimination in the last 12 months

● % of all who report experience due to HIV ● % of all who answered yes



<http://www.stigmaindexuk.org>



# Association between Discrimination in Healthcare Settings and HIV Medication Adherence: Mediating Psychosocial Mechanisms

ORAL  
#158

Bulent Turan, Anna Joy Rogers, Whitney S. Rice, Ghislaine C. Atkins, Mardge H. Cohen, Tracey E. Wilson, Adaora A. Adimora, Daniel Merenstein, Adebola Adedimeji, Eryka L. Wentz, Igbo Ofotokun, Lisa Metsch, Phyllis C. Tien, Mallory O. Johnson, Janet M. Turan, Sheri D. Weiser



- Perceived discrimination in healthcare settings is associated with sub-optimal ART adherence
- Association mediated in a serial fashion by internalized stigma and by depressive symptoms, as hypothesized

# YOUNG PEOPLE

## Gaps that need to be addressed

**Geography** – vast difference in HIV prevalence within each country; investments must continue to be targeted for impact

**Populations** – significant age gap in those we have reached and not reached impacting epidemic control: we have successfully reached women > 25 and men > 35

**Epidemic continues unchecked in men <35 and women < 25** : focused prevention and treatment interventions must continue

**Testing without linking is a program failure**



# PREP DISPARITIES

Health

## PrEP Awareness, Interest, and Use Among Women of Color in New York City, 2016

Anisha Gandhi<sup>1,2</sup>, Emily Appel<sup>1</sup>, Kathleen Scanlin<sup>1</sup>, Julie Myers<sup>1,4</sup>, Zoe Edelstein<sup>1</sup>

<sup>1</sup>New York City Department of Health and Mental Hygiene, Queens, NY

<sup>2</sup>Department of Sociomedical Sciences, Columbia University Mailman School of Public Health, New York, NY

<sup>4</sup>Division of Infectious Diseases, Department of Medicine, Columbia University College of Physicians and Surgeons, New York, NY

Abstract #378

Contact: Anisha Gandhi  
agandhi@health.nyc.gov  
347-396-7780

- Only one in four Black or Hispanic/Latina women in high-diagnosis NYC neighborhoods were aware of PrEP.
- In multivariable analysis, only income was significantly associated with PrEP awareness.
- In spite of 13% of respondents having indications for PrEP based on recent sexual behavior and partner characteristics, almost none had used it.
- Among those aware of PrEP, 19% reported interest in use.



# ADVANCING PREP USE



**Distrust**



**Uncertainty**



**Alignment**



**Mutuality**

## Different Questions About PrEP

*Why are you  
still talking?*

*What is  
PrEP?*

*How can I  
use PrEP?*

*How do we  
get more?*

## Different Goals for the Care Team

*Build Trust  
For  
Disclosure*

*Support  
Exploration  
With  
Information*

*Problem  
solving; SMS;  
Build Skills;  
long acting  
agents.*

*Let  
Her  
Lead*

*Adapted from Amico, Mutuality Model, AIDS and Behavior. 2017*





# IN CONCLUSION

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#Adherence2017

1st Conference on HIV Treatment and Prevention Adherence  
June 8 through Tuesday, June 12, 2017

1st  
Conference on HIV Treatment and Prevention  
June 8-12, 2017, in Miami, Florida, USA,  
sponsored by the International Association of  
Pharmacists (IAP) and the International Society for  
Drug Adherence (ISDA). The conference is co-chaired  
by Dr. Robert C. Bozzette, CT, IDA and Michael J. Muganyizi,  
MD, IDA, Birmingham, Birmingham, AL.

2nd  
The conference is an annual forum for the presentation and  
discussion of the latest research and clinical  
experience, as well as current adherence and  
adherence research, with the focus on achieving the  
best and greatest benefit of antiretroviral therapy  
and HIV.

3rd  
The conference participants will be able to  
attend and participate in various sessions, such as



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