Where science meets community ™

Scaling up HIV Testing and PrEP Implementation Using Technology

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BridgeHIV™

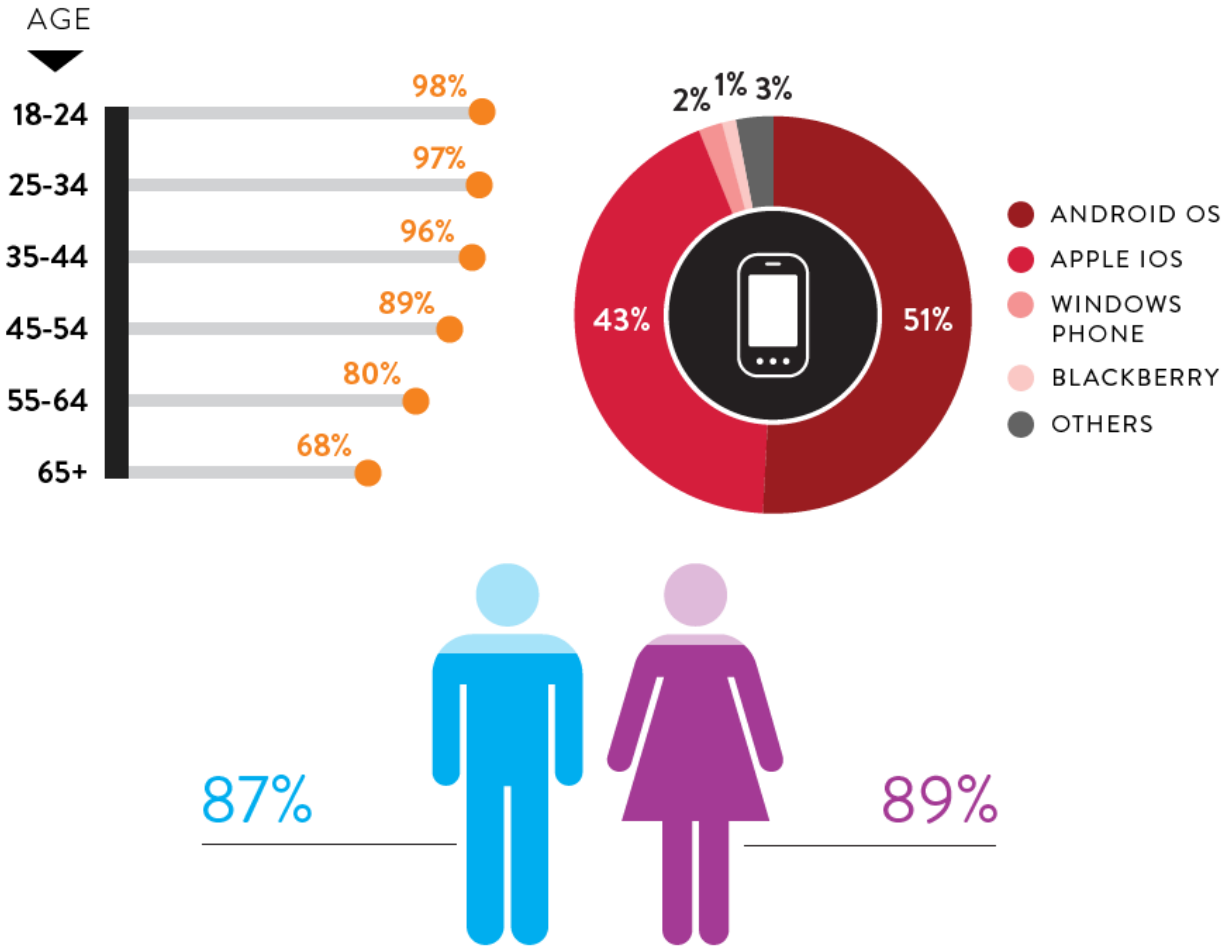
Background

- Young MSM (YMSM) are among the highest at-risk for HIV in the US[1,2]
  - YMSM of color disproportionately affected by HIV
- HIV testing is critical for timely treatment and linkage to prevention
  - Approximately half of YMSM tested in the past year[3]
  - 1/3 never tested in their lifetime[3]
- PrEP has demonstrated efficacy in clinical trials,[4,5,6] however PrEP uptake and adherence has been low among YMSM[7,8]
  - Only 11% of men initiating PrEP between 2012-2016 were under age 25
- Technology can be leveraged to support HIV testing and PrEP uptake, adherence, and engagement in young MSM
  - **Prepmate SMS intervention** *to support PrEP retention & adherence*
  - **LYNX app** *to increase HIV testing & PrEP uptake*
  - **DOT Diary app** *to support PrEP monitoring & adherence*

[1]CDC HIV Surveillance Report 2014; [2]Baral Lancet ID 2013; [3]Sanchez JMIR 2015; [4]Grant NEJM 2010; [5]Baeter [6]Thigpen NEJM 2012; [7]Hosek JAIDS 2017; [8]Hosek AIDS 2016

US SMARTPHONE MARKET SHARE BY AGE, OPERATING SYSTEM AND GENDER, Q3 2016

SMARTPHONE OWNERSHIP



Read as: During Q3 2016 51% of smartphone owners used a handset that runs on the Android operating system.
Source: Nielsen Mobile Insights

Prepmate

Home Starting PrEP Videos FB Style Feed Forum Example content page

Welcome to Prepmate!

Here's some info to help with getting started.

We know starting PrEP can be exciting and overwhelming, and we're here to help you out in any way we can. Here's how we've got your back:

Real people, real support.

Anytime you need a question answered, some help with PrEP, or just someone to talk to, text us. We'll get back to you as soon as we can, and always within 24 hrs.

Reminders that don't suck.

We'll send reminders (disguised as pretty funny texts) for about 2 weeks to get you started. If you want more, just text to let us know, but we don't want to be annoying.

People like you.

We've got a little social network thing going on so you can talk to other PrEP users. You can find it under the menu at the top right.

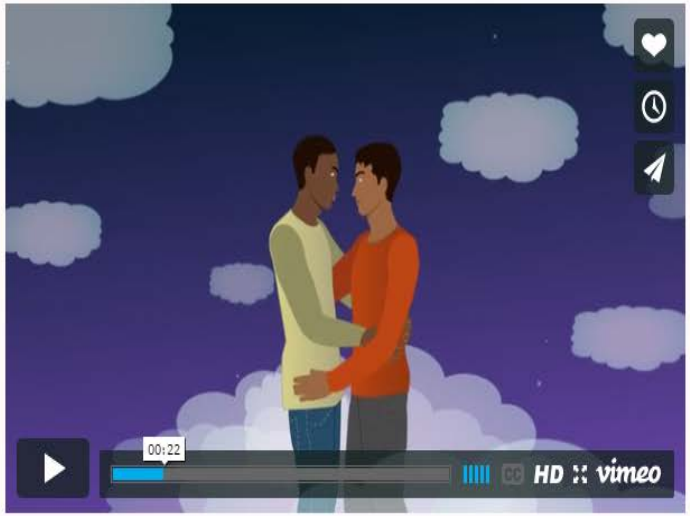
How is PrEP going?

Ok

Not great.

Approach Adapted from Lester Lancet 2010

Here are some stories from people who have taken PrEP. It's great to hear about some of the experiences other's have had. Maybe you can relate! Check 'em out! Come back to see new videos every few weeks!



EPIC RCT

- Impact of Prepmate on PrEP retention & adherence was evaluated in a PrEP implementation study within Chicago's safety-net system
- YMSM aged 18-29 enrolled in EPIC and provided 9 months of free TDF/FTC PrEP
- PrEP visits at Chicago CORE PrEP clinic – visits/labs covered by insurance or out of pocket
- Participants randomized 2:1 to receive Prepmate + standard of care (SOC) vs. SOC alone (risk assessment, PrEP education, and brief adherence counseling by health

Chicago CORE Center PrEP Clinic

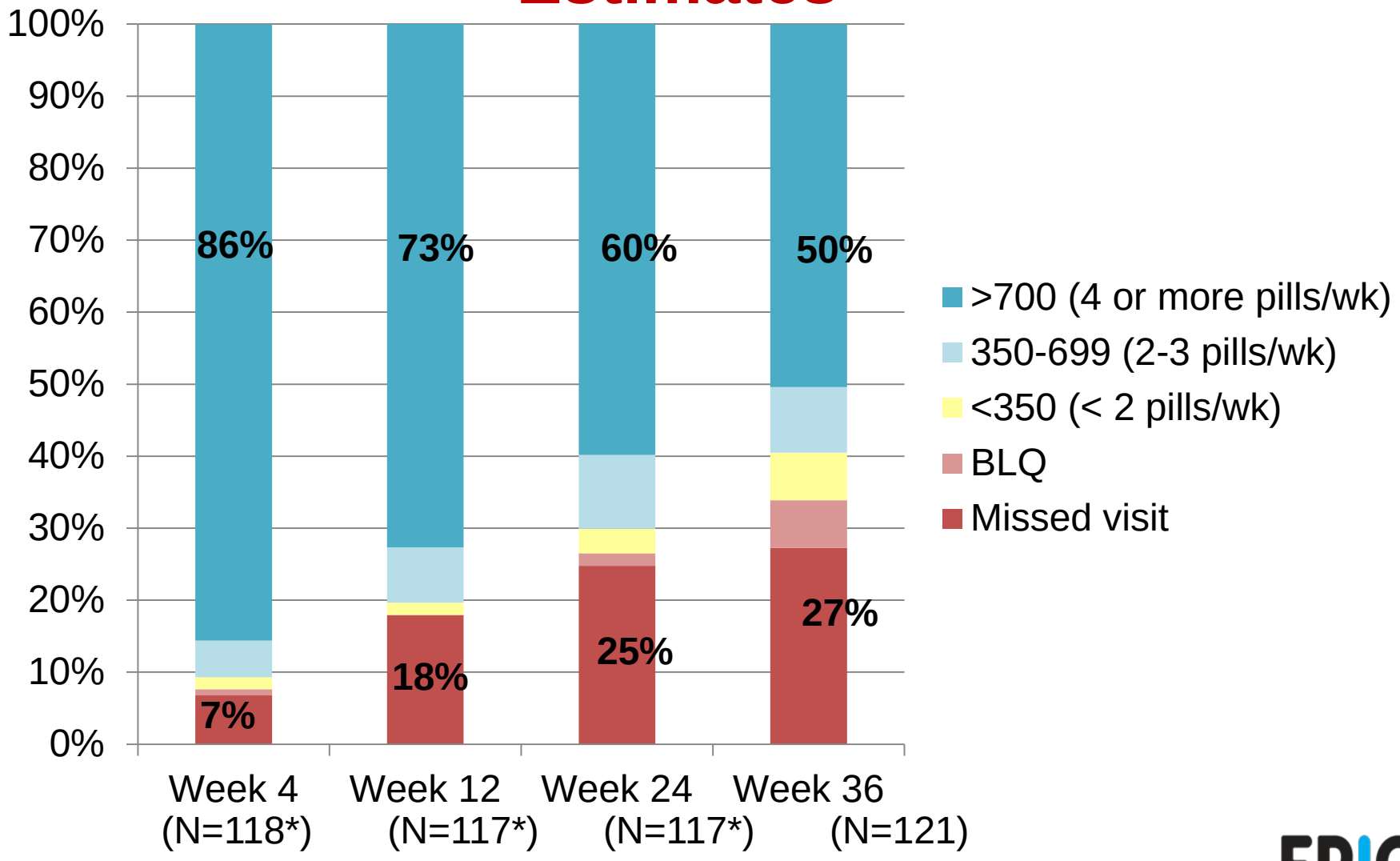
EPIC

Enhancing PrEP in Community

Baseline characteristics of enrolled participants (N=121)

Characteristic	Prepmate N=81	SOC N=40	P value
Mean age	24.2	24.4	0.71
Race/ethnicity			
Black	27%	30%	0.32
Latino	41%	28%	
White	24%	28%	
Asian	4%	13%	
Other	5%	3%	
Gender: Male	96%	93%	0.40
Transgender/Genderqueer	4%	7%	
Education: Some college or higher	78%	70%	0.38
Income: <$20,000	61%	56%	0.68
Has health insurance	78%	80%	0.82
Has primary care provider	45%	53%	0.45
Depressive symptoms (PHQ-2)	22%	40%	0.02
Any recreational drug use	63%	67%	0.69
Mean # anal sex partners, past 3 months	7.7	4.7	0.45
Condomless receptive anal sex, past 3 mo	51%	39%	0.32
STI (GC, CT, and/or syphilis - lab confirmed)	19%	25%	0.48

Overall Retention/Adherence: TFV-DP (fmol/punch) via DBS w/ Dosing Estimates

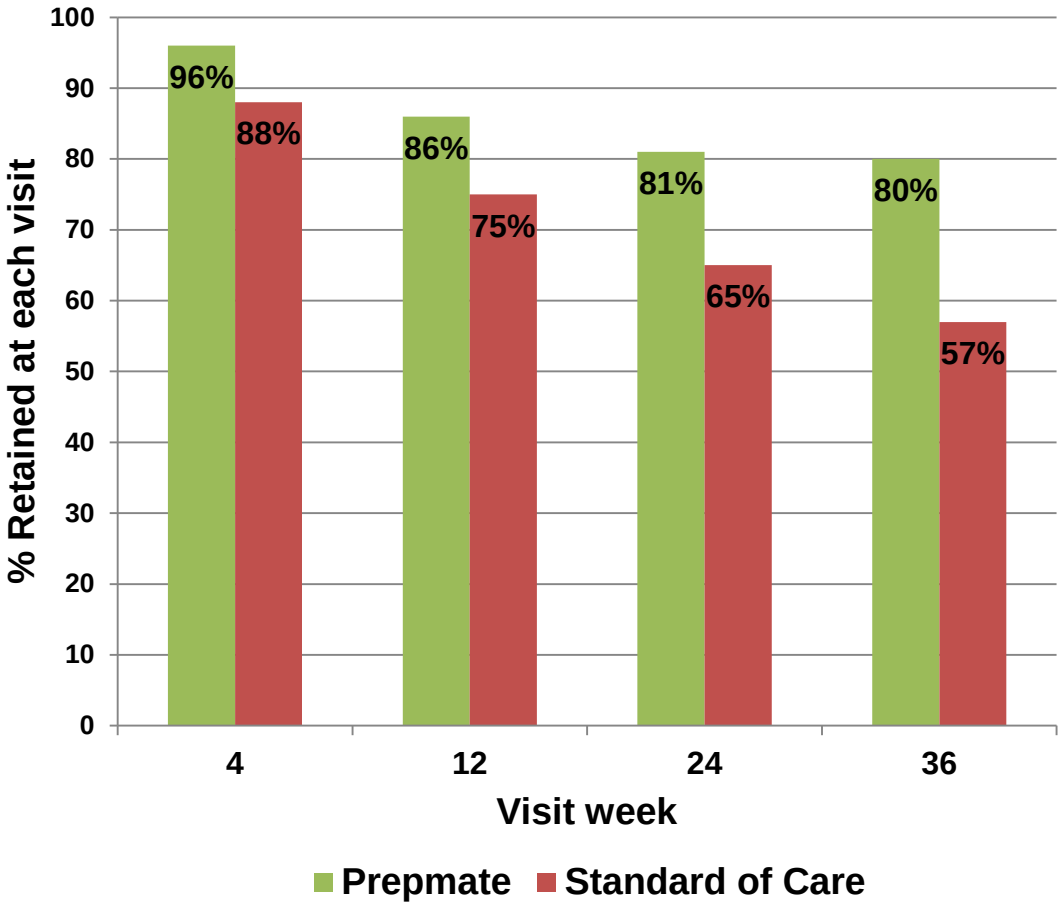


*Ppts seen but DBS not collected for 3-4 ppts

EPIC
Enhancing PrEP in Community

Visit retention, by intervention arm

Impact of Prepmate on Visit Retention		
	Prepmate	SOC
% visits retained	86%	71%
Odds ratio (OR) for retention (Prepmate vs. SOC)	2.62 (95% CI 1.24-5.54) P=0.01	
Adjusted OR*	2.73 (95% CI 1.3-5.73) P=0.007	

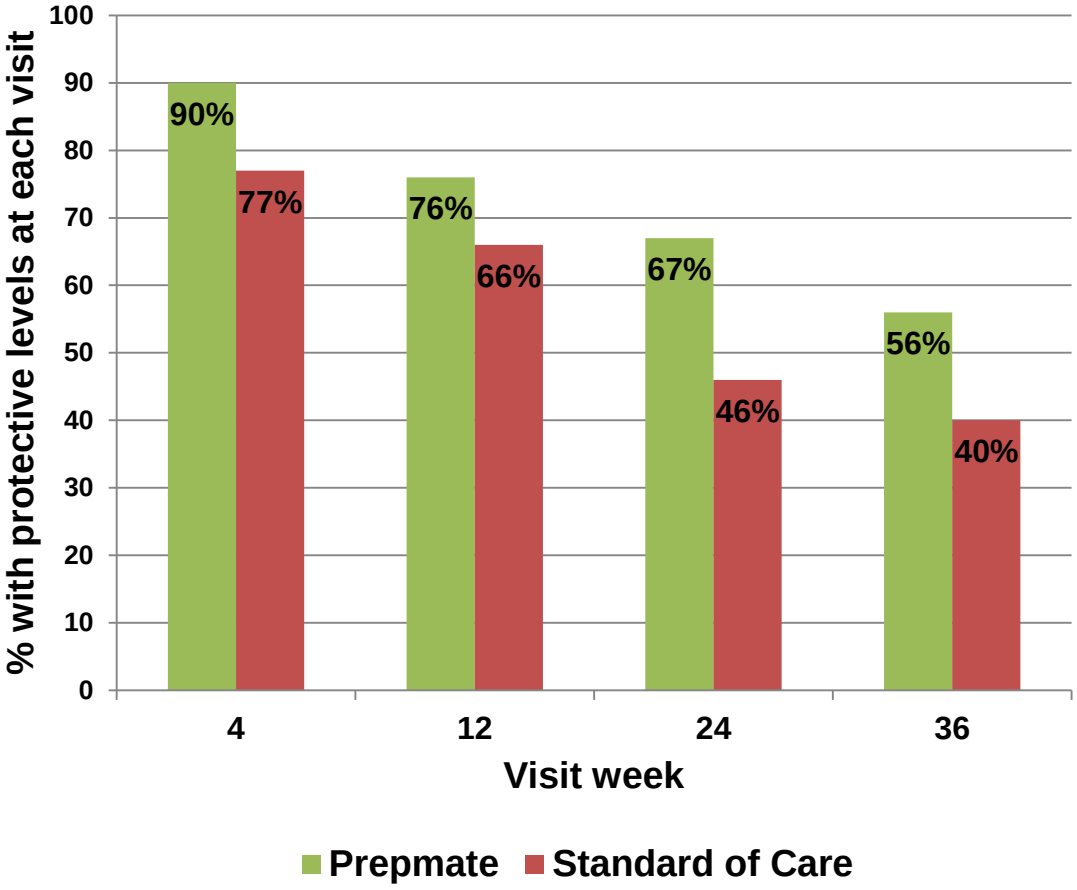


*Adjusted for depressive symptoms at baseline (p<0.05)

EPIC
Enhancing PrEP in Community

Adherence, by intervention arm

Impact of Prepmate on Adherence		
	Prepmate	SOC
% with protective TFV-DP levels	72%	57%
Odds ratio (OR) for Adherence (Prepmate vs.SOC)	2.05 (95% CI 1.06-3.94) P=0.03	
Adjusted OR*	2.06 (95% CI 1.07-3.99) P=0.03	



Prepmate efficacy did not differ significantly by age, race/ethnicity, education, or insurance

*Adjusted for depressive symptoms at baseline (p<0.05)

EPIC
Enhancing PrEP in Community

High Acceptability of Prepmate

	Week 12	Week 36
Prepmate was very/somewhat helpful	89%	88%
Wanted to continue using Prepmate after study	86%	83%
Would recommend Prepmate to others	95%	92%
Prepmate provided a service you wanted	94%	92%
Prepmate met most/all PrEP support needs	94%	93%
Mostly/very satisfied with Prepmate	95%	95%
Prepmate helped deal with your problems	89%	85%
Worried others would see Prepmate messages	5%	3%
Had problem messages		7%

No social harms reported related to use of Prepmate

EPIC
Enhancing PrEP in Community

Did weekly check-ins help in any other way?

"*The sense of having a somewhat total stranger watching out for another person was great to have. Jenn was that total stranger to me, and her and I have developed a pseudo friendship thorugh Prepmate. Her weekly check-ins gave me a sense of community/comraderie that can sometimes be lost in this day and age…*"

EPIC
Enhancing PrEP in Community

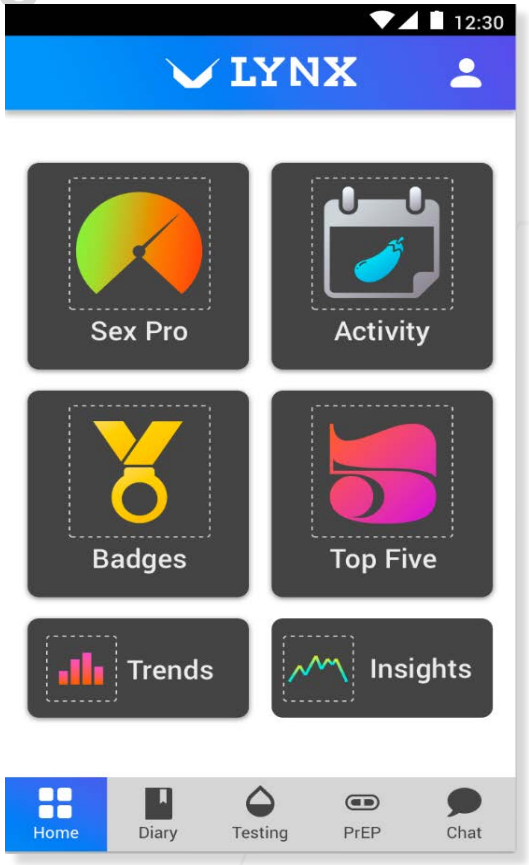
LYNX

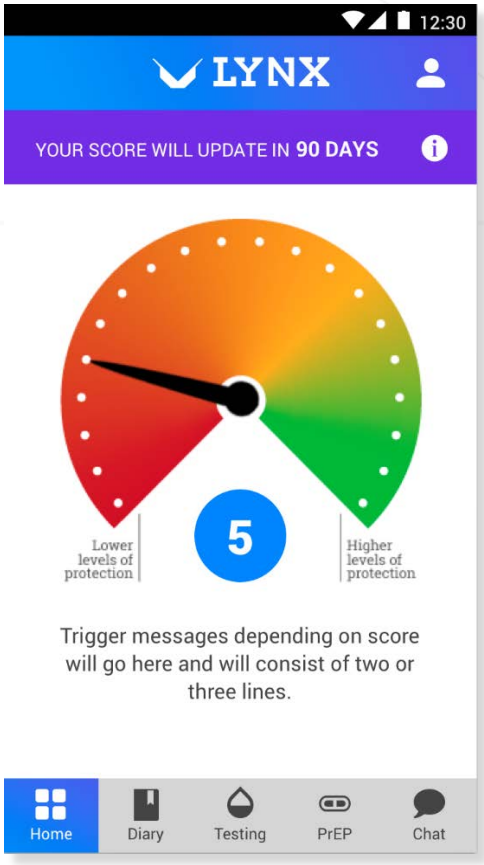
ITECH

THE
UNC/EMORY CENTER
FOR INNOVATIVE TECHNOLOGY

HIV Testing & PrEP Uptake

Novel mobile app designed to increase HIV/STI testing and support PrEP uptake among YMSM aged 15-24. Informed by the Information, Motivation, and Behavioral skills (IMB) model.





LYNX

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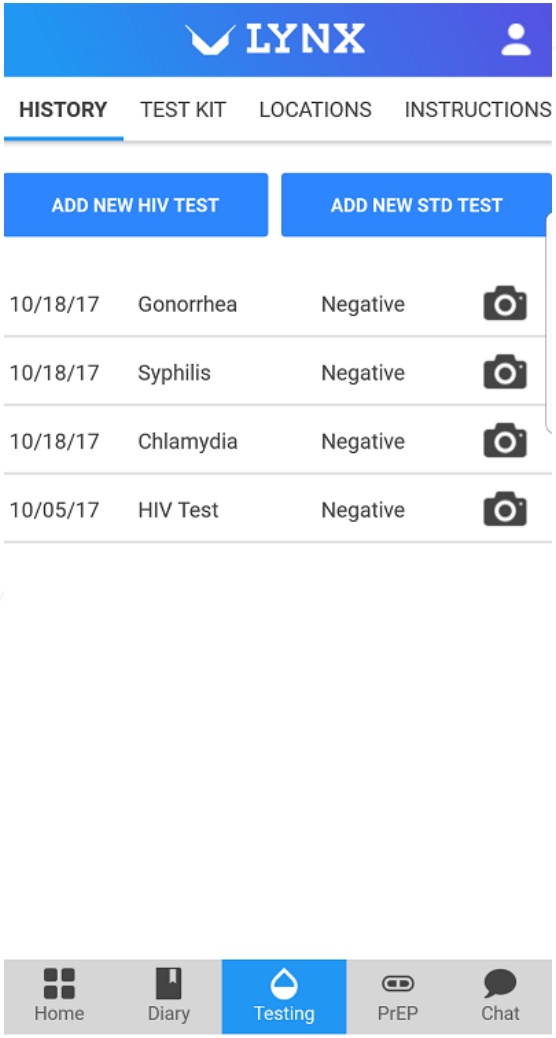
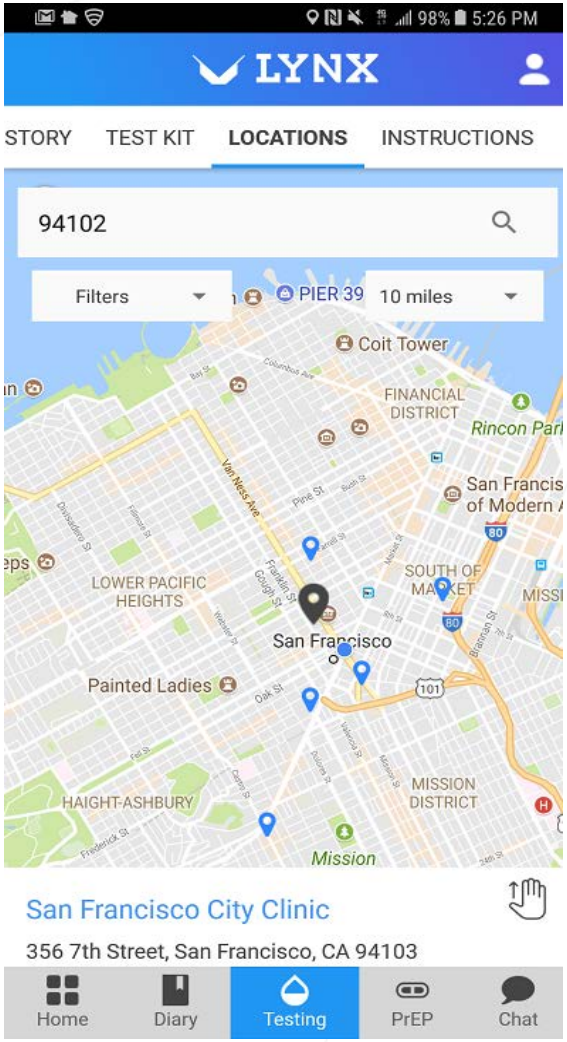
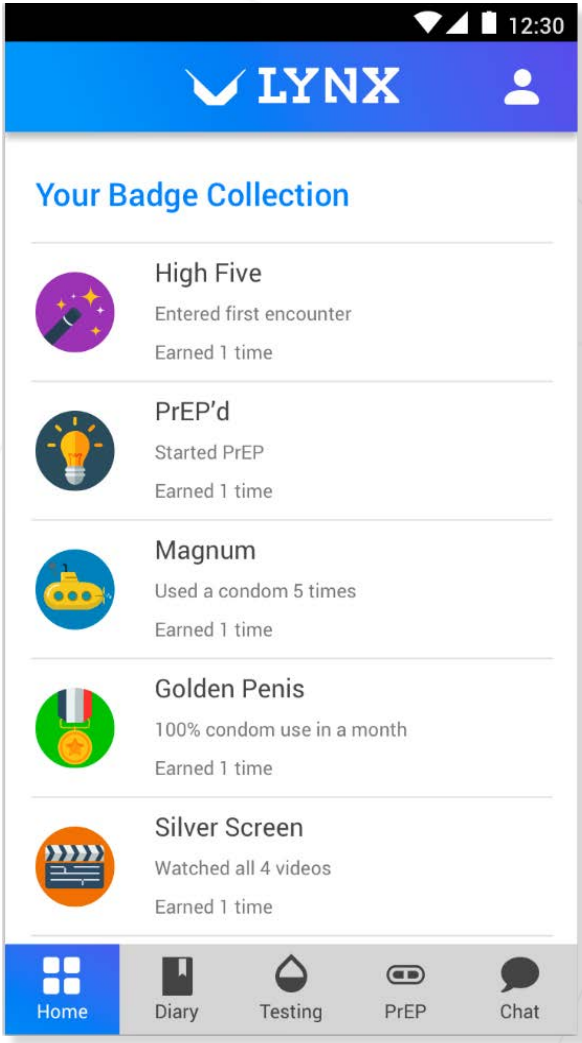






ITECH

Study Schema

Qualitative, Formative work

LYNX app refined through an iterative design process informed by focus groups in up to 20 YMSM (3-6 months)

Technical Pilot

2 month technical pilot of LYNX app in up to 15 YMSM

Pilot RCT

6 month pilot RCT in 60 YMSM
- Ppts randomized 2:1 to LYNX (N=40) or standard of care (N=20)
- Online f/u at 3 and 6 mo

DOT Diary

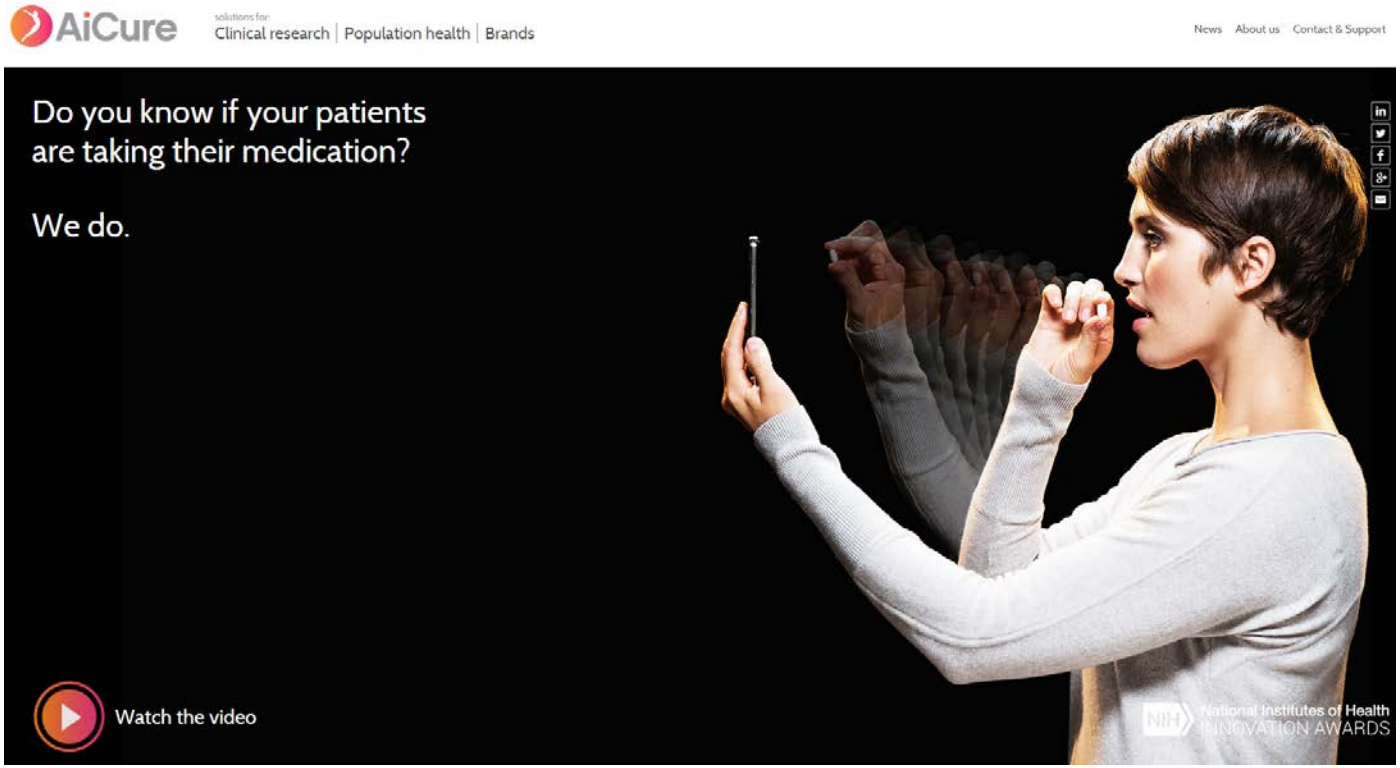
- **Accurate measurement of adherence is critical in PrEP implementation studies, yet currently available methods have many limitations**

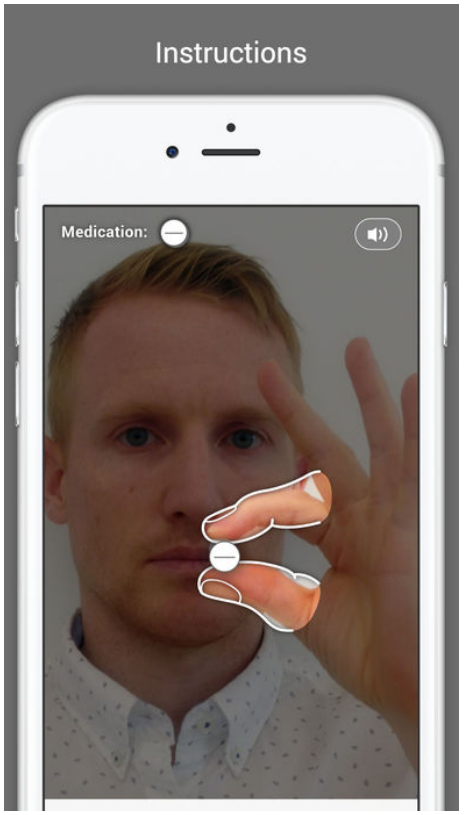
- **Optimal methods for monitoring adherence to PrEP:**
  1. Confirm that oral ingestion has occurred
  2. Evaluate longitudinal patterns of PrEP use in relation to sexual behavior
  3. Provide real-time adherence monitoring to allow rapid intervention
  4. Provide individual feedback on adherence performance with goal of improving adherence

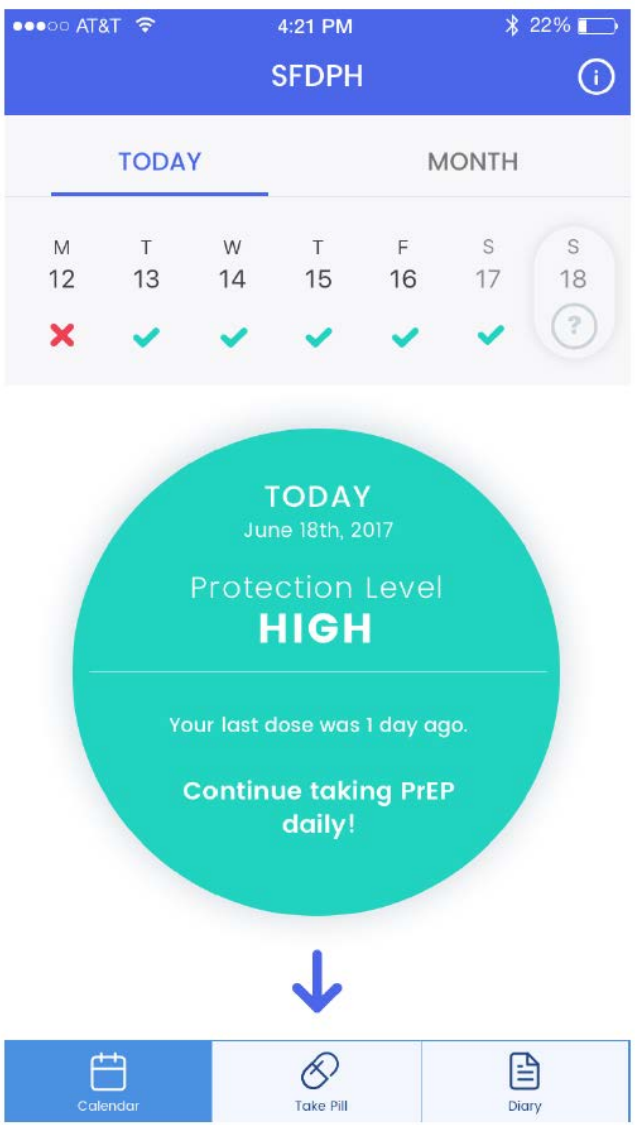
- **Potential for smart-phone based automated directly observed therapy (aDOT) with an electronic sexual diary to fulfill these characteristics**

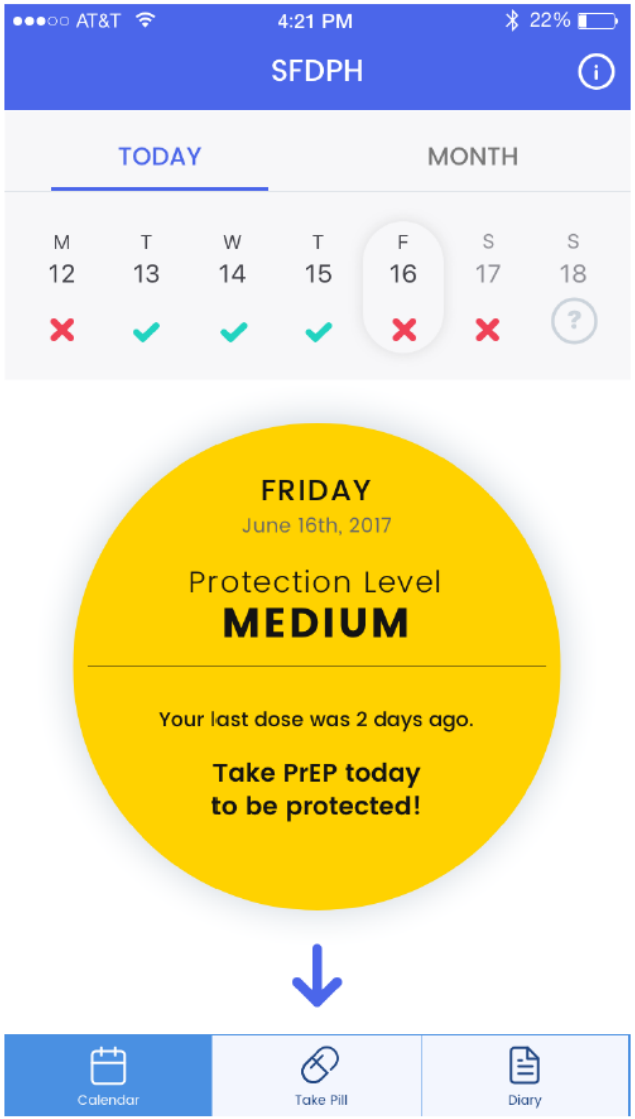
- **Goal: Build and evaluate DOT Diary (D^2) in**

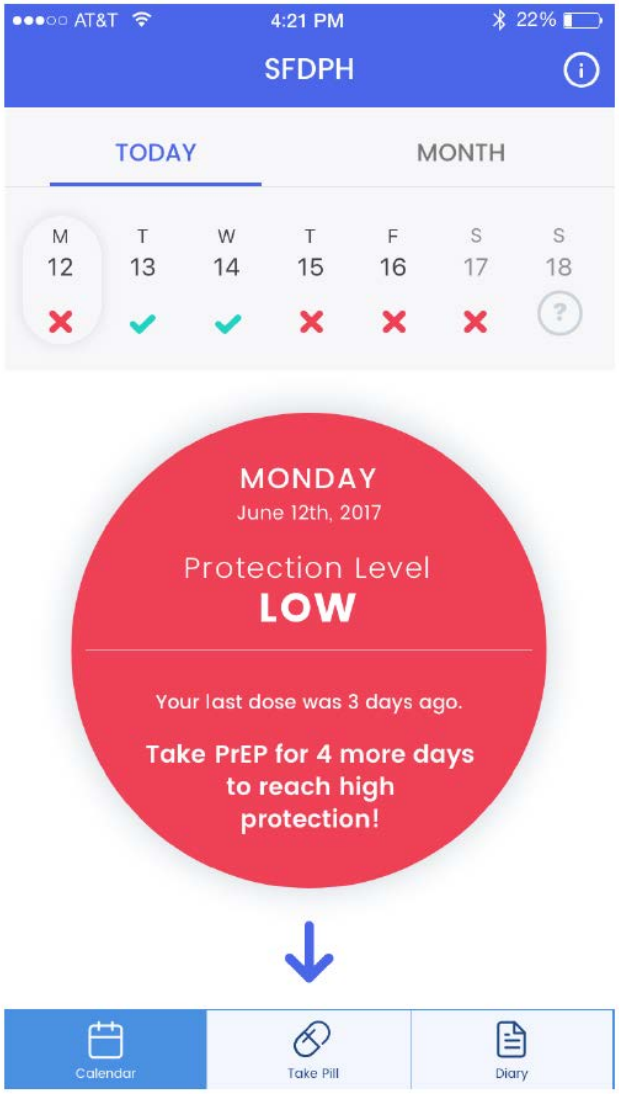
AiCure Artificial Intelligence Technology

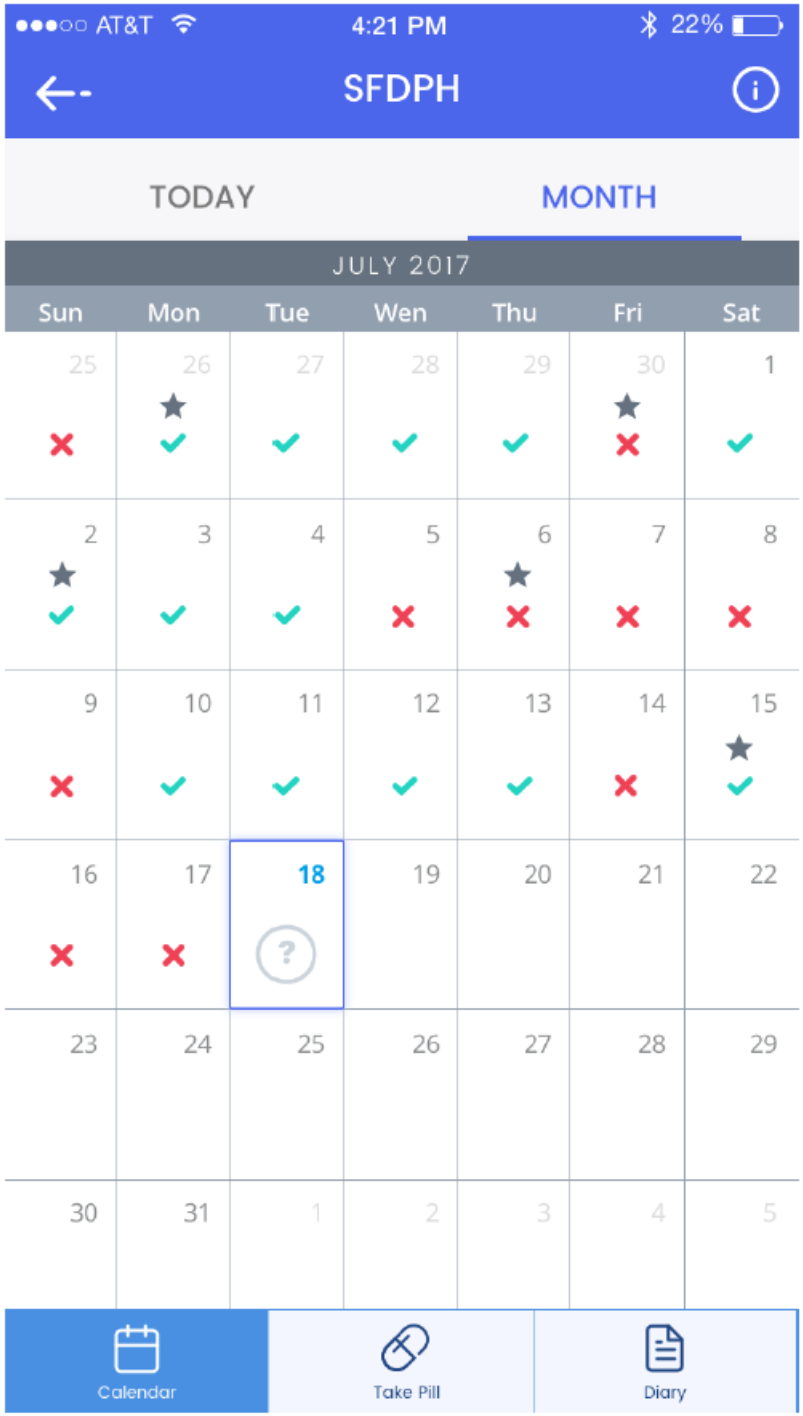


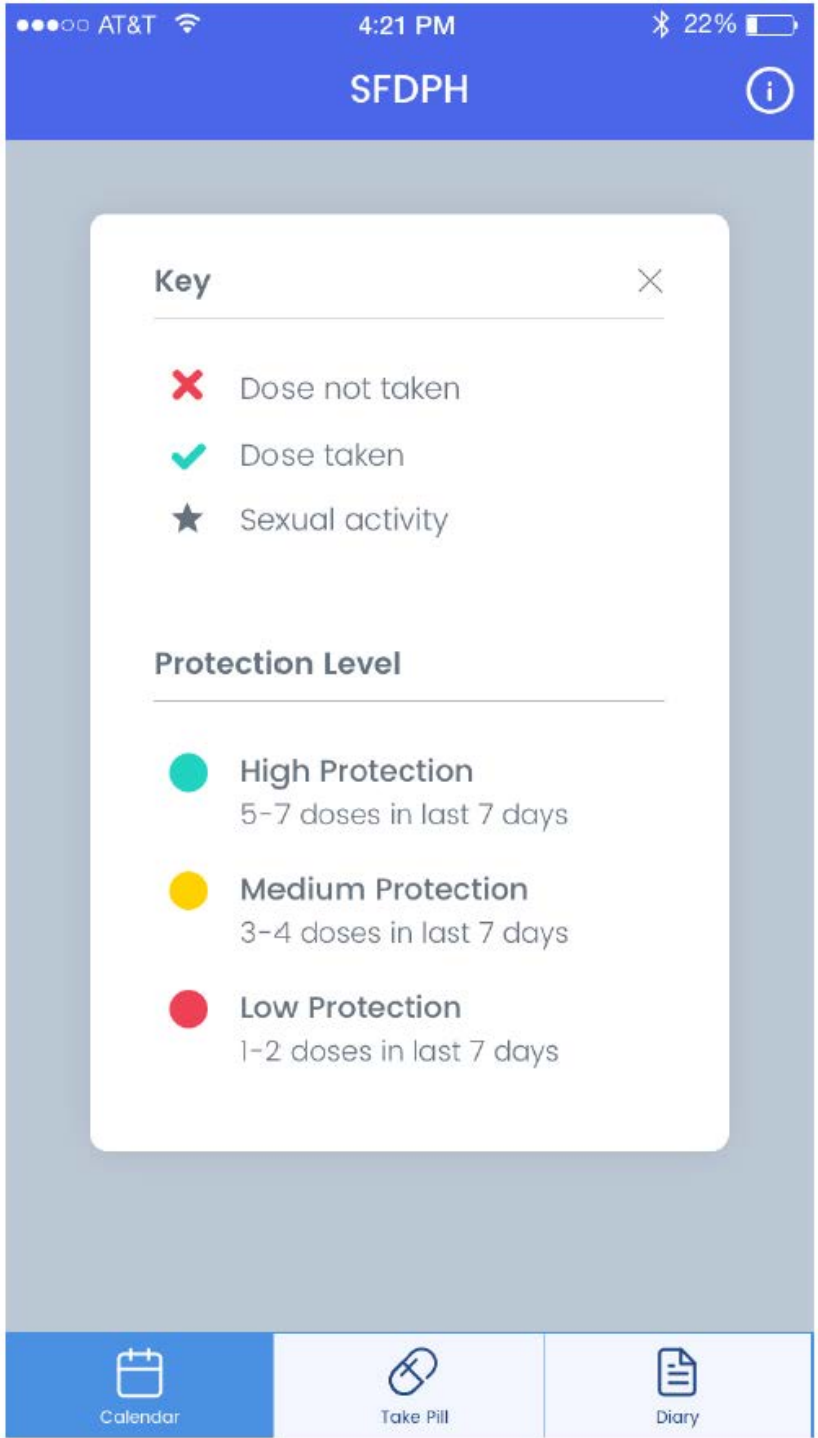



AT&T
4:21 PM
22%
SFDPH
TODAY
MONTH
M 12
T 13
W 14
T 15
F 16
S 17
S 18
TODAY
June 18th, 2017
Protection Level
HIGH
Your last dose was 1 day ago.
Continue taking PrEP daily!
Calendar
Take Pill
Diary


AT&T
4:21 PM
22%
SFDPH
TODAY
MONTH
M 12
T 13
W 14
T 15
F 16
S 17
S 18
FRIDAY
June 16th, 2017
Protection Level
MEDIUM
Your last dose was 2 days ago.
Take PrEP today to be protected!
Calendar
Take Pill
Diary


AT&T
4:21 PM
22%
SFDPH
TODAY
MONTH
M 12
T 13
W 14
T 15
F 16
S 17
S 18
MONDAY
June 12th, 2017
Protection Level
LOW
Your last dose was 3 days ago.
Take PrEP for 4 more days to reach high protection!
Calendar
Take Pill
Diary


AT&T
4:21 PM
22%
SFDPH
TODAY
MONTH
JULY 2017
Sun Mon Tue Wen Thu Fri Sat
25 26 27 28 29 30 1
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31 1 2 3 4 5
Calendar
Take Pill
Diary


AT&T
4:21 PM
22%
SFDPH
Key
Dose not taken
Dose taken
Sexual activity
Protection Level
High Protection
5-7 doses in last 7 days
Medium Protection
3-4 doses in last 7 days
Low Protection
1-2 doses in last 7 days
Calendar
Take Pill
Diary

Conclusions

- HIV testing rates and PrEP uptake/adherence have been low among YMSM
- Mobile technologies are a promising strategy to reach and engage youth in HIV prevention
- An SMS-based intervention (Prepmate) was highly acceptable and increased PrEP retention and adherence among YMSM in a real-world clinic setting
- Strategies to integrate SMS-support components of Prepmate into PrEP delivery settings for youth should be explored
- Mobile phone apps to increase HIV/STI testing and monitor and support PrEP adherence are being developed and could help address disparities in the PrEP care

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Apt Mobility
AiCure

Study participants

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Food for Thought:

Addressing the Vicious Cycle of Food Insecurity and HIV

Sheri Weiser, MD, MPH

Department of Medicine
University of California, San Francisco

OVERVIEW

1. Food insecurity increase morbidity & mortality in HIV and other chronic diseases

2. Food security interventions reverse the cycle and improve health

FOOD IN/SECURITY: DEFINITION

Food security:

Access by all people at all times to enough food for an active, healthy life

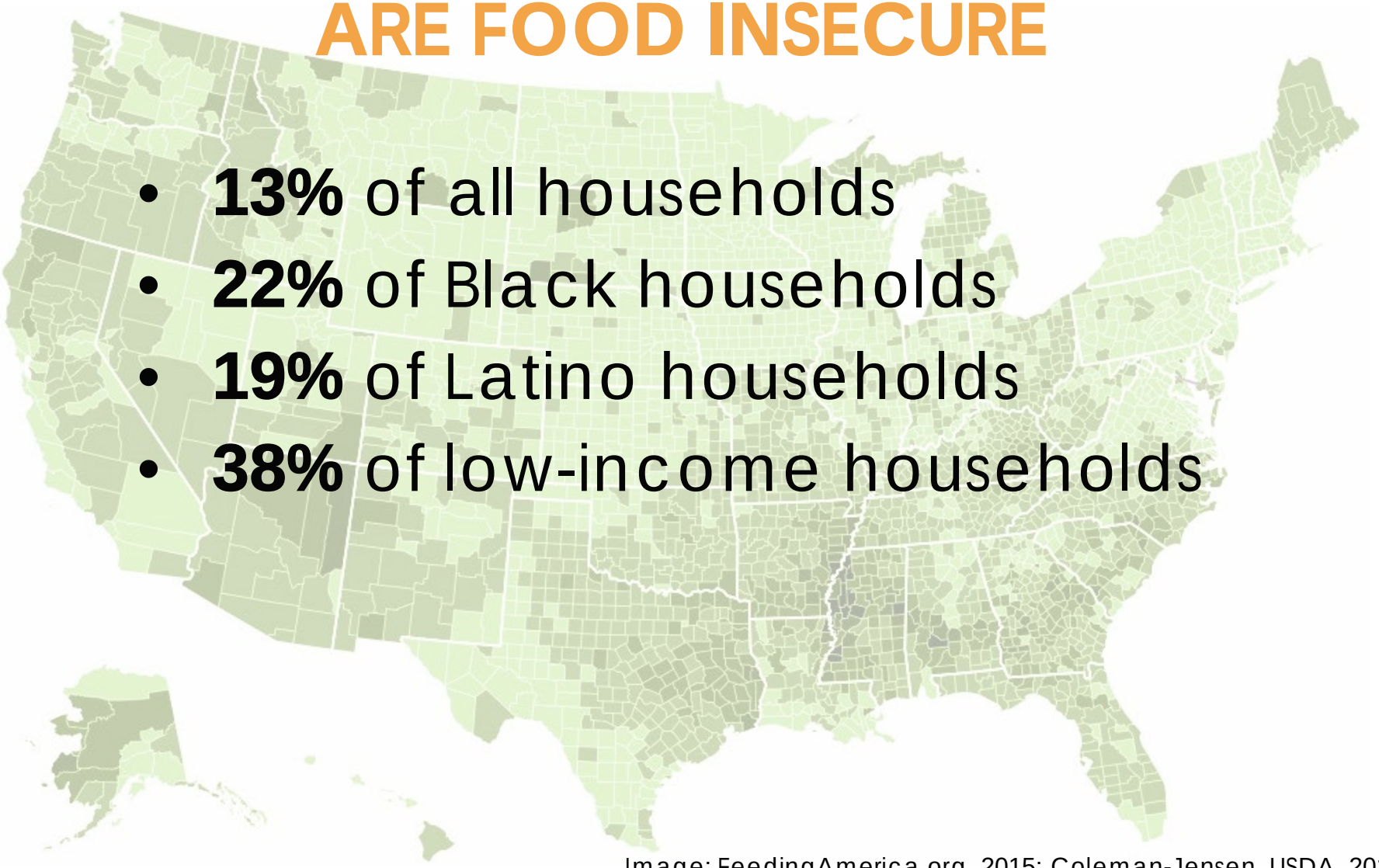
Food insecurity:

The limited or uncertain availability of nutritionally adequate and safe foods or the inability to acquire acceptable foods in socially acceptable ways

United States Department of Agriculture; USA National Research Council

PREVALENCE OF FOOD INSECURITY IN US

16 MILLION U.S. HOUSEHOLDS ARE FOOD INSECURE

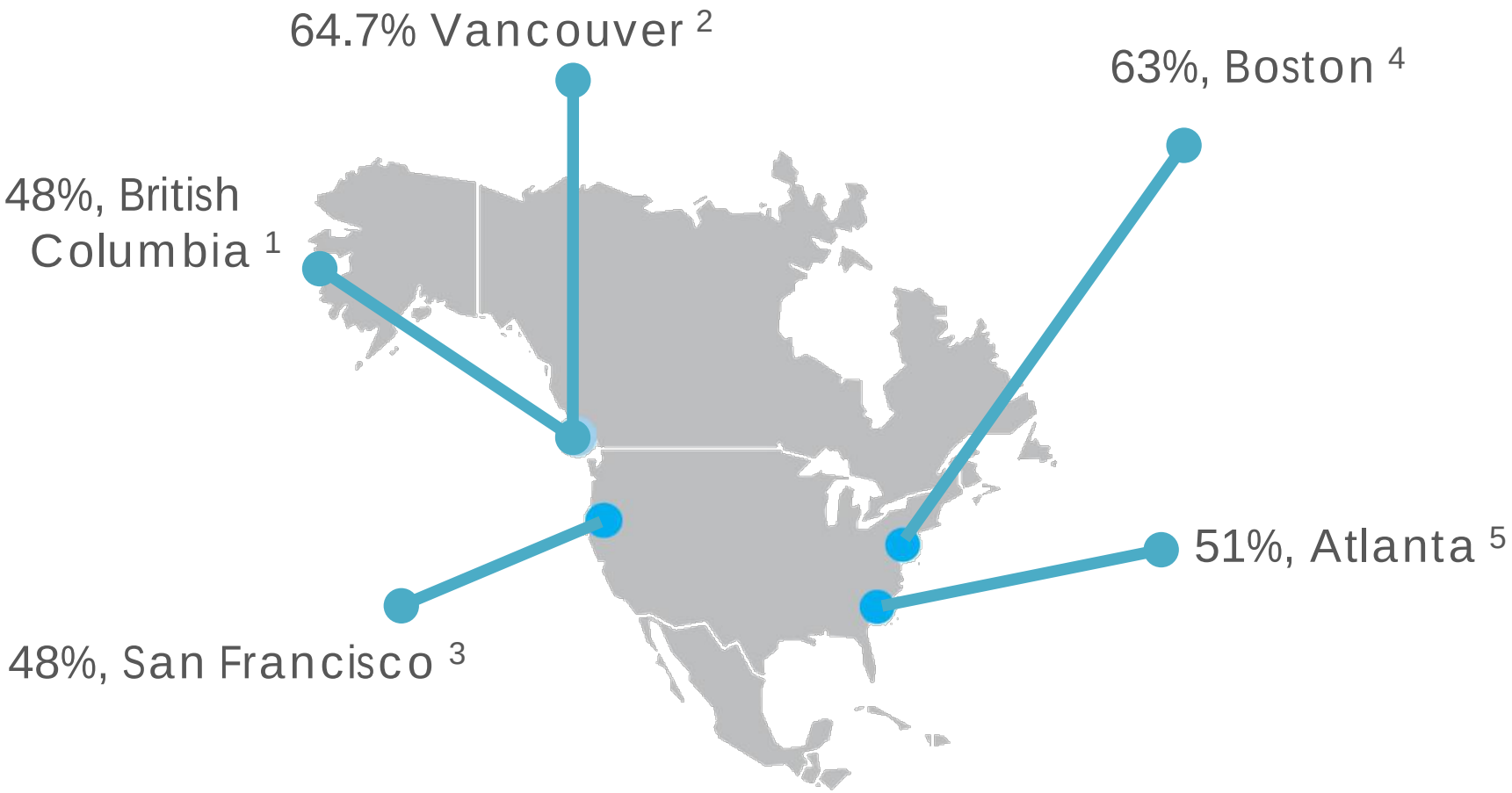


- **13%** of all households
- **22%** of Black households
- **19%** of Latino households
- **38%** of low-income households

Image: FeedingAmerica.org, 2015; Coleman-Jensen, USDA, 2015.

APPROXIMATELY HALF

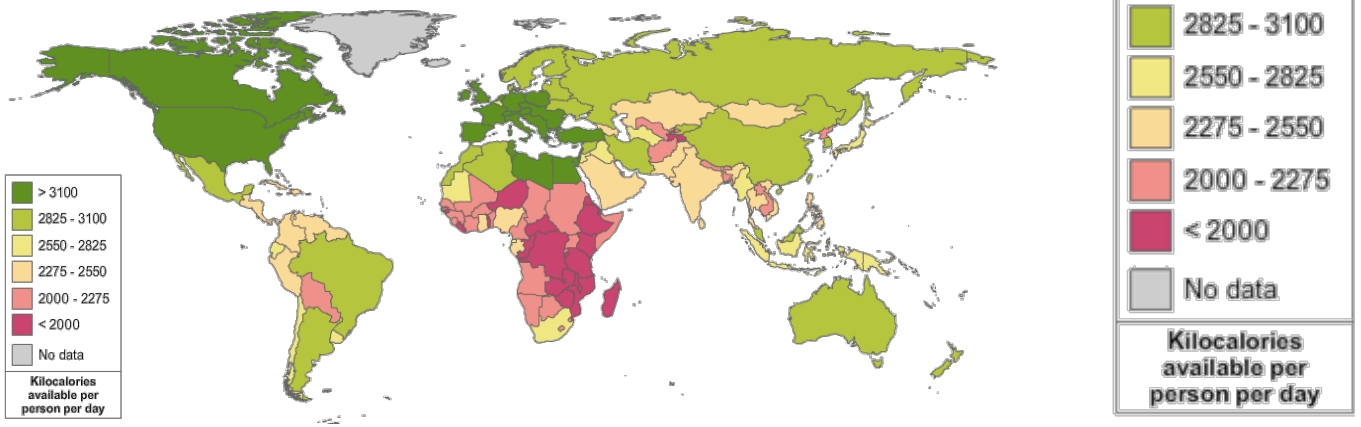
OF PEOPLE LIVING WITH HIV IN NORTH AMERICA ARE FOOD INSECURE



[1] Normen, J Nutrition, 2005; [2] Anema, Subs Abuse Tx, 2010; [3] Weiser, JGIM, 2012; [4] McMahon JAIDS, 2011; [5]Kalichman J Urban Health, 2010

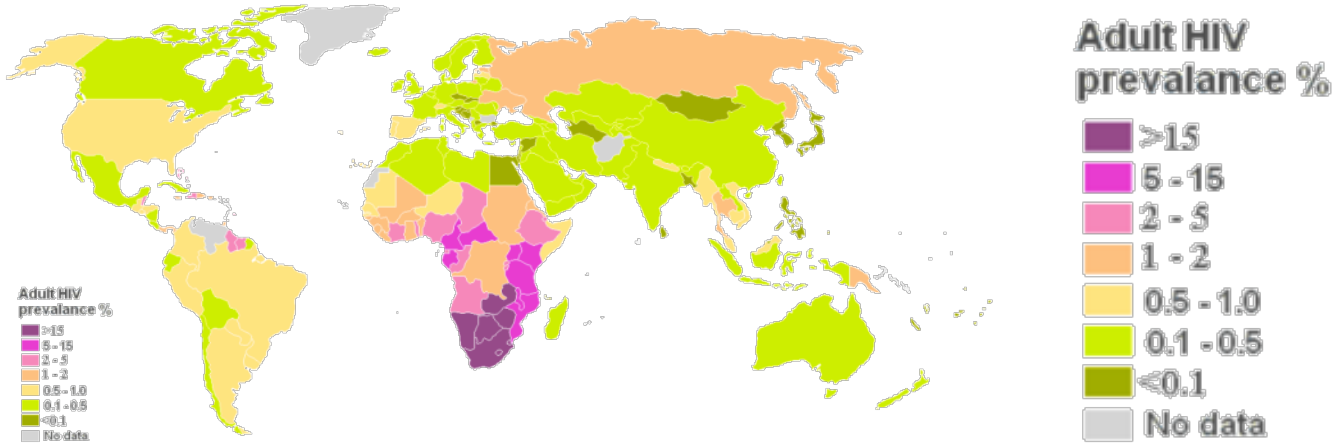
HIV AND FOOD INSECURITY:
SYNDEMIC ISSUES

Food Insecurity
Kcal/per/day

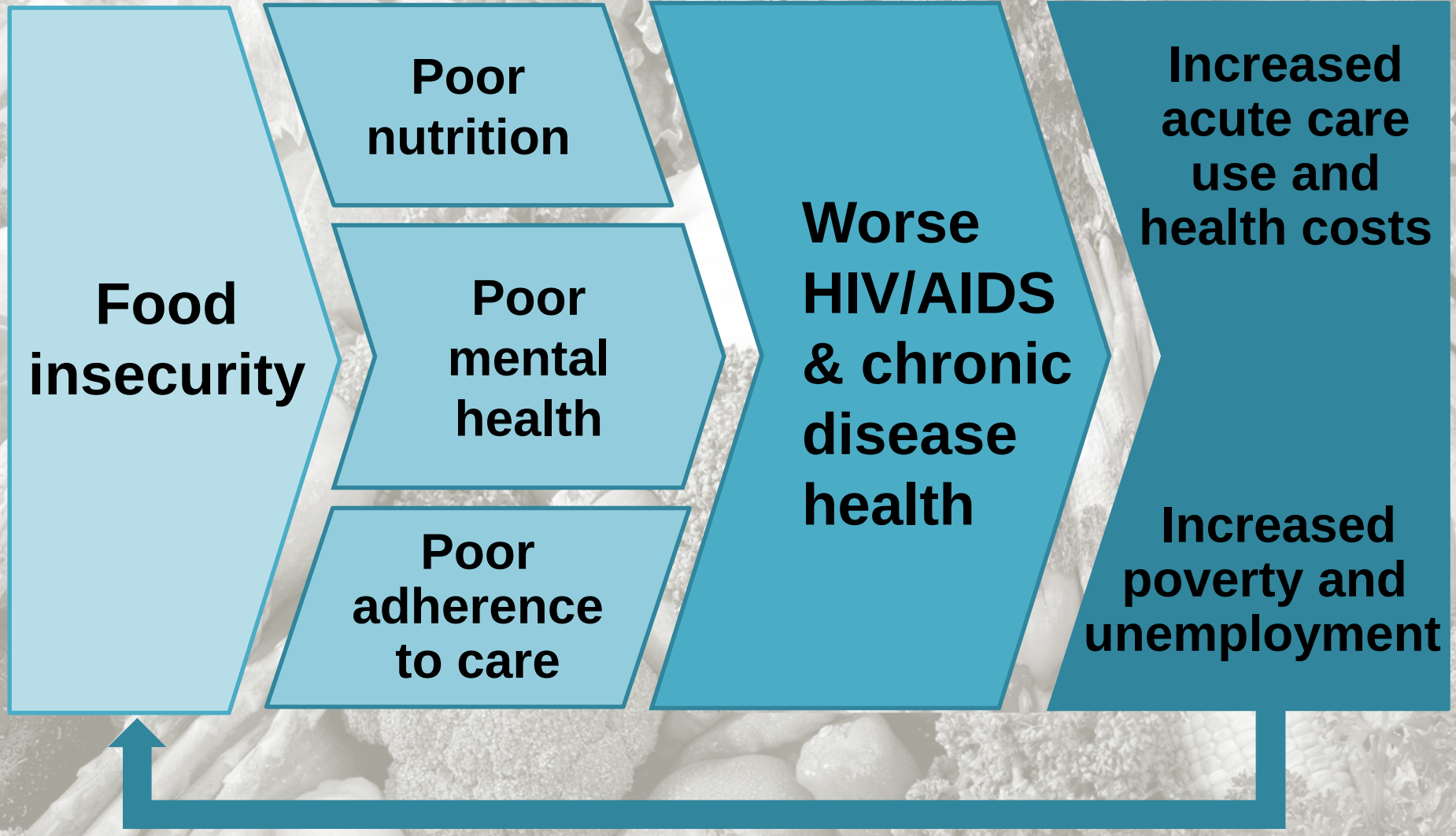


IFPRI (2010) Food Security CASE maps & UNAIDS 2010

Adult HIV Prevalence



VICIOUS CYCLE OF
FOOD INSECURITY AND POOR HEALTH



Weiser et al., *Am J Clin Nutr*, 2011

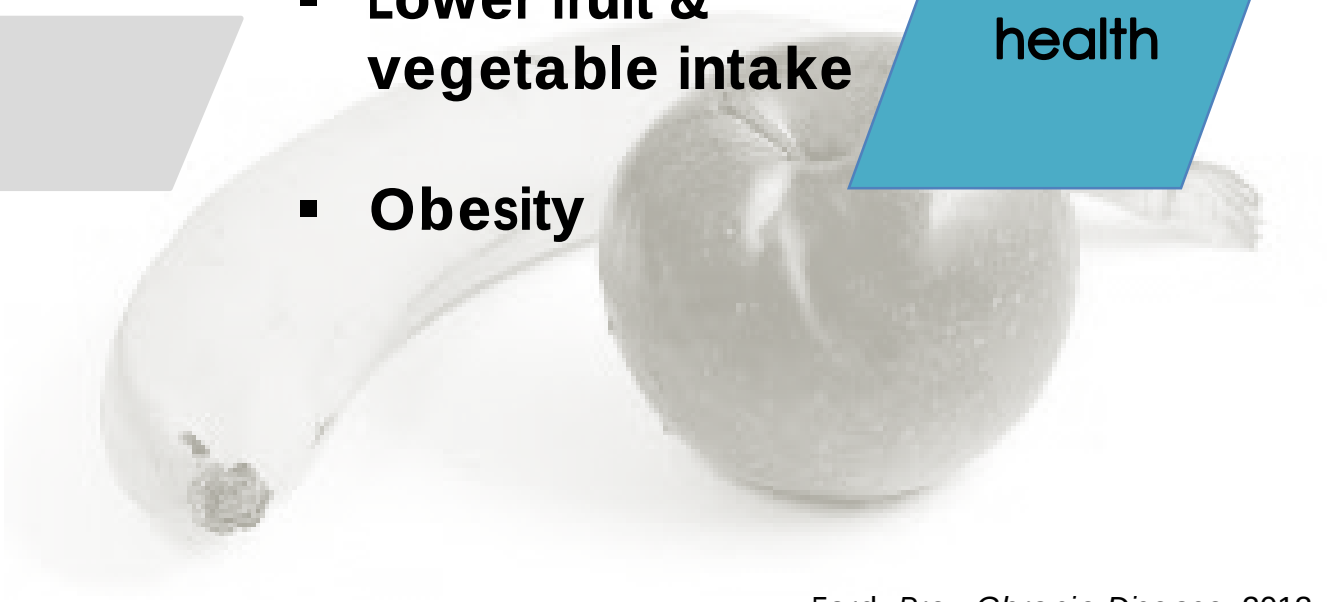
FOOD INSECURITY WORSENS HEALTH VIA POOR NUTRITION

Food insecurity

Poor nutrition

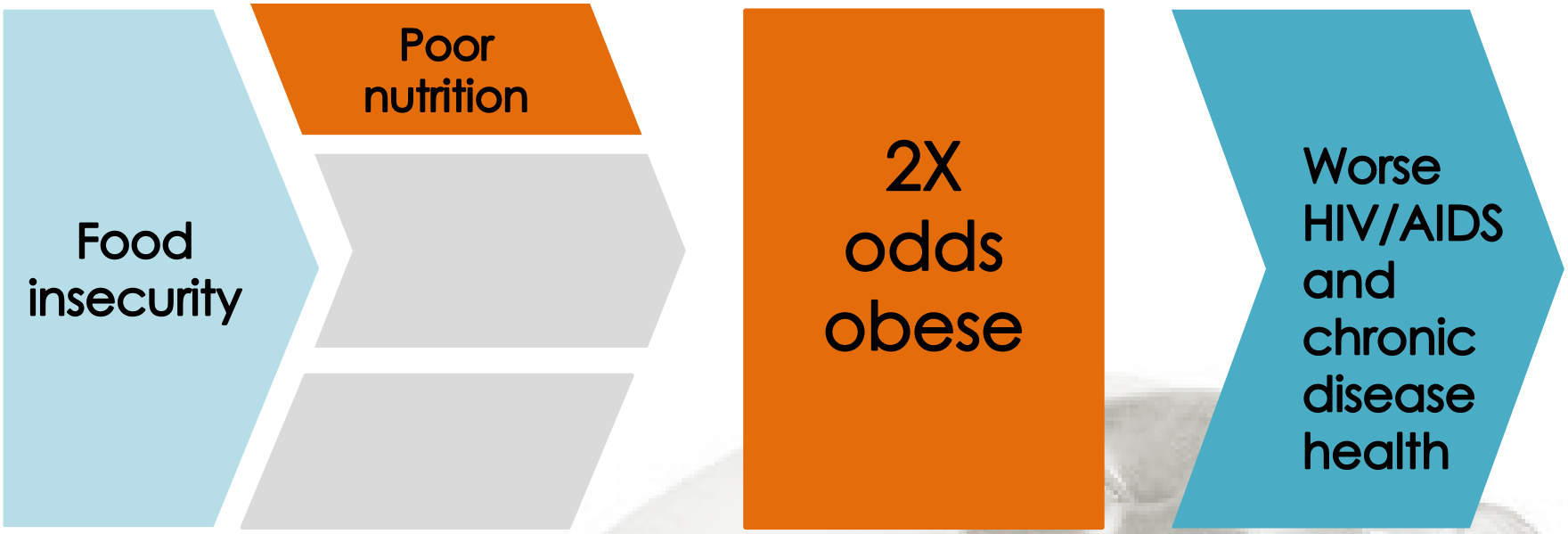
- Undernutrition
- Micronutrient & macronutrient deficiencies
- Lower fruit & vegetable intake
- Obesity

Worse HIV/AIDS & chronic disease health



Ford. *Prev Chronic Disease*, 2013

FOOD INSECURITY WORSENS HIV HEALTH VIA POOR NUTRITION



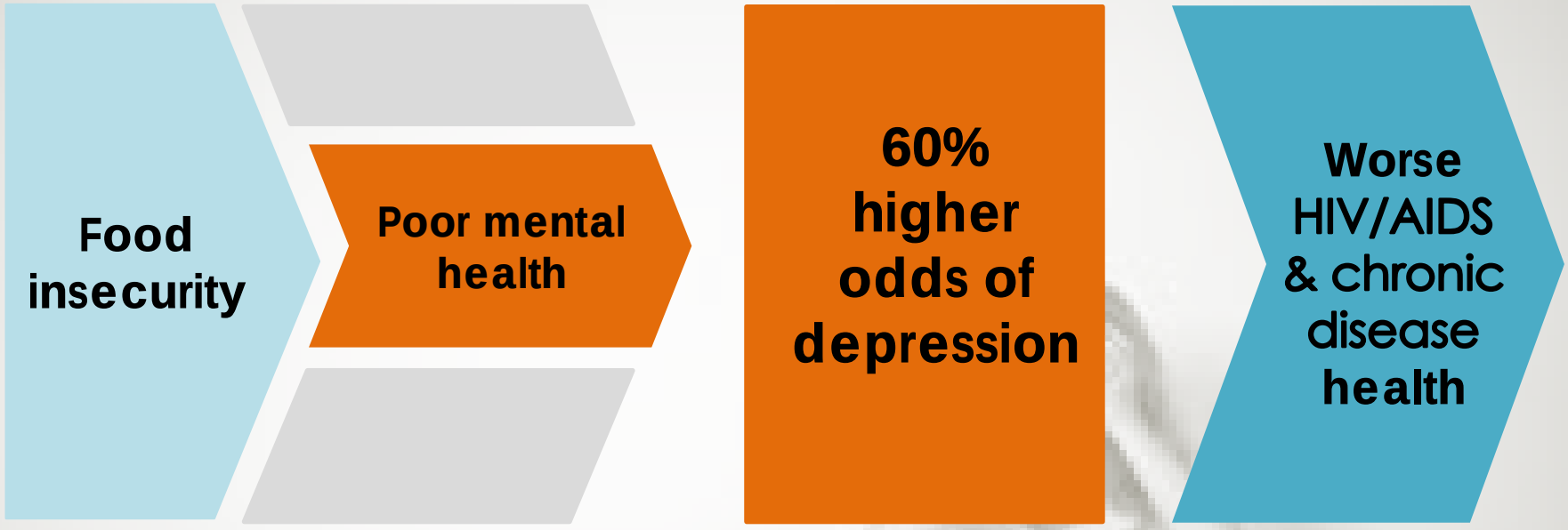
Food insecure HIV-infected and at risk women had higher odds of being overweight and obese

Sirotin & Weiser, *PLoS One*, 2015

FOOD INSECURITY WORSENS HEALTH VIA POOR MENTAL HEALTH

1. Vogenthaler et al. AIDS and Behavior 2011; 2. Tsai, et al SSM 2012; 3. Palar & Weiser, AIDS and Behavior, 2014; 4. Weiser et al. *Am J Clin Nutr* 2011; 5. Strike, *BMC Public Health* 2012.

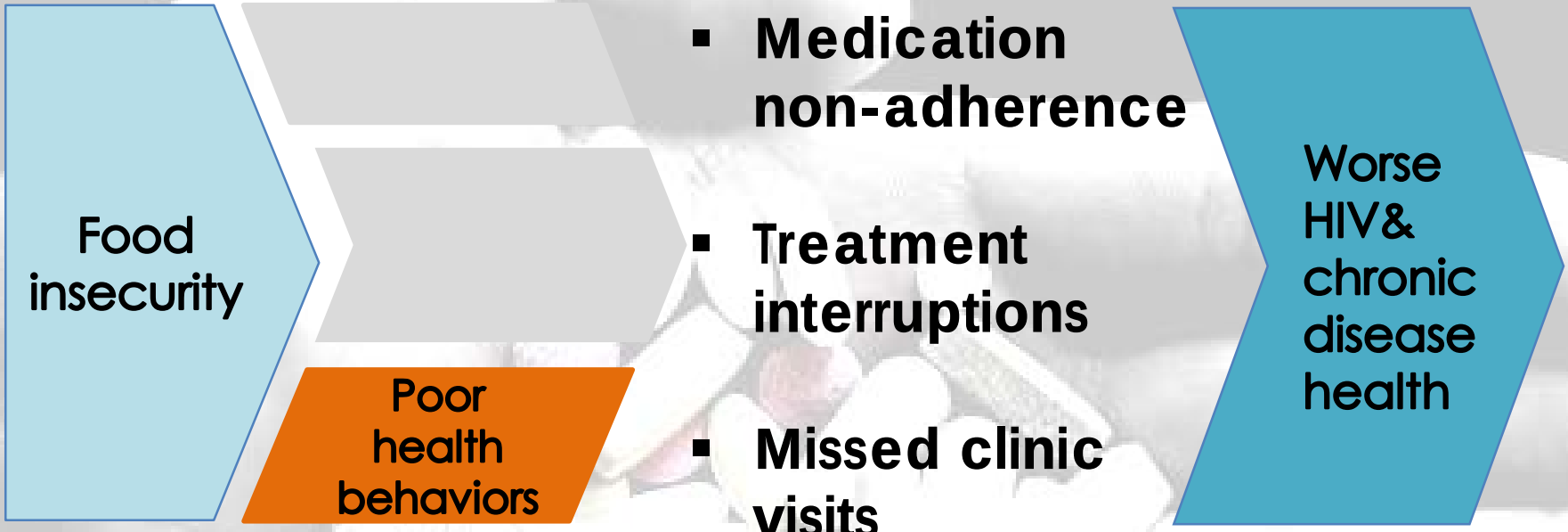
FOOD INSECURITY WORSENS HIV HEALTH VIA POOR MENTAL HEALTH



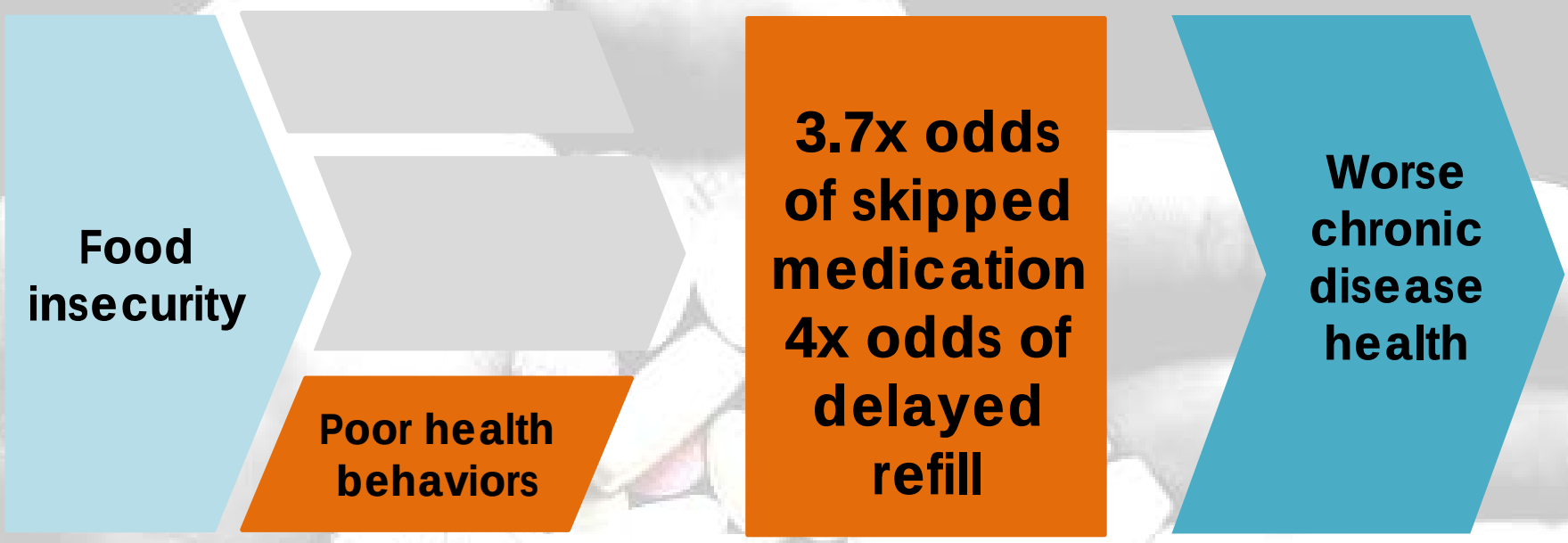
Food insecure HIV + individuals more depressed compared to food secure

Palar et al., AIDS Behav, 2014

FOOD INSECURITY WORSENS HEALTH VIA POOR HEALTH BEHAVIORS



FOOD INSECURITY WORSENS HEALTH VIA POOR HEALTH BEHAVIORS



NHIS (67,539 adults): Severely food insecure less able to take medications as prescribed

Herman et al., AJPH, 2015

FOOD INSECURITY WORSENS HEALTH ALONG CASCADE OF CARE FOR HIV

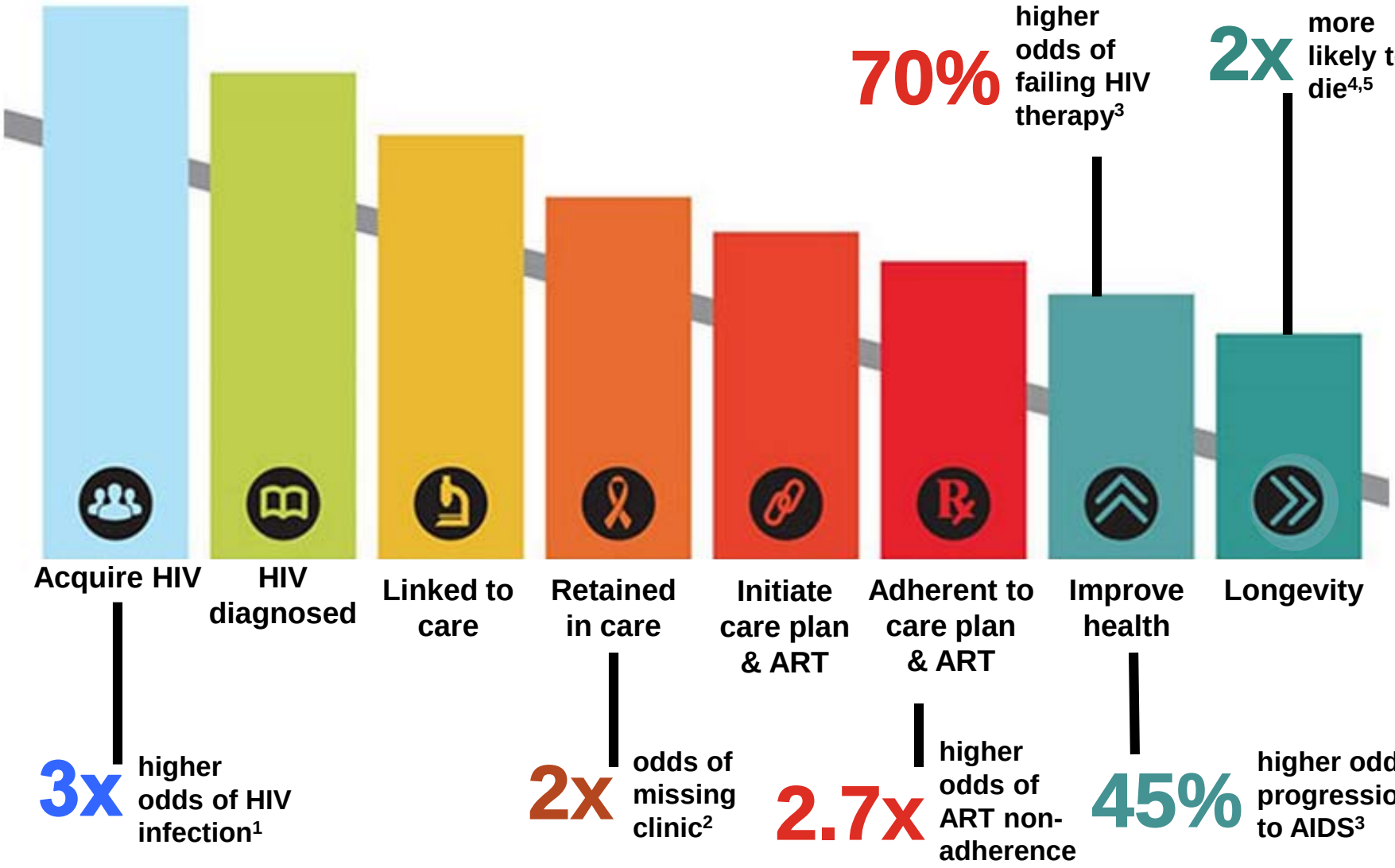


Image: FHI360.org. 1. Palar, AIDS, 2016; 2. Weiser, AIDS, 2012; 3. Wang, JGIM, 2011; 4. Weiser, AIDS, 2014; 5. Anema, PLoS One, 2013

FOOD INSECURITY IS LINKED TO DIABETES & OTHER CHRONIC DISEASES

2X higher odds of having **diabetes**[1]

20% higher odds of **hypertension**[2]

30% higher odds of **hyperlipidemia**[2]

Over **3x** higher odds of **osteoporosis**[3]

46% higher odds of **chronic kidney disease**[4]

1 Seligman. JGIM , 2007; 2 Seligman. J Nutr, 2010;
3 Lyles. J HC Poor Underserved, 2007; 4 Crews. Amer J Nephrology, 2014

FOOD INSECURITY LINKED TO INCREASED ACUTE HEALTHCARE UTILIZATION IN HIV

2x odds of being hospitalized

71% higher odds of ER visits

Weiser, et al. *JGIM* 2013

FOOD=MEDICINE:

ADDRESSING THE CYCLE OF FOOD INSECURITY & POOR HEALTH

POSSIBLE **INTERVENTIONS**

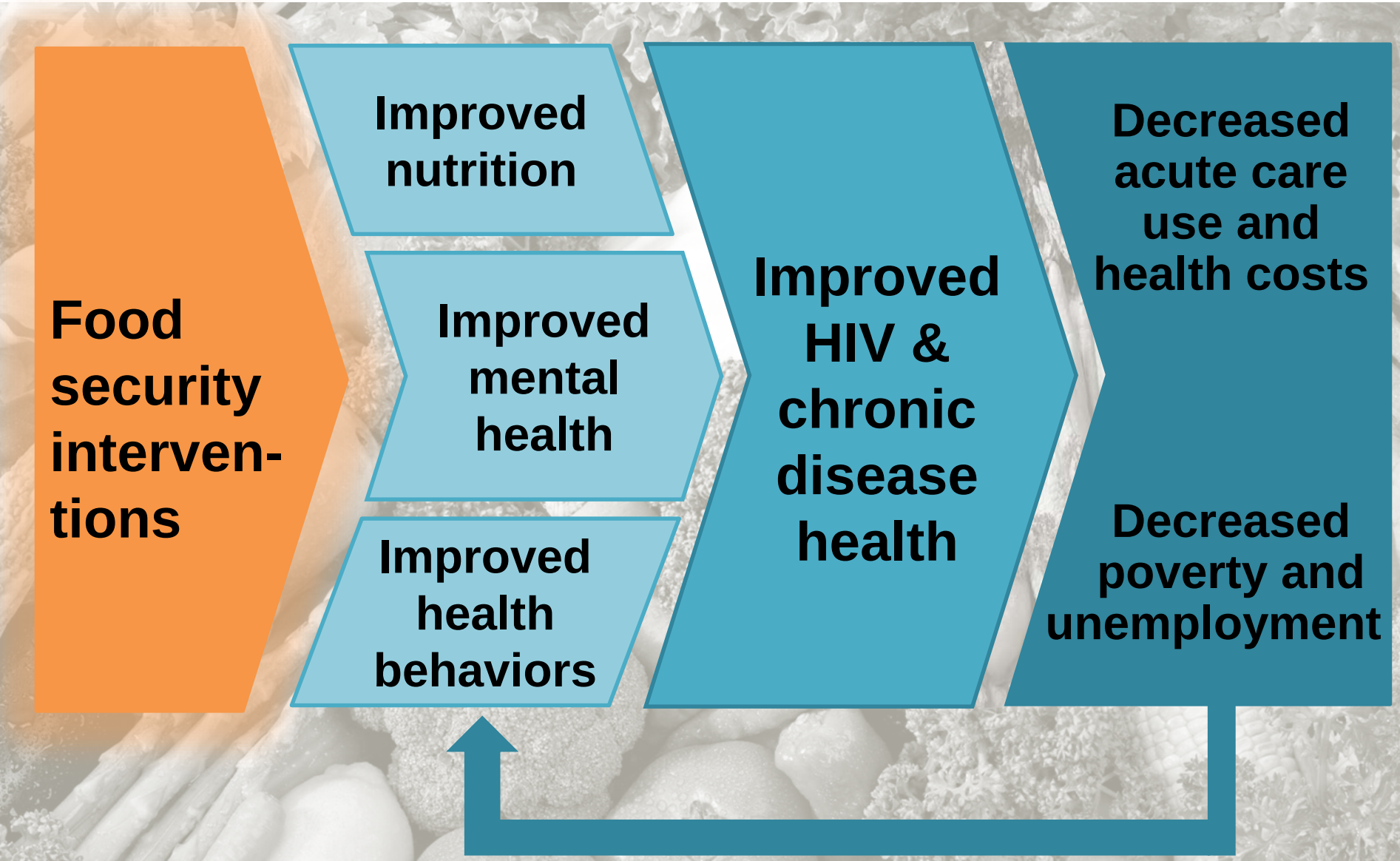
Targeted food supplementation

Food stamps/vouchers

Vocational Training Programs

Cash transfers

FOOD SECURITY INTERVENTIONS
IMPROVE HIV HEALTH AND COSTS



FOOD SUPPORT
IMPROVES HIV NUTRITION

Food Support Programs

52% decrease in food insecurity (p<0.0001)

31% decreased frequency of fat consumption (p=0.003)

27% increased frequency of fruit & vegetable consumption (p=0.01)

Improved Nutrition

Improved HIV & Chronic Disease Health

Palar, Napoles et. al JUH, 2017

FOOD SUPPORT IMPROVES MENTAL HEALTH

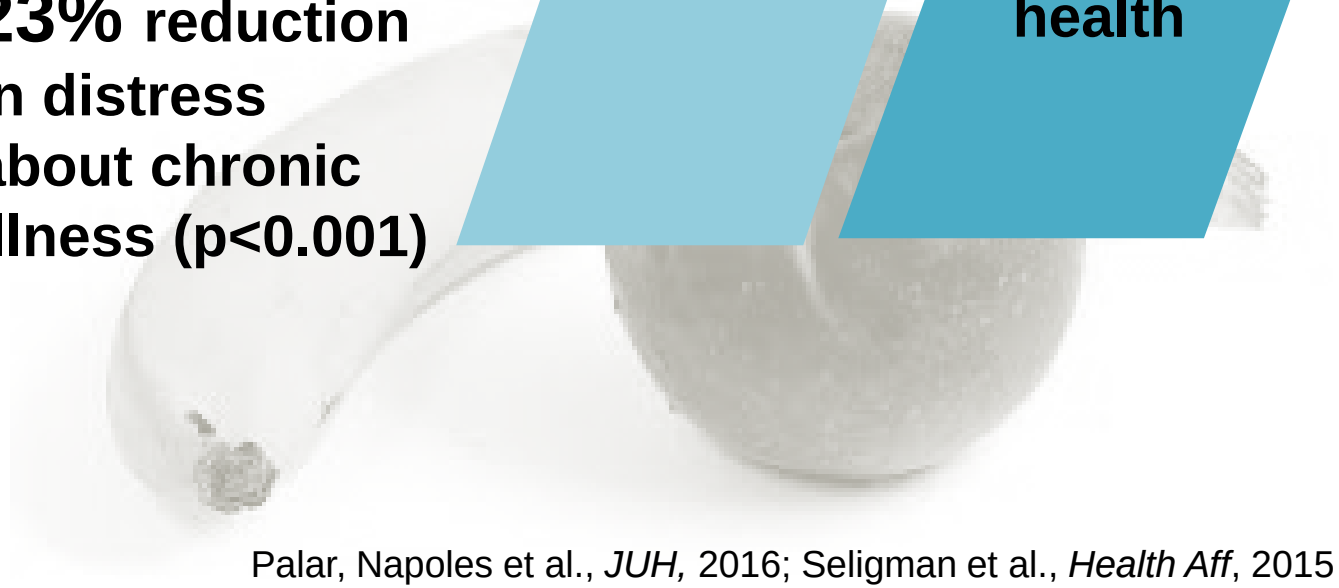
Food Support Programs

23% reduction in symptoms of depression (p=0.028)

23% reduction in distress about chronic illness (p<0.001)

Improved Mental Health

Improved HIV & chronic disease health



Palar, Napoles et al., *JUH,* 2016; Seligman et al., *Health Aff*, 2015

FOOD SUPPORT IMPROVES HEALTH BEHAVIORS

Food Support Programs

Easier to self-manage diabetes[1,2]

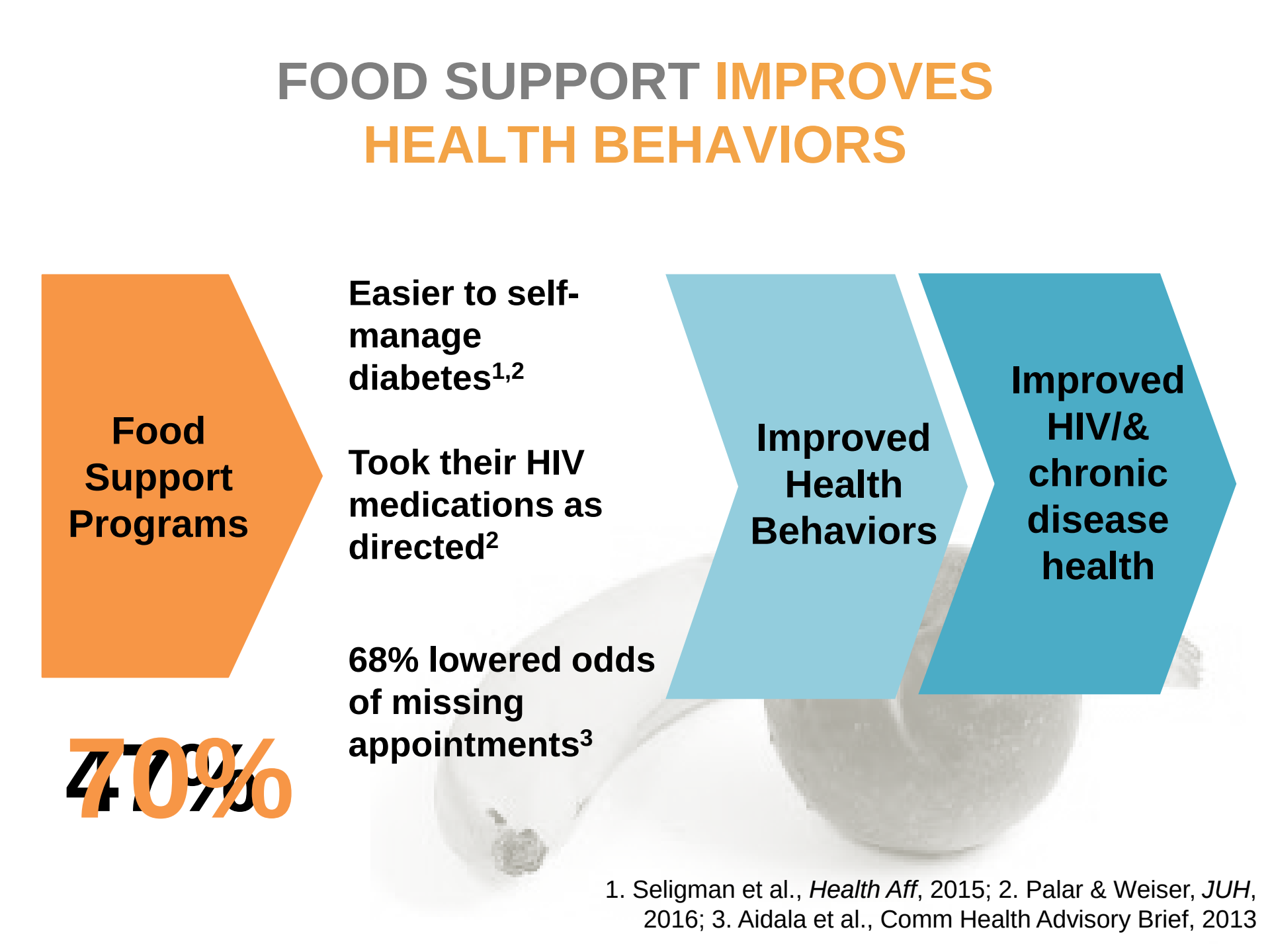
Took their HIV medications as directed[2]

68% lowered odds of missing appointments[3]

Improved Health Behaviors

Improved HIV/& chronic disease health

40%



1. Seligman et al., *Health Aff*, 2015; 2. Palar & Weiser, *JUH*, 2016; 3. Aidala et al., Comm Health Advisory Brief, 2013

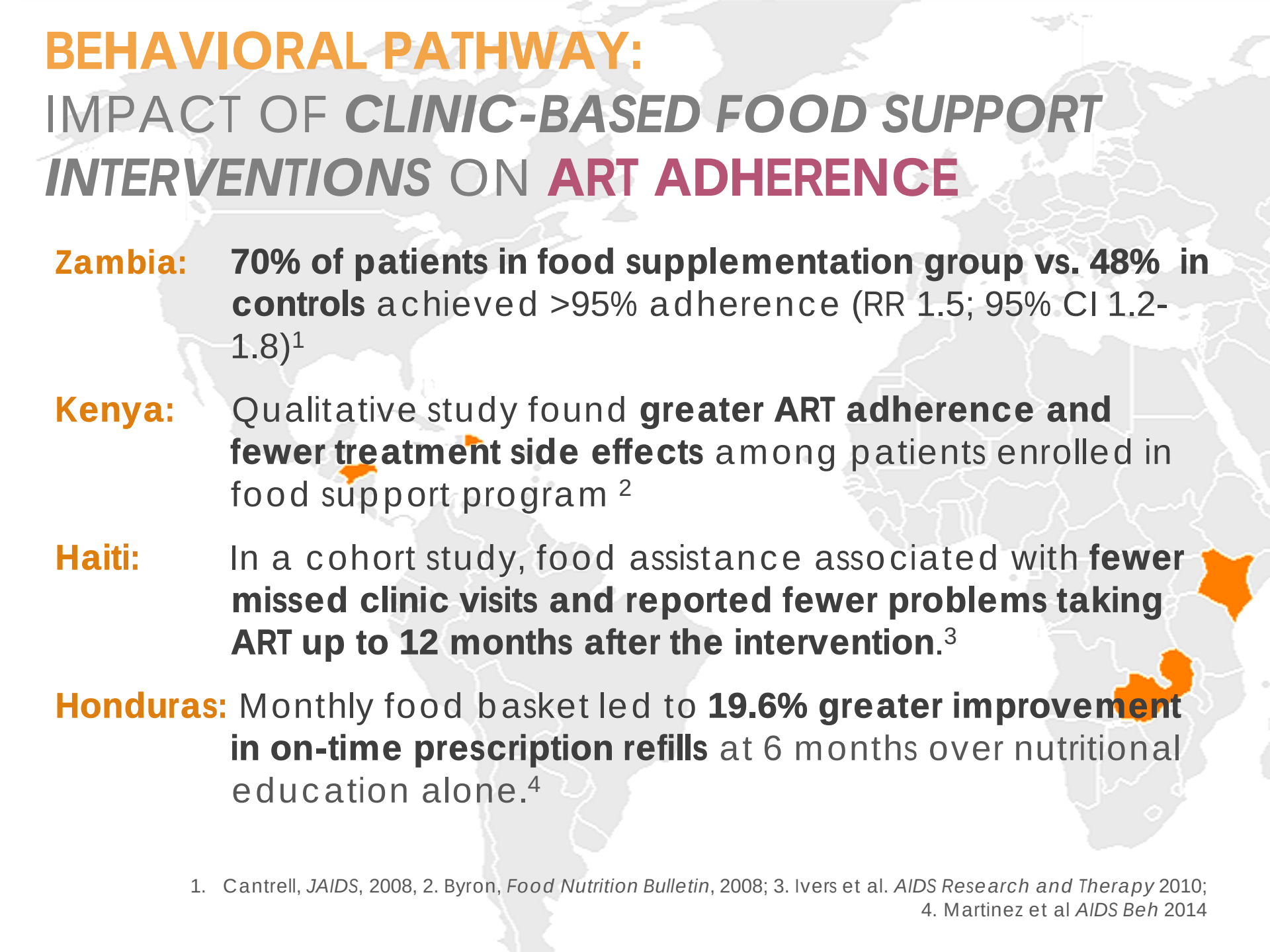
BEHAVIORAL PATHWAY:
IMPACT OF *CLINIC-BASED FOOD SUPPORT INTERVENTIONS* ON ART ADHERENCE

Zambia: **70% of patients in food supplementation group vs. 48% in controls** achieved >95% adherence (RR 1.5; 95% CI 1.2-1.8)[1]

Kenya: Qualitative study found **greater ART adherence and fewer treatment side effects** among patients enrolled in food support program [2]

Haiti: In a cohort study, food assistance associated with **fewer missed clinic visits and reported fewer problems taking ART up to 12 months after the intervention**.[3]

Honduras: Monthly food basket led to **19.6% greater improvement in on-time prescription refills** at 6 months over nutritional education alone.[4]



1. Cantrell, *JAIDS*, 2008, 2. Byron, *Food Nutrition Bulletin*, 2008; 3. Ivers et al. *AIDS Research and Therapy* 2010; 4. Martinez et al *AIDS Beh* 2014

FOOD SUPPORT INTERVENTIONS REDUCE ACUTE HEALTHCARE UTILIZATION

POH, SAN FRANCISCO[1]

63% less likely to be hospitalized

36% less likely to visit ER

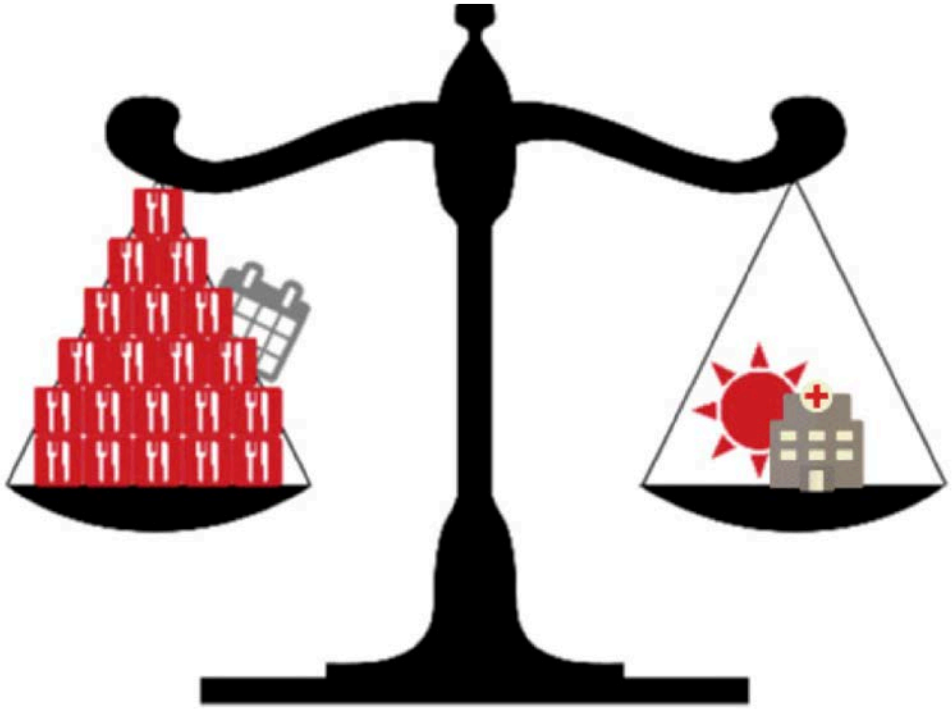
CHAIN, NEW YORK CITY[2]

45% less likely to have ER visit

47% less likely to have an inpatient stay

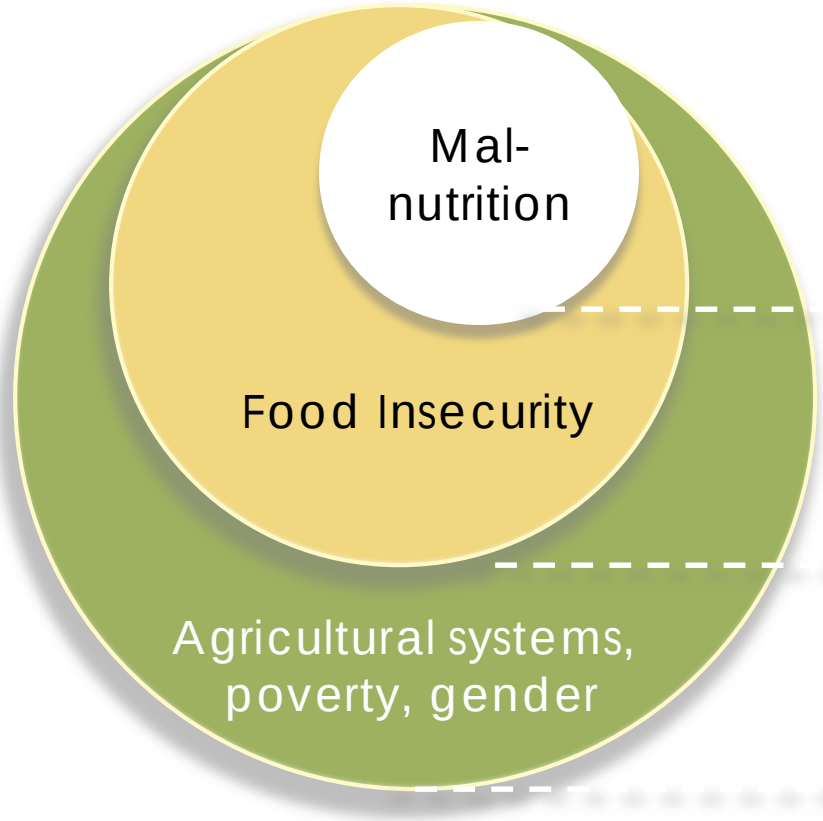
1. Palar, Napoles et al. *JUH*, 2016; 2. Aidala, et al., Comm Health Advisory Brief, 2013

FOOD SUPPORT IS AN INEXPENSIVE INTERVENTION



Feed someone for ½ a year for the same cost as 1 day in the hospital

SOCIAL PROTECTION APPROACHES:
MOVING TOWARD LONG-TERM STRATEGIES



Interventions	Scope	
Macronutrient/ Micronutrient supplement	Short-term	TRADITIONAL APPROACH
Social Transfers or Urban Gardens	Medium-term	
Livelihoods	Long-term	SOCIAL PROTECTION APPROACH

SHAMBA MAISHA PILOT, KENYA

NIMH R34 (WEISER/COHEN/BUKUSI PIS)

Overview:

- "Farm Life" in Kiswahili
- Targets poverty & agriculture for HIV-infected adults
- 2 clusters; n=140 people

Intervention components:

- Microfinance
- Kickstart Human-powered water pump
- Agricultural/finance training

SHAMBA MAISHA:
INTERVENTION FRAMEWORK

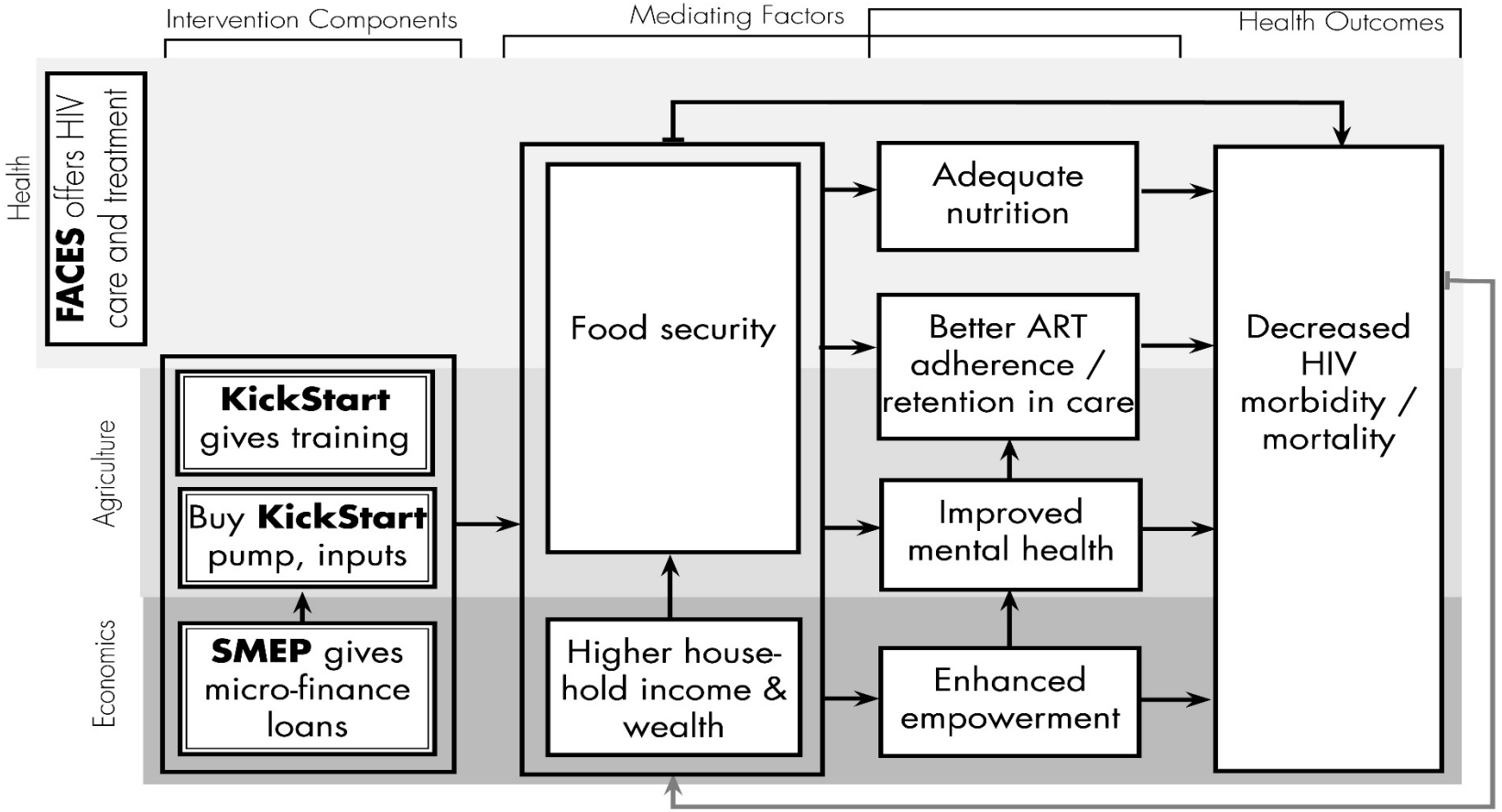
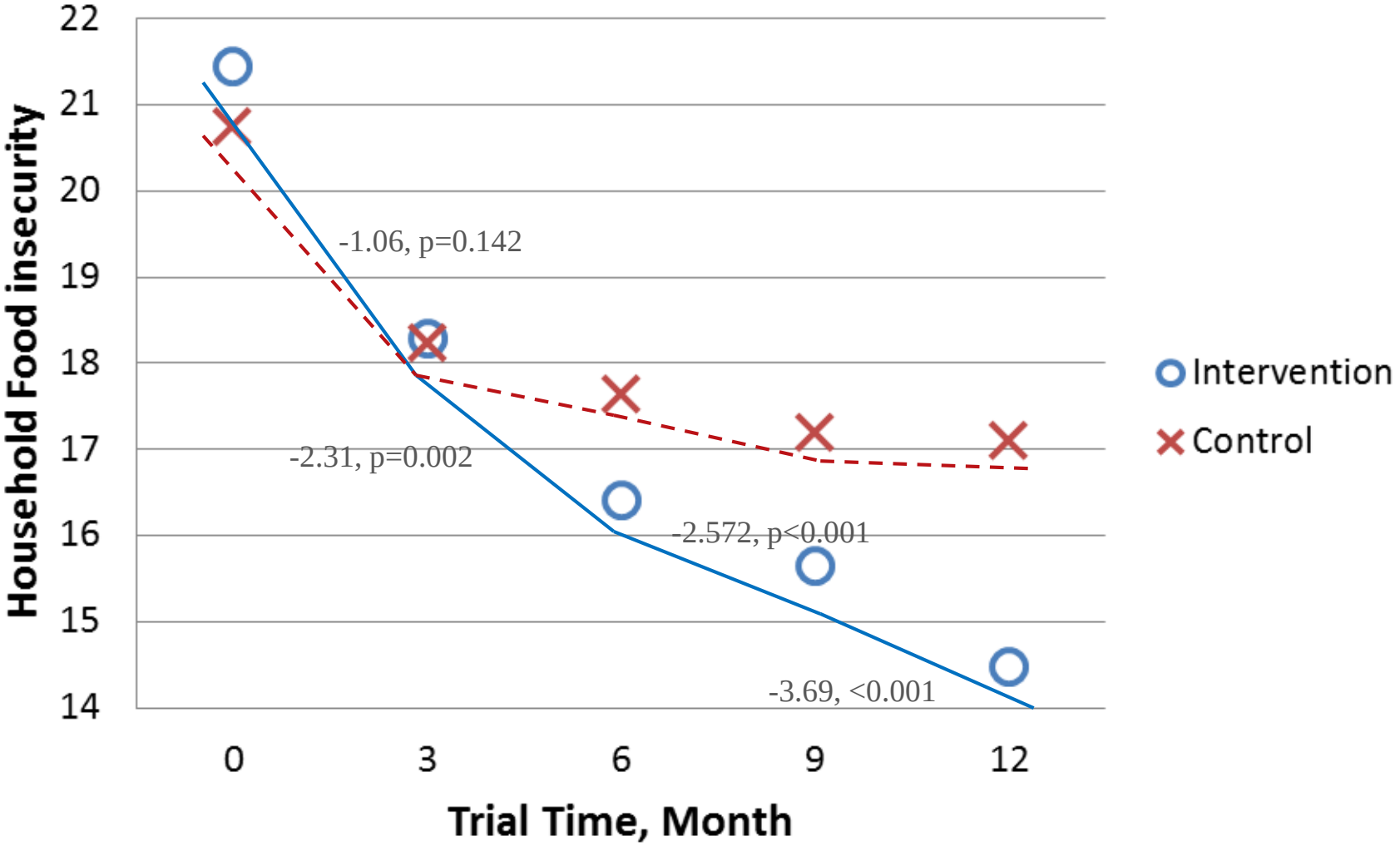


Figure 2. Intervention Theory of Change

Cohen & Weiser, *Spinger Plus*, 2015

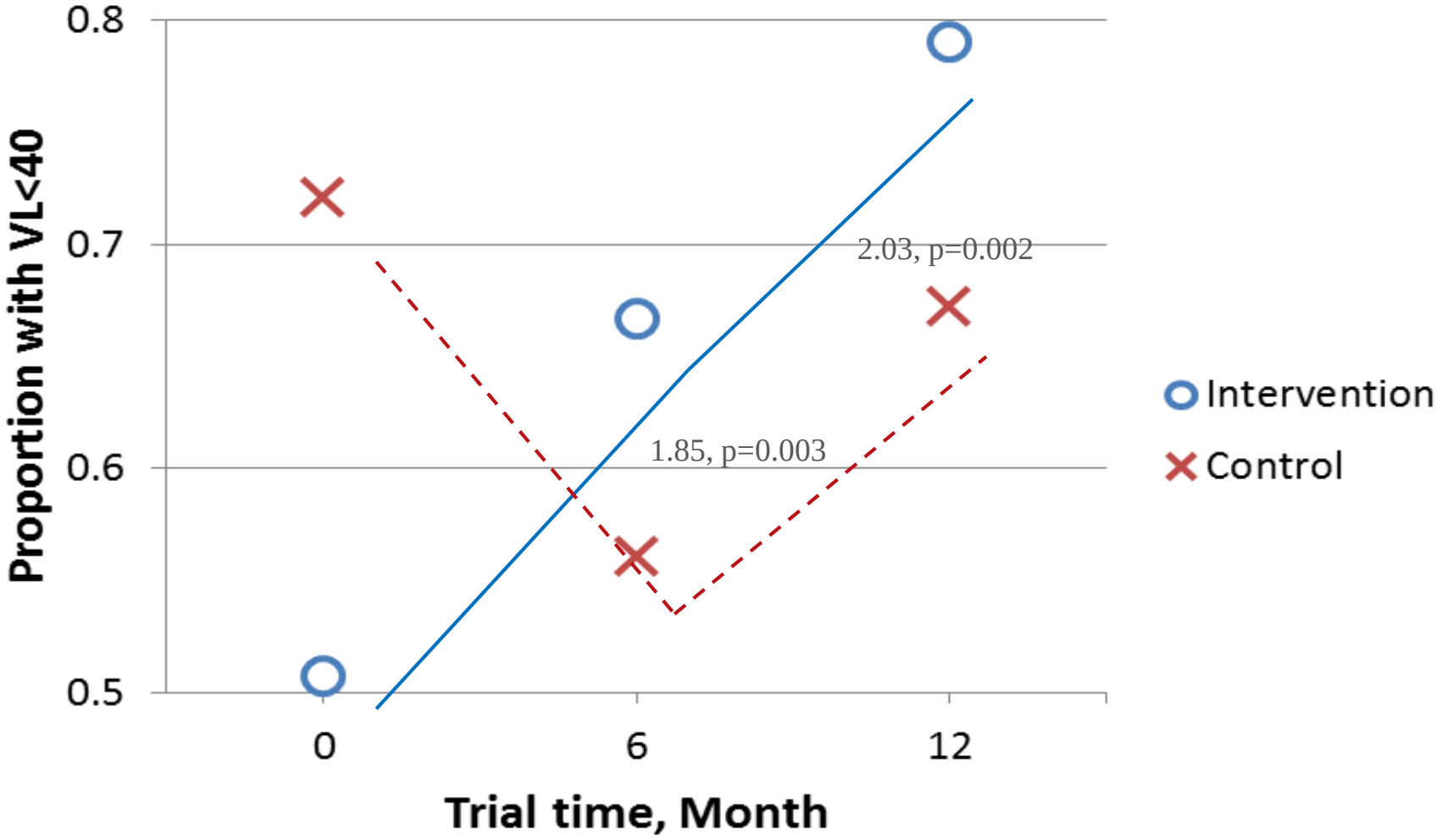
SHAMBA MAISHA:

REDUCED HOUSEHOLD FOOD INSECURITY*



*Weiser & Cohen, *AIDS*, 2015

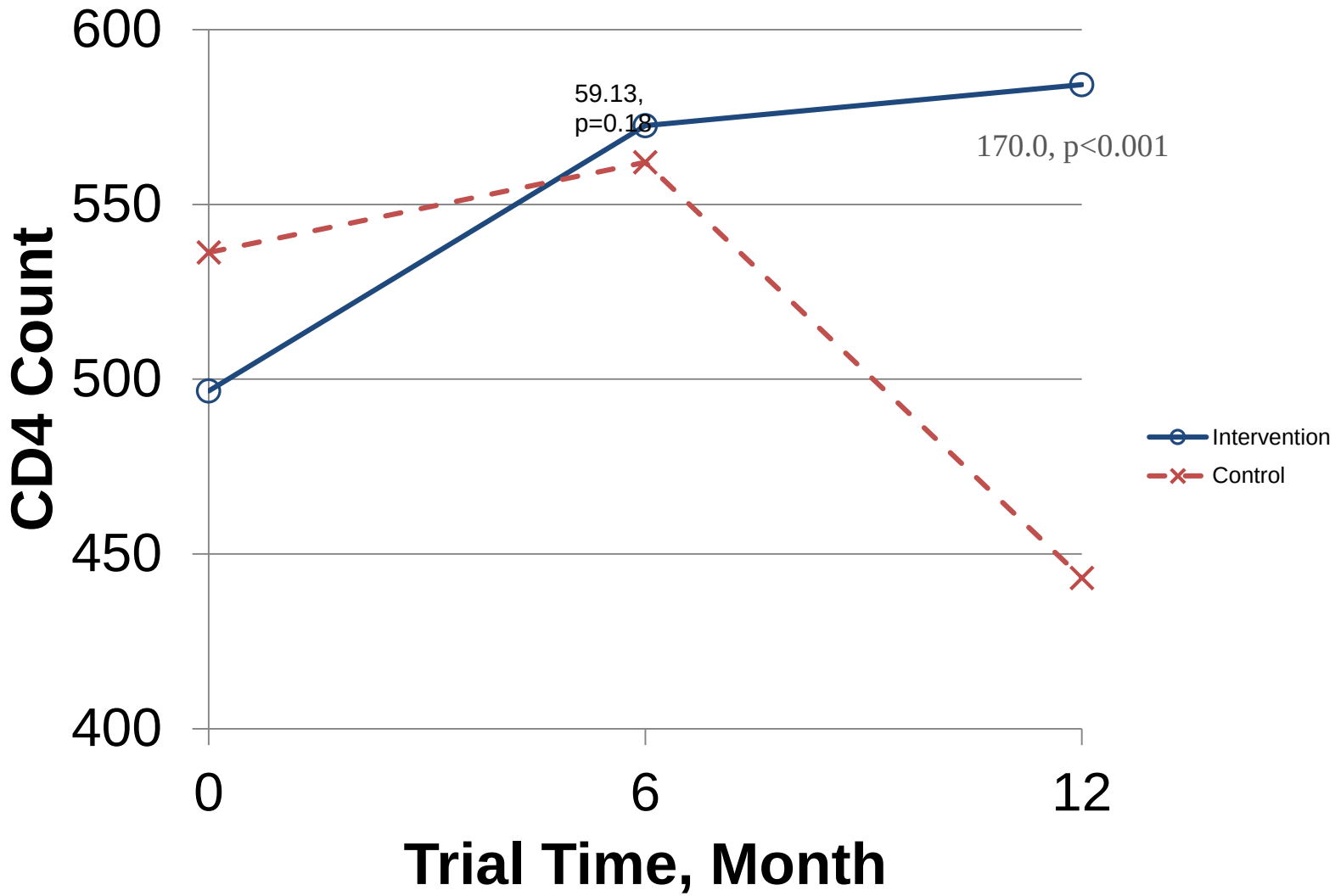
SHAMBA MAISHA:
INCREASED VIRAL SUPPRESSION



*Weiser & Cohen, *AIDS*, 2015

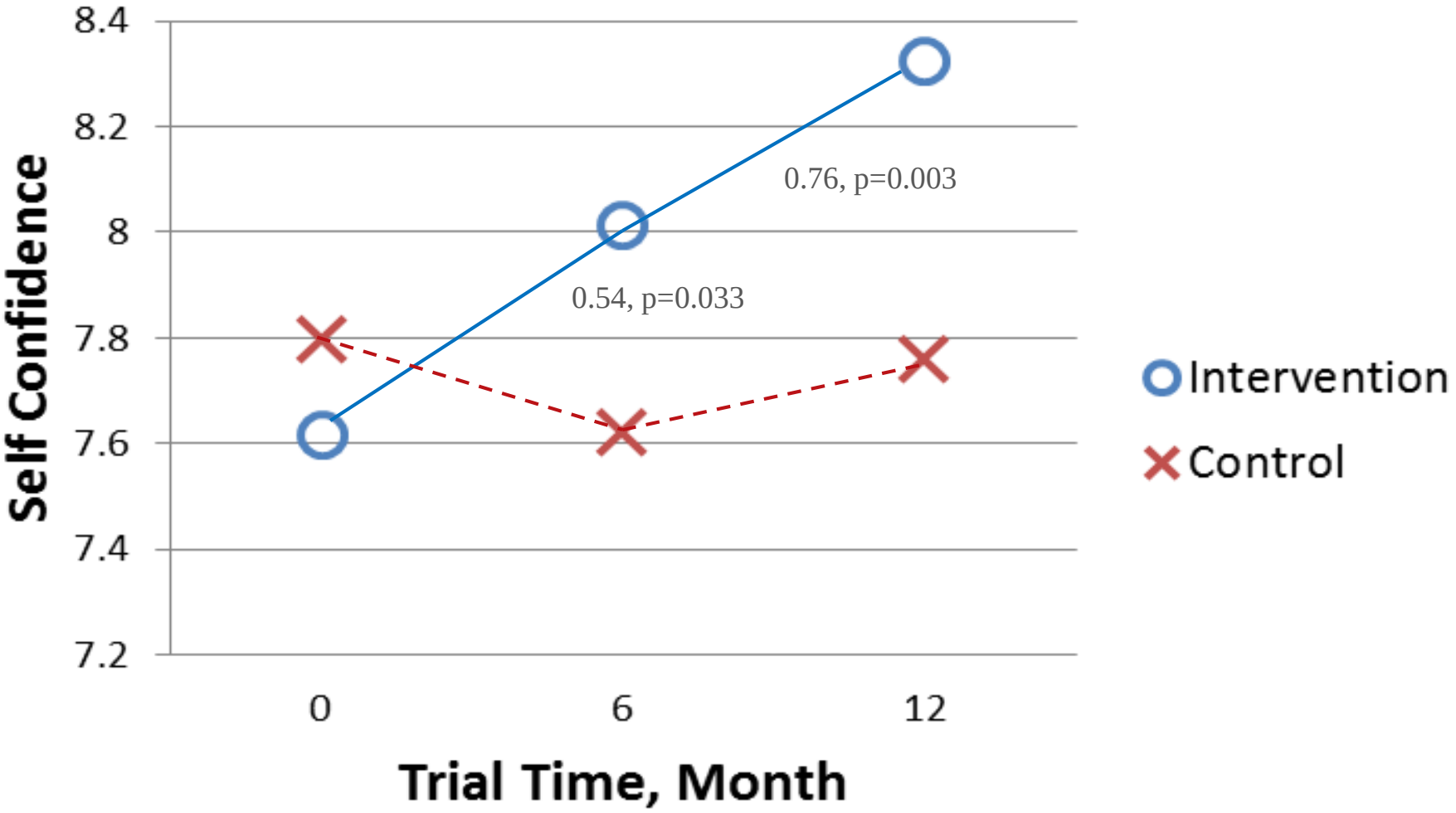
SHAMBA MAISHA:

INCREASED CD4 COUNT



Weiser & Cohen, *AIDS*,2015

SHAMBA MAISHA:
INCREASED SELF CONFIDENCE



Mechanisms: *Shamba Maisha*

Nutritional	Mental Health	Behavioral
"I think I have put on some weight since it started! Because I have been eating better ....In fact, the other day a woman was telling me nowadays my face looks healthy and so on (laughs). And its only me who knows the secret to it - its because I am surrounded by vegetables!"	*"It has given me hope and will to do my things. Not like before, when I used to be hopeless and scared. I also have the will to go about my duties and farm from which I get food and money thus living like any other person."*	*"I find getting to clinic to be a little easier because now I am able to get money for my fare to the clinic when my time to go to the clinic comes. I get the money from the farm produce."* "Through the vegetables... now I am able to take my medication as required....When one is on ARVs you are required to eat and for now even if we have no other food we rely of these vegetables because they are always there.... "

Weiser et al. , *AIDS and Behavior*, 2017

QUALITATIVE RESULTS

REDUCED VIOLENCE

I used to be violent... The violence would mostly relate to money issues and this is the root cause in many homes... but right now she manages the farm and takes it as hers...Now she has some few coins in the pockets and if I need some money...I can always ask her. ***So it has taken care of some form of domestic violence to some very big extent.***

(Male, 41 years old)

Zakaras et al., Arch Sex Behavior, 2017

Shamba Maisha (MH107330-01)

Key Questions

- **What is the impact of a multisectoral agricultural and finance intervention on HIV clinic outcomes?**
- **What are the pathways through which the multisectoral intervention may improve HIV health outcomes?**
- **What is the cost-effectiveness of the intervention?**
- **What is the best way to scale up the intervention?**

Intervention

a) Finance loan (~$175)
b) Agricultural implements: human-powered water pump, seeds, fertilizers and pesticides; and
c) Education in financial management and sustainable farming practices.

8 communities
44 participants each

Standard of Care

8 communities
44 participants each

Health Outcomes
- **Viral Suppression**
- CD4 Count
- Physical Health Status
- WHO stage
- Hospitalizations

Food Security & Household Income through these pathways:
- Nutritional
- Behavioral
- Mental Health
- Empowerment

URBAN GARDENING: VALLEY VERDE

Urban garden intervention for individuals living with HIV or diabetes/pre-diabetes, San Jose

- 45 person qualitative study
- Intervention improved diet, exercise, stress/mental health, weight control, and management of chronic diseases

Mechanisms: Valley Verde Formative Research

Nutritional	Mental Health	Behavioral
"My family has lost weight. We're cooking new things, losing weight, feeling healthier. We got blood pressures down. My oldest [daughter] was at risk for childhood diabetes. That's gone.... *"It is good to eat healthy. I mean, more than anything organic because that is what I was noticing the other day, my wife has not gone to the doctor since then [starting the garden]. That tells you a lot. It is a big change."*	*"Having the garden has gotten me through some pretty tough times. There were times that were very stressful for me and it's like therapy. I got out there and I just garden and I plant. I find it very therapeutic and I'm really grateful that I have two plots."* *The whole health of the house has changed... It's been all-around healthy – mind, body, soul healthy."*	*"We do more [exercise] because before we would just finish dinner and sit down and watch TV, and now we don't. Now we go outside and cut the grass that's on the side, clean up the garden, so when we come back in we're already tired. We have to prepare the soil, pull weeds, dig... when we finish we're sweating."*

TAKE HOME POINTS

- FI worsens HIV outcomes along entire cascade of care
- FI interventions can reverse the cycle and improve health
- Improving FI can address multiple health problems simultaneously
- Consider environmentally sustainable approaches

ACKNOWLEDGEMENTS

Many Great Collaborators
(Too many to list)

Funders:
NIMH, NIDDK, CDC, Kaiser Community Benefits, UCSF CFAR, Hellman Family Foundation, California HIV/AIDS Research Program, Project Open Hand, SF Department of Public Health

Economic Approaches to Strengthening the HIV Prevention & Care Cascade

Sandra McCoy, PhD MPH

October 25, 2017

Social and Behavioral Science Research Network National Scientific Meeting

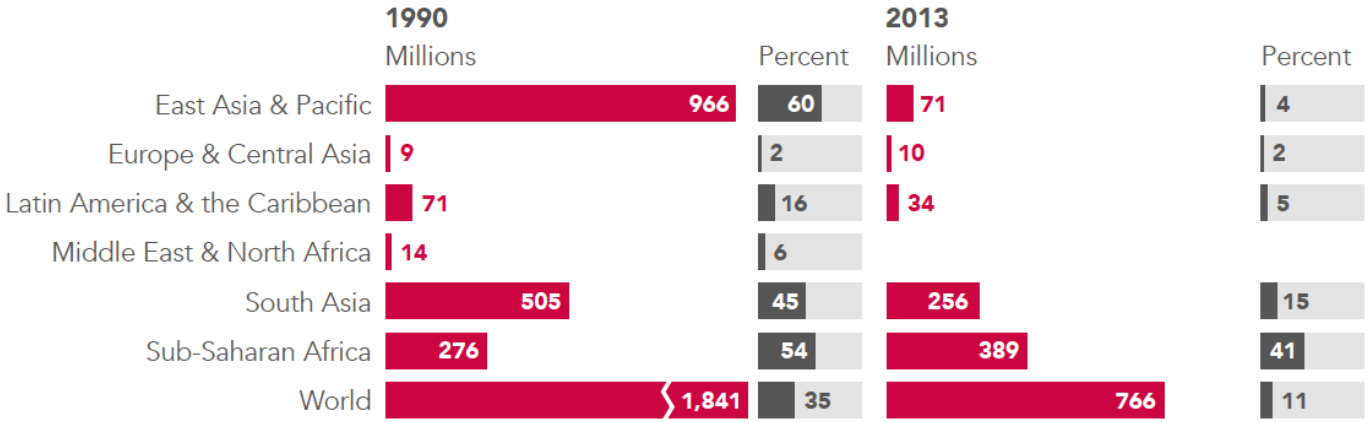
Berkeley School of Public Health

Outline

1. Landscape of economic approaches
2. Potential for impact
3. Evidence gaps

Although the extreme poverty rate has declined, SSA now accounts for half the world's extreme poor

Number and share of population living on less than $1.90 a day (2011 purchasing power parity or PPP) (%), 1990 and 2013



Note: For this indicator, regional aggregates exclude certain high income countries (World Bank Group. Poverty and Shared Prosperity 2016: Taking on Inequality. Washington, DC: World Bank., p. 49). 2013 estimates for Middle East and North Africa are not shown because survey coverage is too low.

Source: World Bank PovcalNet (http://iresearch.worldbank.org/PovcalNet/); WDI (SI.POV.DDAY).

Extreme Poverty Coping Strategies

Minor Coping

- Selling productive assets
- Seeking wage labor
- Migrating for work
- Borrowing
- Reducing spending and food consumption
- Drawing on social assets

Moderate Coping

- Selling productive assets
- Further reducing spending and food consumption
- Borrowing at high rates

Extreme Coping

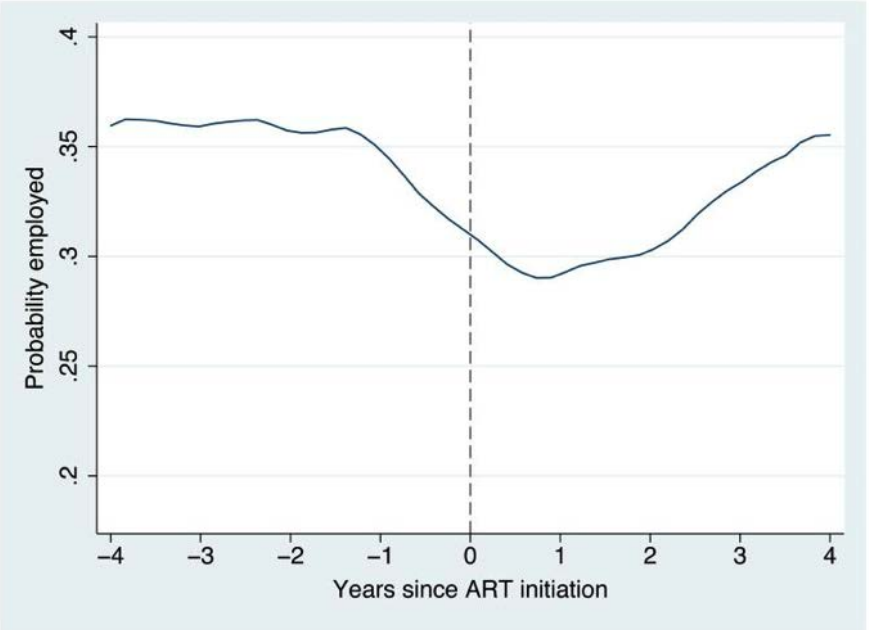
- Dependence on charity
- Breaking up household
- Migrating under distress
- Going without food

Source: LIFT II Livelihood and Food Security Technical Assistance

Likelihood of employment, before and after ART, Kwazulu-Natal, South Africa

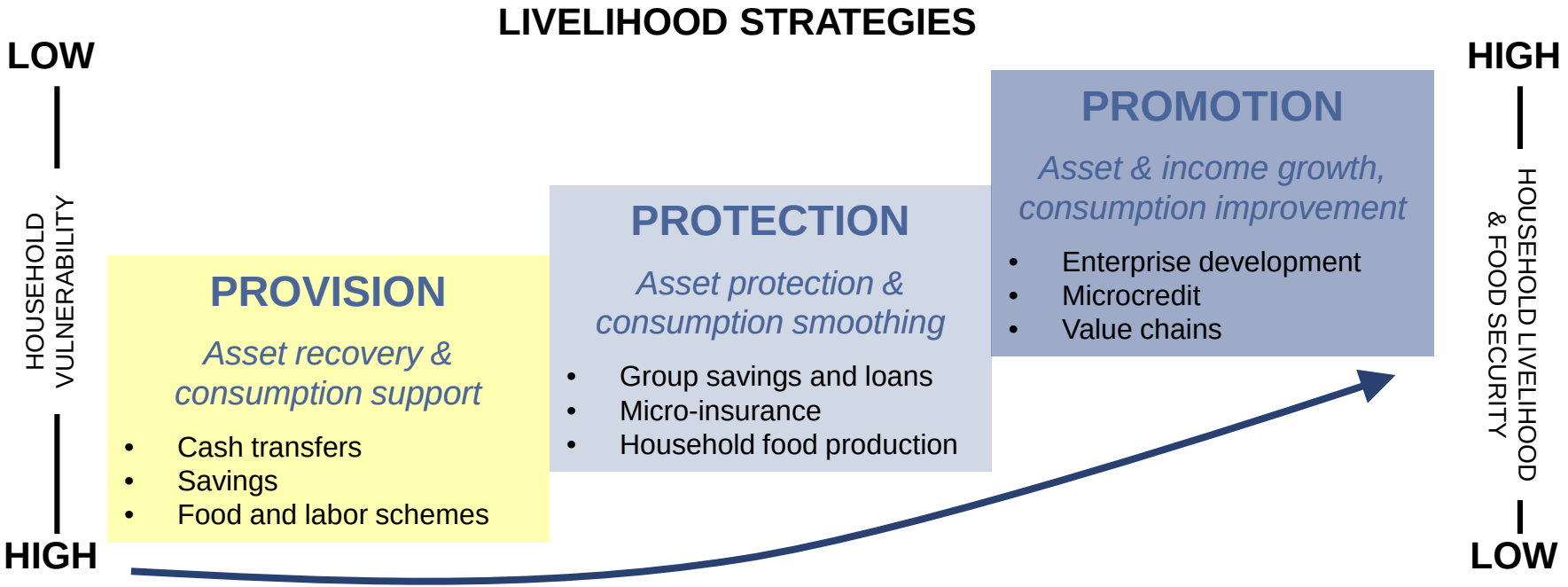
- Clinical data from >2000 patients linked to ten years of longitudinal SES data from a community-based cohort of >30,000 adults

- Four years after the ART initiation, employment had recovered to ~90% of baseline rates 3-5 years before ART



Source: Jacob Bor, Frank Tanser, Marie-Louise Newell, and Till Bärnighausen. Health Aff (Millwood). 2012 Jul; 31(7): 10.1377/hlthaff.2012.0407.

Livelihood & Food Security Conceptual Framework



Source: LIFT II Livelihood and Food Security Conceptual Framework, FHI 360

Outline

1. Landscape of economic approaches
2. **Potential for impact**
3. Evidence gaps

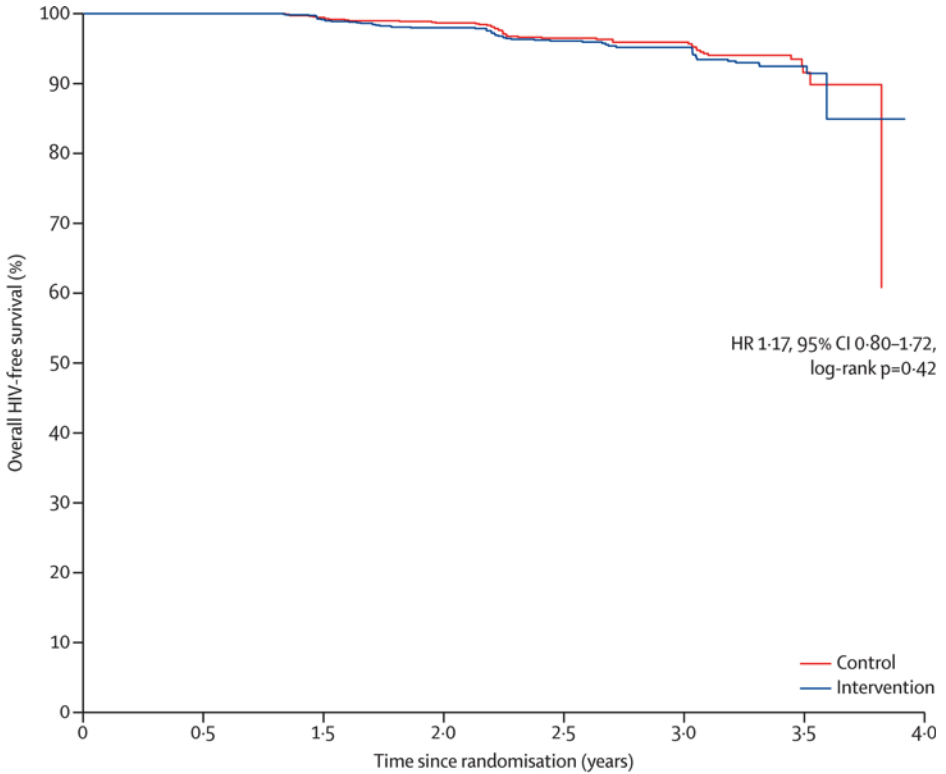
Potential Impact Pathways

- **Livelihood support, cash transfers, and asset transfers** could help overcome economic constraints either though an income effect, price effect, or both
- **Education, training, and employment support** may increase participation in the labor market
- **Microcredit and other financial inclusion programs** (e.g., savings programs) relax access to credit markets and/or increase access to other affordable financial products and services
- **Cash or in-kind incentives** can also motivate behavior change by counteracting systematic biases or shortcuts (in addition to income & price effects)

HPTN 068

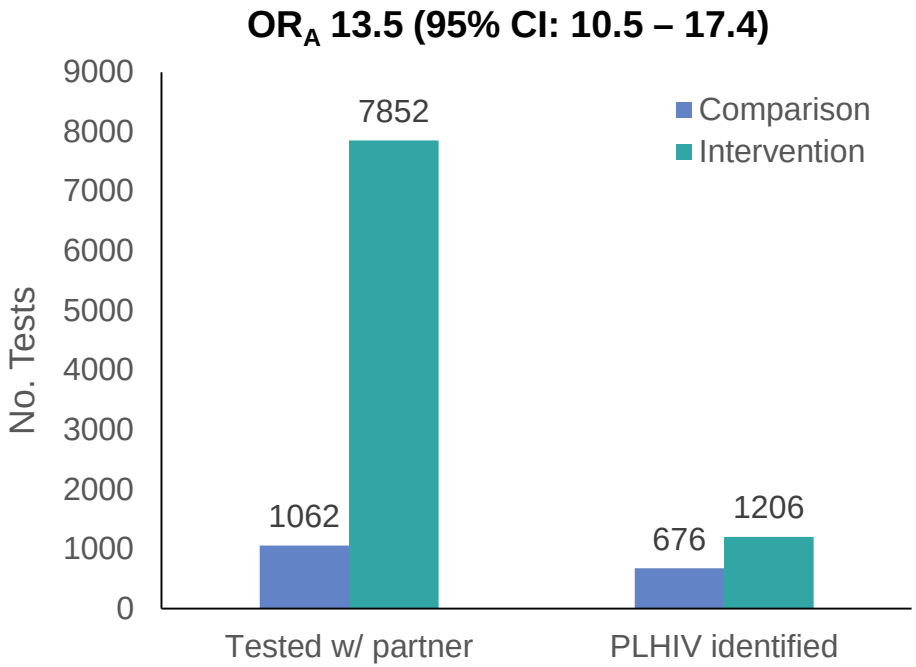
- South Africa
- 2537 girls aged 13–20 years enrolled in school grades 8–11
- Monthly cash transfer conditional on school attendance (≥80% of school days per month) versus no cash transfer
- Annual follow-up visits at 12, 24, and 36 months
- Primary outcome: HIV incidence

HIV-free survival by treatment assignment of young women in Agincourt, South Africa, 2012–15



Pettifor A, et al. Lancet Glob Health. 2016 Dec;4(12):e978-e988. doi: 10.1016/S2214-109X(16)30253-4. Epub 2016 Nov 1.

Incentives for Couples HIV Testing



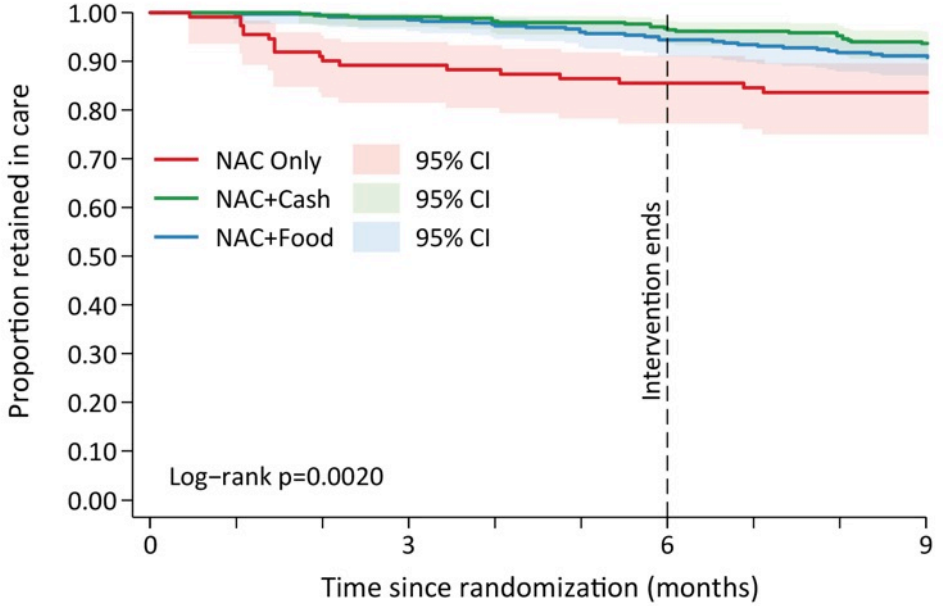
A ~$1.50 incentive resulted in 2.2 additional PLHIV identified per day (95% CI: 1.1-3.2, 3.5 vs. 5.6 PLHIV/day).

Sibanda E., et al. Lancet Glob Health. 2017 Sep;5(9):e907-e915. doi: 10.1016/S2214-109X(17)30296-6.

Afya Study

- Tanzania
- Food insecure ART initiates randomized to monthly cash transfer, food basket, or standard of care (NAC)
- ≥6 months of support
- Primary outcomes: LTFU and ART adherence at 6 and 12 months

Kaplan-Meier curve of the proportion of participants in care over time, stratified by study arm (nutrition assessment and counseling (NAC) plus cash or food transfers)[a]



Number at risk

NAC Only	112	98	90	86
NAC+Cash	346	340	323	294
NAC+Food	342	320	292	272

McCoy SI, *et al*. AIDS 2017;31:815–825

ITT Results: ART Adherence

Outcome	Overall (n=800)	Study group			Between-group difference[a] (95% CI)		
		NAC only (n=112)	NAC + Cash (n=346)	NAC + Food (n=342)	NAC + Cash vs. NAC only	NAC + Food vs. NAC only	NAC + Cash vs. NAC + Food
Adherence to ART (6 months: end of intervention period)							
MPR≥95%[b]	79.5%	63.4%	85.0%	79.2%	21.6 (9.8, 33.4)**	15.8 (3.8, 27.9)**	5.7 (-1.2, 12.7)
Adherence to ART (12 months: 6 months after intervention has ended)							
MPR≥95%[b]	67.5%	55.4%	74.9%	64.0%	19.5 (6.9, 32.1)**	8.7 (-4.2, 21.5)	10.8 (2.5, 19.2)**

ART: antiretroviral therapy; MPR: medication possession ratio; CI: confidence interval; NAC: nutrition assessment and counseling
* P<0.05 **P<0.01

a. Unadjusted intent-to-treat estimate using a Wald test and Bonferroni's correction for multiple comparisons.
b. MPR is the proportion of time an individual is in possession of ≥1 ART dose. MPR≥95% is the proportion of patients with MPR ≥95% during the 0-6 or 0-12 month interval.

McCoy SI, *et al*. AIDS 2017;31:815–825

Pathways to Better Adherence

In-depth interviews revealed that the incentives acted through three primary pathways to increase adherence:

1. Incentives addressed competing needs and offset opportunity costs
2. They increased motivation via a price effect, and
3. They alleviated stress and anxiety, a mental health pathway supported by conceptual models and empirical data (Weiser SD, 2011; Nel A, 2011)

Source: Czaicki NL, Mnyippembe A, Blodgett M, Njau P, McCoy SI. AIDS Care. 2017 Apr 11:1-9

Outline

1. Landscape of economic approaches
2. Potential for impact
3. **Evidence gaps**

Comprehensive Evidence Review

- Goal: Systematically consolidate the evidence linking household economic strengthening interventions to HIV outcomes

- Led by Mandy Swann, USAID-funded Accelerating Strategies for Practical Innovation & Research in Economic Strengthening (ASPIRES), FHI360

Swann, M. (2017, February). Economic Strengthening for HIV Outcomes Evidence Review. Paper presented at the HES Across the HIV Cascade Workshop, Washington, DC. FHI360/ASPIRES

Economic Strengthening Interventions

- Unconditional & conditional cash transfers
- Financial incentives
- Asset transfers
- Transportation assistance
- Food aid/assistance
- Savings (individual & group)
- Micro-insurance
- Microcredit
- Financial education/training
- Training (vocational/entrepreneurial)
- Income generation
- Employment & education support

HIV outcomes

- Prevention:
  - Biomarkers
  - Risk behaviors
  - GBV/IPV
- Onward transmission
- Testing/diagnosis
- Linkage to HIV care
- Retention in care
- ART adherence
- Morbidity
- Mortality

Swann, M. (2017, February). Economic Strengthening for HIV Outcomes Evidence Review. Paper presented at the HES Across the HIV Cascade Workshop, Washington, DC. FHI360/ASPIRES

Evidence Map

Direction of Effect

- Positive
- Negative
- Mixed
- Null

Quality Ranking

- Low
- Medium
- High
- Not Assessed (N/A)

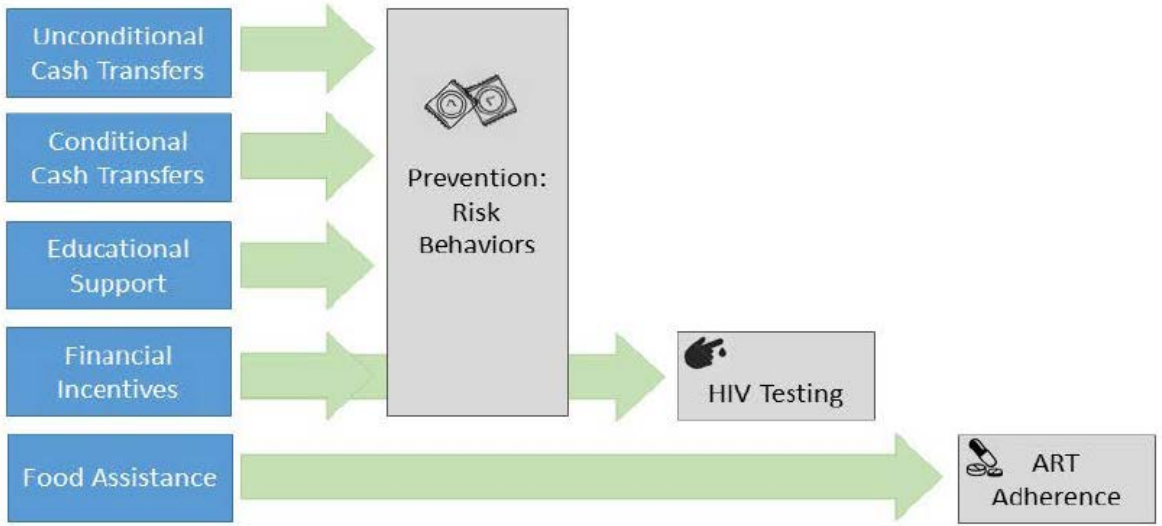
Independent or Combined Effects

- Independent
- Combined
- Both independent and combined reported

Swann, M. (2017, February). Economic Strengthening for HIV Outcomes Evidence Review. Paper presented at the HES Across the HIV Cascade Workshop, Washington, DC. FHI360/ASPIRES

Findings (1)

- The strongest and most conclusive evidence comes from ‘provision’ interventions



Swann, M. (2017, February). Economic Strengthening for HIV Outcomes Evidence Review. Paper presented at the HES Across the HIV Cascade Workshop, Washington, DC. FHI360/ASPIRES

Findings (2)

- Far less conclusive evidence for ‘protection’ and ‘promotion’ interventions, including:
  - Vocational and entrepreneurial training and microcredit for prevention & care
  - Weak and conflicting evidence for income-generating activities and savings
- Little data to understand the influence of context

Swann, M. (2017, February). Economic Strengthening for HIV Outcomes Evidence Review. Paper presented at the HES Across the HIV Cascade Workshop, Washington, DC. FHI360/ASPIRES

Recommendations

- Economic approaches often implemented as part of an integrated package, but contributions of components unknown
- Greater rigor needed in measurement:
  - Prevention studies need strong biomarker data (ideally incidence)
  - Better measurement of self-reported behavioral outcomes
  - Greater standardization of indicators across studies
- Longer studies needed to durability and sustainability
- Better documentation of the programs or interventions

Swann, M. (2017, February). Economic Strengthening for HIV Outcomes Evidence Review. Paper presented at the HES Across the HIV Cascade Workshop, Washington, DC. FHI360/ASPIRES

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LSHTM
- Dr. Suneetha Kadiyala

FHI360
- Ms. Mandy Swann

Berkeley School of Public Health

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From Treatment To Healing

The Promise of Trauma-informed Primary Care to End AIDS

Centers for AIDS Research
Social and Behavioral Sciences Research Network
11th National Scientific Meeting
"Getting to Zero and Ending the HIV Epidemic"
San Francisco October 25, 2017

Edward Machtinger, MD
Professor of Medicine
Women's HIV Program
University of California, San Francisco
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Women's HIV Program AT UCSF

Objectives

1. Discuss the impact of trauma on the health and wellbeing of PLHIV;

2. Describe a practical model of trauma-informed primary care (TIPC) that facilitates healing from past abuse, prevents re-victimization, and informs healthier coping strategies;

3. Identify TIPC as a key element of successful HIV treatment and prevention

Photo by Lynnly Labovitz; used with artist and patient permission

WHP Project Team

Clinical Implementation Team:

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MD, Professor of Medicine

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LCSW, PhD, Director of Trauma-Informed Care

Beth Chiarelli
LCSW, Social Work Lead

Esther Chavez
Social Work Associate

Roz De Lisser
Psyche NP; Lead, HERS Substance Use Program

Partner Organizations in Clinic:

South Van Ness Behavioral Health Services
Family Case Management/therapy

Catholic Charities/Rita de Casia
Family Case Management

Medea Project: Theater for Incarcerated Women
Expressive Therapy Intervention

Positive Women's Network-USA (PWN-USA)
Peer-based Leadership and Empowerment Intervention

WHP Research Team:

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Rhodessa Jones
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RN, Administrative Nurse Manager

Vishalli Loomba
Program Coordinator

whp Women's HIV Program AT UCSF

The Women's HIV Program at UCSF

Among first programs in country for women living with HIV

Female-focused services provided in a "one-stop shop"

- Primary care
- Pharmacy program
- Ob/GYN
- Therapy / Psychiatry
- Social work
- Case management
- Partner agencies
- Breakfast

Patients

- Mostly African American or Latina
- 15% transgender women
- 15-71 years old
- Marginally housed, low income
- Medically and psycho-socially complex

Women's HIV Program AT UCSF

Recent Deaths at WHP

1. Rose *murder*
2. Amy *murder*
3. Patricia *suicide*
4. Regina *suicide*
5. Vela *suicide*
6. Iris *addiction/overdose*
7. Mary *addiction/organ failure*
8. Nadine *addiction/lung failure*
9. Lilly *pancreatic cancer*
10. Pebbles *non-adherence*

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Women's HIV Program AT UCSF

Trauma

"… an event, series of events, or set of circumstances [e.g., physical, emotional and sexual abuse; neglect; loss; community violence, structural violence] that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual's functioning and physical, social, emotional, or spiritual well-being".

http://www.samhsa.gov/traumajustice/traumadefinition/definition.aspx

A few more important definitions

Complex Trauma: repeated trauma, physically or emotionally (e.g., repeated childhood physical and/or sexual abuse, witnessing ongoing IPV, experiencing long-term IPV)

PTSD: includes 4 types of symptoms: 1) re-experiencing of the traumatic event(s); 2) avoidance of situations that remind you of the event; 3) negative changes in the way you think about yourself, other people or the world, and 4) feeling "keyed up".

Complex PTSD: Includes all of the symptoms of PTSD + trouble regulating and handling emotions and relationships, and feelings low self-worth and powerlessness

Cloitre, M., et al., *The ISTSS Expert Consensus Treatment Guidelines for Complex PTSD in Adults*. 2012.

Rates of trauma and PTSD in WLHIV are much higher

Meta-analysis of all studies among US WLHIV

Categories	Number of Studies	Pooled *n*	Prevalence (%)	95% Confidence Interval	Reference Prevalence
Intimate Partner Violence	8	2285	**55.3**	36.1 - 73.8	**32.9**
Childhood Sexual Abuse	7	3013	**39.3**	33.9 - 44.8	**16.2**
Childhood Physical Abuse	6	1582	**42.7**	31.5 - 54.4	**22.9**
Childhood Abuse Unspecified	2	232	**58.2**	36.0 - 78.8	**31.9**
Lifetime Sexual Abuse	8	1182	**61.1**	47.7 - 73.8	**12.0**
Lifetime Abuse Unspecified	6	1065	**71.6**	61.0 - 81.1	**39.0**
Recent PTSD	6	499	**30.0**	18.8 - 42.7	**5.2**

29 studies met our inclusion criteria, resulting in a sample of 5,930 individuals.

Machtinger EL, Wilson T, Haberer J, Weiss, D. ***Psychological trauma in HIV-positive women: a meta-analysis.*** *AIDS and Behavior. January 17, 2012*

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*National Comorbidity Survey Replication, 2005

Machtinger EL, Wilson T, Haberer J, Weiss, D. ***Psychological trauma in HIV-positive women: a meta-analysis.*** *AIDS and Behavior. January 17, 2012*

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Machtinger EL, Wilson T, Haberer J, Weiss, D. ***Psychological trauma in HIV-positive women: a meta-analysis.*** *AIDS and Behavior. January 17, 2012*

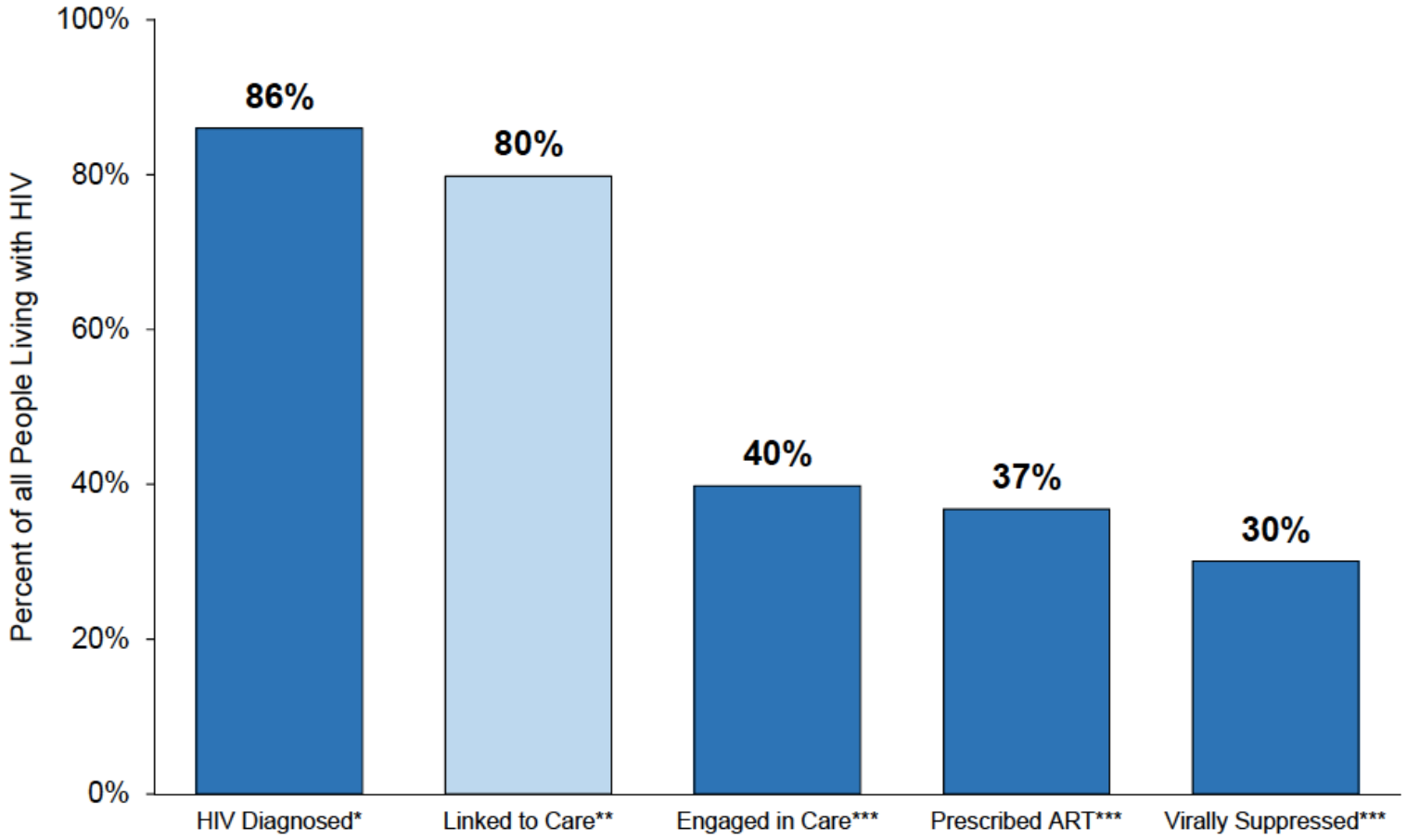
Women's HIV Program AT UCSF

Recent Trauma ➔ 4x the rate of ART Failure

Potential factors	Detectable viral load on ART
Age (increase of one year)	OR1.0 (0.93-1.1; p=.96)
African-American	OR1.8 (0.6-6.1; p=.32)
Transgender	OR0.9 (0.2-3.2; p=.84)
CD4 count <200 cells/ml	OR2.1 (0.7-6.5; p=.20)
<90% ART adherence	OR1.0 (0.3-3.6; p=.97)
Depression	OR0.8 (0.3-2.7; p=.78)
Low self-efficacy	OR1.7 (0.4-8.1; p=.50)
Low social support	OR2.2 (0.6-6.9; p=.18)
Drug use	OR1.1 (0.4-3.4; p=.88)
Lifetime coerced sex	OR1.2 (0.4-3.8; p=.78)
Recent coerced sex	OR1.8 (0.3-12.0; p=.53)
Lifetime trauma	OR1.2 (0.3- 4.5; p=.77)
Recent trauma	**Odds ratio 4.3 (1.1-16.6; p=.04)**

Machtinger EL, et al. Recent trauma is associated with antiretroviral failure and transmission risk behavior among HIV-positive women and female-identified transgenders AIDS and Behavior. March 12, 2012

The HIV Care Continuum in the US, 2011



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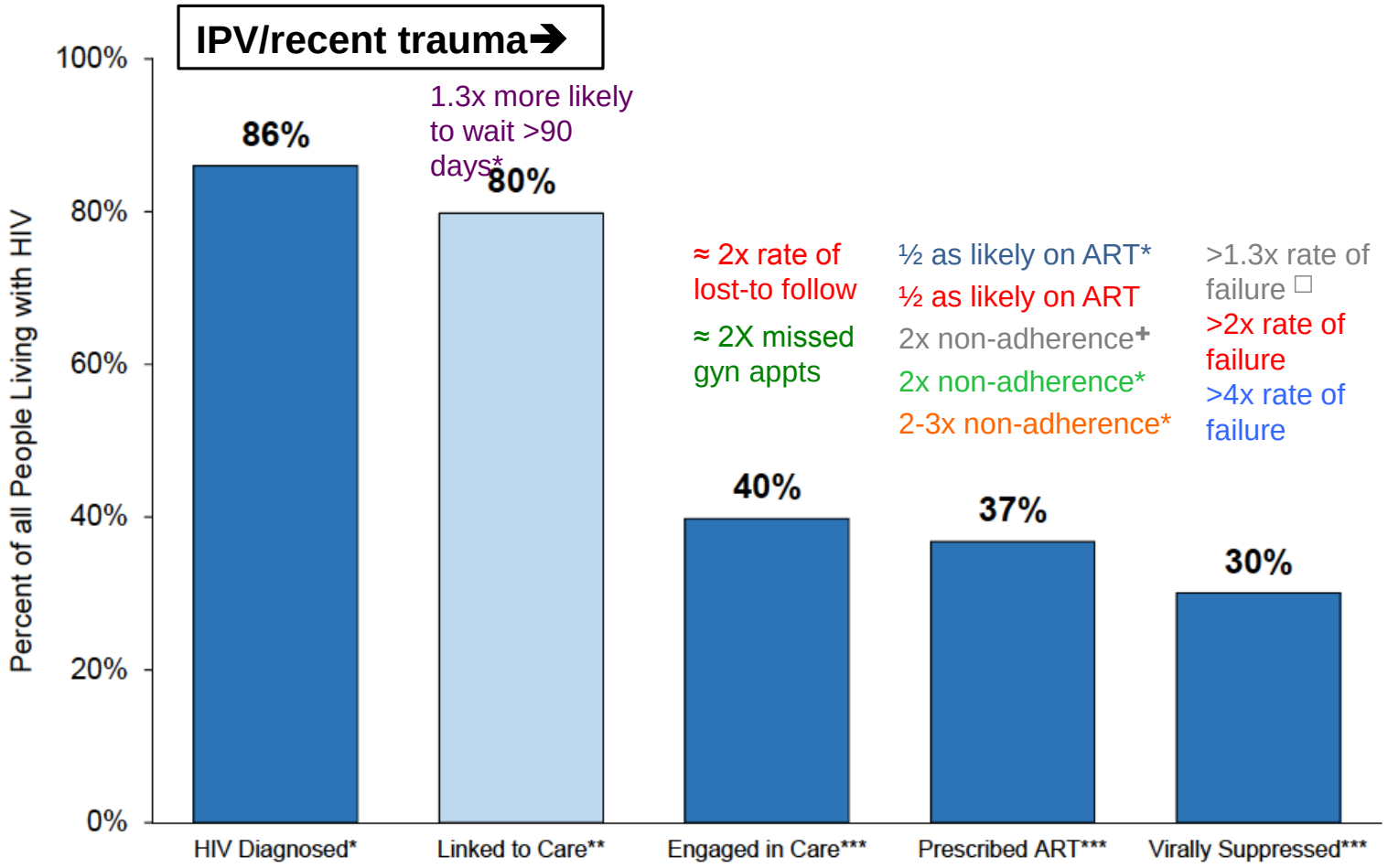

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Siemieniuk,RA, et al. J Acquir Immune Defic Syndr. 2013

Illangasekare, S., et al. *Women's Health Issues.* 2012

Kalokhe, A.S., et al. *AIDS Patient Care and STDs*. 2012*

Hatcher, A.M., et al. AIDS. 2015+

Mugavero, MJ, et al. Psychsomatic Medicine. 2009.*

Lesserman, J. et al. AIDS PATIENT CARE and STDs. 2008*

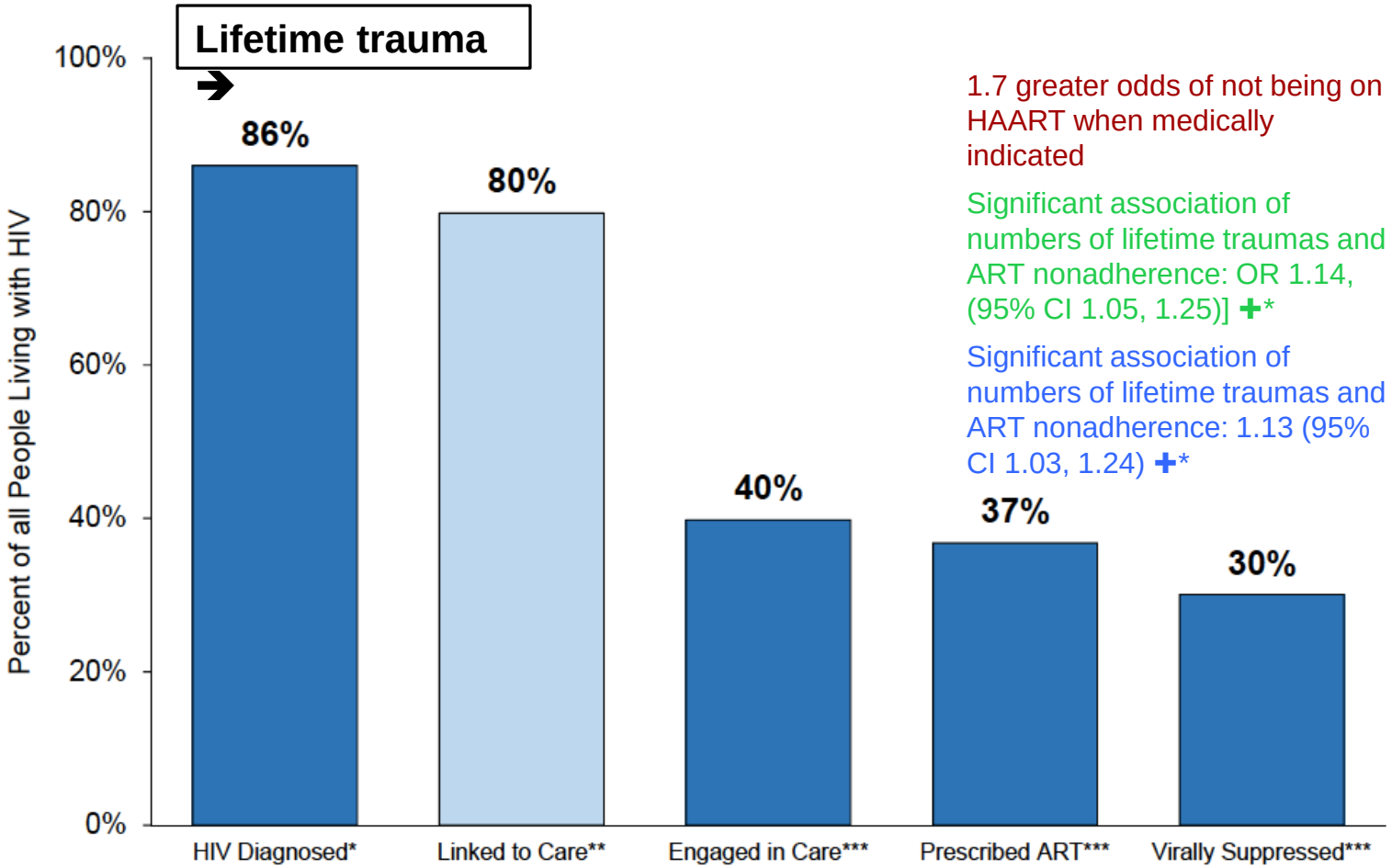
Machtinger EL, et al. AIDS and Behavior. 2012

* Includes both men and women

✚ Meta-analysis

Women's HIV Program AT UCSF

The HIV Care Continuum in the US, 2011



1.7 greater odds of not being on HAART when medically indicated

Significant association of numbers of lifetime traumas and ART nonadherence: OR 1.14, (95% CI 1.05, 1.25)] ✚*

Significant association of numbers of lifetime traumas and ART nonadherence: 1.13 (95% CI 1.03, 1.24) ✚*

Cohen, MH, et al. Medically Eligible Women Who Do Not Use HAART: The Importance of Abuse, Drug Use, and Race. Am J Public Health.2004;94:1147–1151)

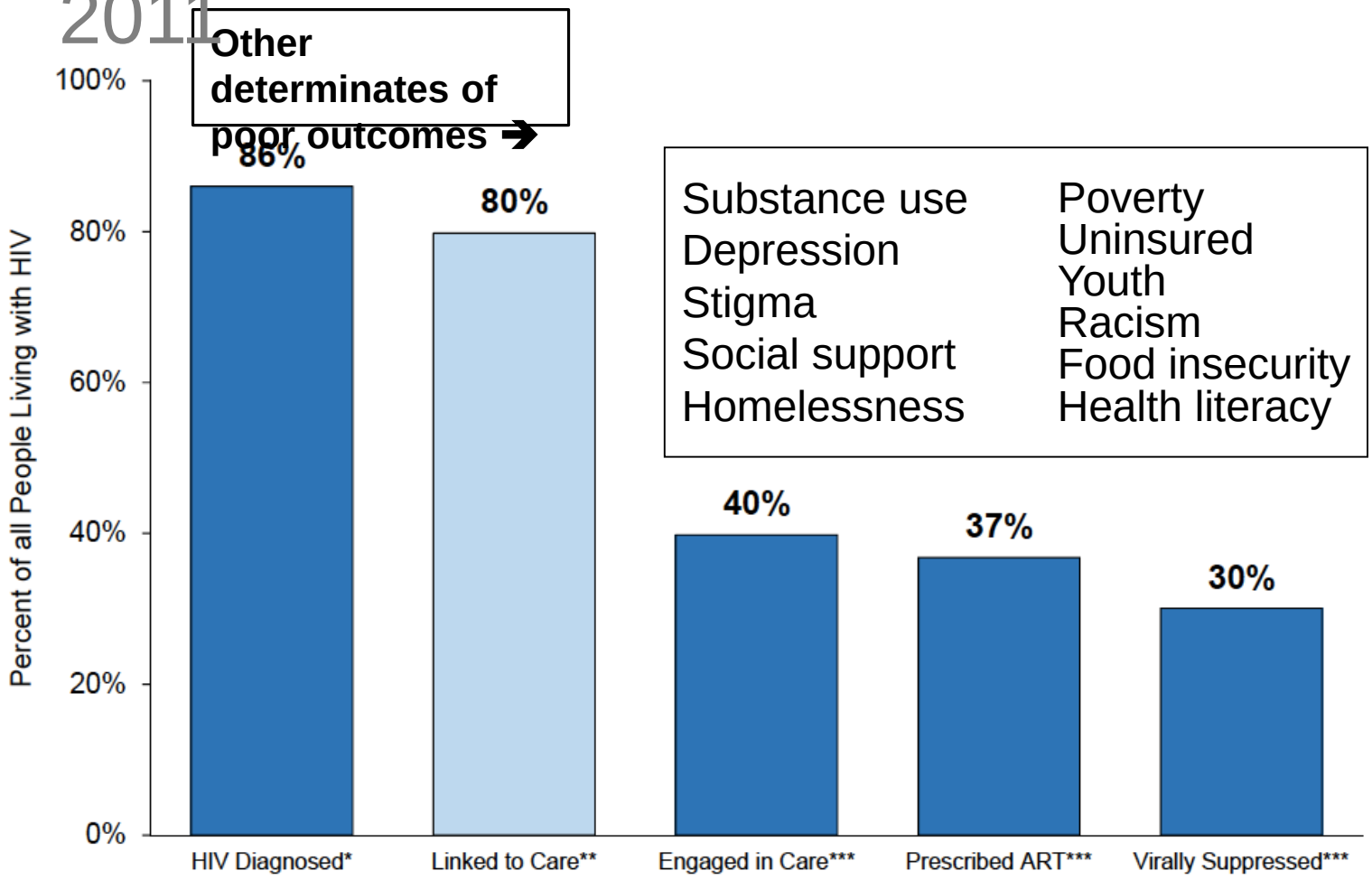
Mugavero M, et al. Barriers to antiretroviral adherence: the importance of depression, abuse, and other traumatic events. AIDS patient care and STDs. 2006 Jun;20*

Pence BW, et al. Childhood trauma and health outcomes in HIV-infected patients: an exploration of causal pathways. Journal of acquired immune deficiency syndromes. 2012 Apr 1;59(4):409-16.

* Includes both men and women
✚ bivariate data; association also significant on multivariate analysis

Women's HIV Program AT UCSF

The HIV Care Continuum in the US, 2011



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SUD and depression more effectively treated if trauma is addressed

ELSEVIER

Journal of Substance Abuse Treatment 42 (2012) 65–77

Journal of Substance Abuse Treatment

Regular article

Integrated treatment programs for individuals with concurrent substance use disorders and trauma experiences: A systematic review and meta-analysis

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Abstract

The purpose of this study was to examine the evidence of psychotherapeutic integrated treatment (IT) programs for individuals with concurrent substance use disorders and trauma histories. Electronic searches of Cochrane Central Register of Controlled Trials, MEDLINE, Web of knowledge, PubMed, PsycINFO, CINAHL, PILOTS, and EMBASE identified 17 IT trials (9 controlled trials). Both narrative review and meta-analysis indicate that IT effectively reduces trauma symptoms and substance abuse from pretreatment to longest follow-up. However, IT and nonintegrated programs appear to produce similar declines in symptoms. Methodological issues limiting the current body of work and recommendations for future research are discussed. Well-designed randomized controlled trials are clearly needed, particularly large sample studies evaluating understudied IT programs and exposure-based approaches. © 2012 Elsevier Inc. All rights reserved.

Keywords: Integrated treatment; Psychiatric comorbidity; Substance use disorders; Trauma; Meta-analysis

1. Introduction

The co-occurrence of substance use disorder (SUD) and posttraumatic stress disorder (PTSD) represents a growing area of concern for researchers, policy makers, and treatment providers. Estimates of PTSD prevalence rates among individuals presenting for SUD treatment range from 20% to 38% (Najavits, Gastfriend, et al., 1998; Reynolds et al., 2005), with lifetime prevalence rates between 30% and 52% (Back et al., 2000; Clark, Masson, Delucchi, Hall, & Sees, 2001; Reynolds et al., 2005). Histories of traumatic events (i.e., with or without PTSD diagnosis) are considerably more common and are reported by as many as 90% of some SUD samples (Brown, Stout, & Mueller, 1999).

PTSD appears to be a risk factor for later substance use. In the National Comorbidity Study, 51.9% of men and 27.9% of women with PTSD had a concurrent alcohol use disorder compared with 34.4% of men and 13.5% of women without PTSD (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Following up on the same sample, PTSD diagnosis prospectively predicted new onset of alcohol and drug dependence 10 years later (Swendsen et al., 2010). Similarly, a study of young adults without preexisting drug dependence found that individuals with PTSD experienced a nearly five-fold higher incidence of drug abuse or dependence at the 12-month follow-up compared with those who were not exposed to trauma (Reed, Anthony, & Breslau, 2007). This evidence supports a self-medication model, whereby individuals with PTSD use substances to regulate distress and other

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Treatment of Comorbid Posttraumatic Stress Disorder and Major Depressive Disorder: A Pilot Study

Reginald D. V. Nixon and Danielle M. Nearmy
Flinders University, South Australia

The efficacy of a cognitive–behavioral treatment program for individuals with comorbid posttraumatic stress disorder (PTSD) and major depression (MDD) was examined. In an uncontrolled pre- and posttreatment study, participants attended 12–16 weeks of manualized therapy incorporating behavioral activation for depression in early sessions and exposure therapy and cognitive restructuring for PTSD in later sessions. Fourteen participants (of 20) completed treatment. Results indicated a significant decrease in PTSD and depression severity between pre- and midtreatment assessment; PTSD decreased further from mid- to posttreatment. Treatment gains were maintained at 3-month follow-up; 60% of participants no longer met PTSD criteria at 3-month follow-up, and 70% no longer met MDD criteria. The clinical implications of this phased approach to treat PTSD and depression comorbidity are discussed.

Research using a wide range of trauma groups has shown that barriers to effective delivery of treatment, such as treatment dropout and a failure to engage with treatment, can often be predicted by initial levels of depression in individuals with posttraumatic stress disorder (PTSD; Bryant, Moulds, Guthrie, Dang, & Nixon, 2003; Forbes, Creamer, Hawthorne, Allen, & McHugh, 2003; McDonagh et al., 2005; Taylor et al., 2001). For example, individuals with more severe depression are more likely to drop out of treatment than those for whom the depression is less severe (Bryant et. al., 2003; McDonagh et al., 2005). It is possible that depression can make it difficult for individuals to engage with cognitive–behavior therapy (CBT), especially imaginal exposure, placing them at risk of dropout or failure to maximally benefit from treatment (Foa & Hearst-Ikeda, 1996; McDonagh et al., 2005; Taylor et al., 2001). This is consistent with emotional processing theory that holds that underengagement in exposure (as a result of depression, for example) can lead to less successful outcomes (Jaycox, Foa, & Morral, 1998). Although current CBT interventions for PTSD also significantly reduce depressive symptoms, whether this can be improved further for individuals with comorbid PTSD and depression by specifically targeting depression in therapy remains an empirical question. One intervention approach for depression, behavioral activation (BA; Jacobson et al., 1996) appears to be worth examining in this regard.

From an evidence-based perspective, BA has accumulated significant empirical support for the treatment of depression (see Dimidjian et al., 2006; Gortner, Gollon, Dobson, & Jacobson, 1998; Jacobson et al., 1996). BA is founded on the premise that avoidance behaviors serve to maintain depressive reactions by reducing one's engagement with positive reinforcers. Increasing activation and addressing behaviors such as ruminative thinking and avoidance (which discourage or interfere with activation) can reduce depression (Martell, Addis, & Jacobson, 2001). Avoidance is an especially pertinent issue in PTSD, not simply because PTSD treatments, such as exposure, target avoidance of trauma reminders, but because avoidance of trauma-relevant stimuli is considered to contribute to the maintenance of PTSD (Ehlers & Clark, 2000; Foa & Kozak, 1986). Although cognitive–behavioral therapy approaches have demonstrated effectiveness for PTSD, such approaches are accompanied by significant dropout (often in the range of 25 to 30%), and not all individuals achieve good end-state functioning (or remission) by the end of treatment (see Bradley, Greene, Russ, Dutra, & Westen, 2005, for review). From a theoretical point of view, given the putative role that avoidance plays in both depression and PTSD, and given that depression may contribute (in part) to treatment failure in individuals with PTSD, targeting of depression and avoidance patterns early in PTSD treatment may be of benefit. BA has been trialed as a stand-alone treatment for PTSD. Jakupcak et al. (2006) conducted a pilot study utilizing BA to target PTSD and depression in veterans ($N = 11$), although only modest reductions in PTSD symptomatology were obtained at posttreatment. The authors acknowledge that a lack of a comparison group, the lack of blind assessors, and the fact that medication changes took place during enrollment in the study, may have limited the results. Curiously, BA failed to significantly reduce depression, with the authors suggesting that participant

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DOI: 10.1002/jts.20654

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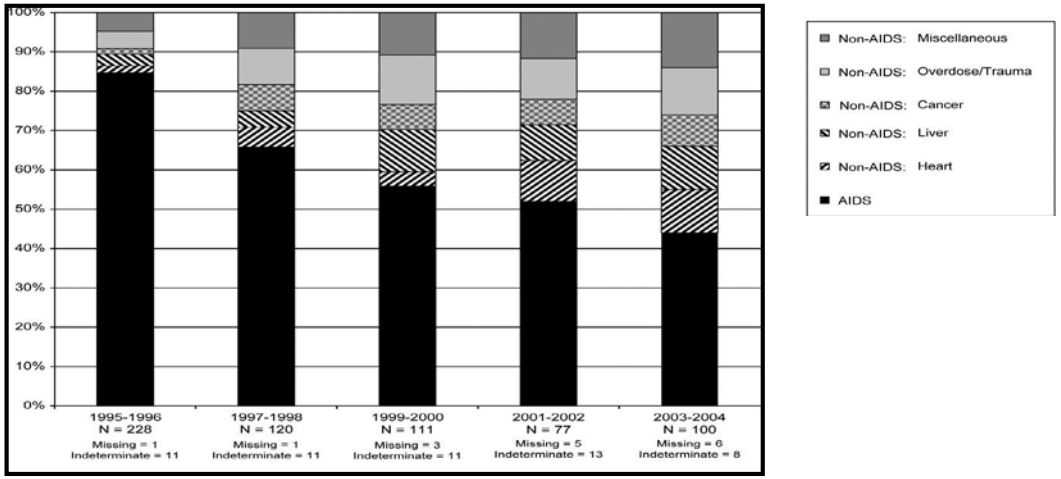
Nixon, DV, et al. Treatment of comorbid posttraumatic stress disorder and major depressive disorder: A pilot study Journal of Traumatic Stress Vol 24, Issue 4, pages 451–455, August 2011

Predictors of Mortality in WLHIV over time

Women's HIV Program at UCSF¶

- Only 3/19 (16%) deaths over past decade were due to HIV/AIDS.
- Others: substance abuse (5), suicide (3), violence (2), cancer (2), lung disease (1), car accident (1), or unknown (2).

Women's Interagency HIV Study❖



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✸ Personal Communication, Kathleen Weber, Women's Interagency Study, October 9, 2015

¶ Cocohoba, J, Chiarelli, B, Machtinger, E.10th Conference on HIV Treatment and Prevention Adherence 2015

Women's HIV Program AT UCSF

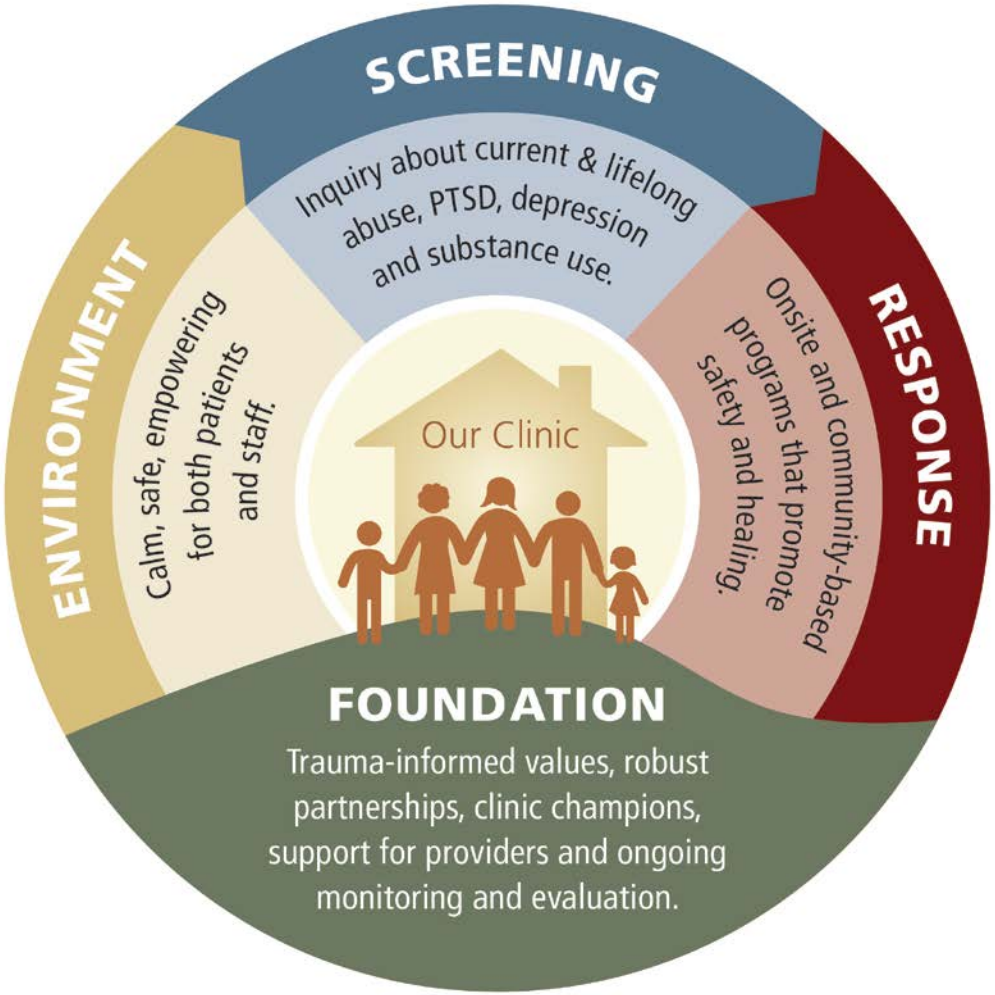
A Model Based on Evidence and Experience

- Expert meeting
- Follow-up consultations
- Literature review
- Identified existing evidence-based strategies to use as building blocks

POSITIVE WOMEN'S NETWORK USA

Women's HIV Program AT UCSF

Trauma-informed Primary Care



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POSITIVE WOMEN'S NETWORK USA

whp Women's HIV Program AT UCSF

Healing from Lifelong Trauma: Improving Damaged Connections

Improving Connections with Others

1. Trauma-specific individual and group therapies

2. Peer-led empowerment, support and leadership training.

Improving Physiological Connections

3. Trauma specific psychiatry and physiologic techniques

Improving Connections with Our Bodies

4. Body/Mindfulness-Focused Healing

The National Center for PTSD. http://www.ptsd.va.gov/. Last accessed February 4, 2016.
Van der Kolk, Bessel A. The **Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma.** Penguin group. New York, 2014.
Cloitre, M., et al., *The ISTSS Expert Consensus Treatment Guidelines for Complex PTSD in Adults*. 2012.

Healing from Lifelong Trauma: Improving Damaged Connections

Improving Connections with Others

1. Trauma-specific individual and group therapies

Trauma-specific cognitive behavioral therapy CBT); motivational interviewing; prolonged exposure therapy for PTSD; evidence-based multimodal programs including STAIR Narrative Therapy and Seeking Safety for co-occurring substance abuse and PTSD

2. Peer-led empowerment, support and leadership training

Leadership training by the Positive Women's Network-USA; expressive therapy with theater by the Medea Project: Theater for Incarcerated Women

Improving Physiological Connections

3. Trauma specific psychiatry and physiologic techniques

Medications for PTSD symptoms such (e.g., hyper-arousal, nightmares); medication assistant treatment (MAT) for opiate use; techniques such as EMDR

Improving Connections with Our Bodies

4. Body/Mindfulness-Focused Healing

Mindfulness-based Stress Reduction; yoga; massage; meditation

The National Center for PTSD. http://www.ptsd.va.gov/. Last accessed February 4, 2016.
Van der Kolk, Bessel A. The **Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma.** Penguin group. New York, 2014.
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“Seeking Safety” for Transgender WLHIV

Participants: 7 transgender WLHIV with recent substance use and recent or past trauma

Content: 12 *Seeking Safety* modules based on appropriateness for transgender WLHIV

Incentives: $180 for completion of 12 sessions.

Outcome Measures: PTSD symptom (PCL-C 17), alcohol and drug use (MAST-22, DAST-20), and HIV stigma (HIV Stigma Scale) scales pre and post-intervention.

	PCL-C 17		MAST		DAST		HIV Stigma	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	64	58	9	10	1	1	122	124
2	35	32	3	1	5	3	107	112
3	32	25	3	2	0	0	103	83
4	70	66	15	13	0	0	115	97
5	68	36	3	4	12	2	78	78
6	59	57	12	6	18	8	136	143
7	60	46	5	2	9	0	146	142
AVG (SD)	55.4 (15.5)	45.7 (15.3)	7.1 (4.9)	5.4 (4.5)	6.4 (6.9)	2.0 (2.9)	115.3 (22.5)	111.3 (26.5)
Percent Change (SD)	17.50%		23.90%		68.80%		3.50%	

Empson, S., Cuca, Y. P., Cocohoba, J., Dawson-Rose, C., Davis, K., & Machtinger, E. L. (2017). Seeking Safety Group Therapy for Co-Occurring Substance Use Disorder and PTSD among Transgender Women Living with HIV: A Pilot Study. *Journal of Psychoactive Drugs*, 1-8.

Trauma and PrEP

- **Impediment to adherence:** Recent trauma, past trauma and trauma-related conditions (e.g., substance use, depression, stigma…)

- **Key factor in well-being and survival:** Morbidity and mortality in high-risk populations likely greater from trauma-related conditions than from AIDS

Photo by Keith Sirchio; used with artist and patient permission

Conclusions

- Recent and past trauma are linked to poor outcomes at each stage of the HIV care continuum and to the principle causes of death among PLHIV
- Evidence-based, practical interventions exist to help people heal from and cope with trauma that can improve health outcomes on and off the care continuum
- Trauma–informed primary care is a promising model for HIV prevention because it addresses the principle causes of medication non-adherence in both HIV-positive and PreP patients
- TIPC holds the potential to transform the caregiving experience for providers, creating environments and supporting them to be healers

Photo by Lynnly Labovitz; used with artist and patient permission

Social science research insights on HIV 'universal test and treat' in the SEARCH trial

Carol S. Camlin, PhD, MPH

CFAR Social and Behavioral Science Research Network (SBSRN) National Scientific Meeting, UCSF

25 Oct. 2017

UCSF
University of California
San Francisco

SEARCH

SUSTAINABLE EAST AFRICA RESEARCH IN COMMUNITY HEALTH

SEARCH Questions

- Can ART “shut down” new HIV infections with a test and treat strategy with a streamlined care approach ?
  - What are the secondary gains? (maternal child health, TB, education, household earning power)
  - What is the best way to do it?
  - What would it cost?
- Can efficient HIV chronic care models be adapted to establish care for other chronic diseases (hypertension and diabetes)?

- 32 communities in Uganda and Kenya; N=334,512
- (NCT# 01864603)

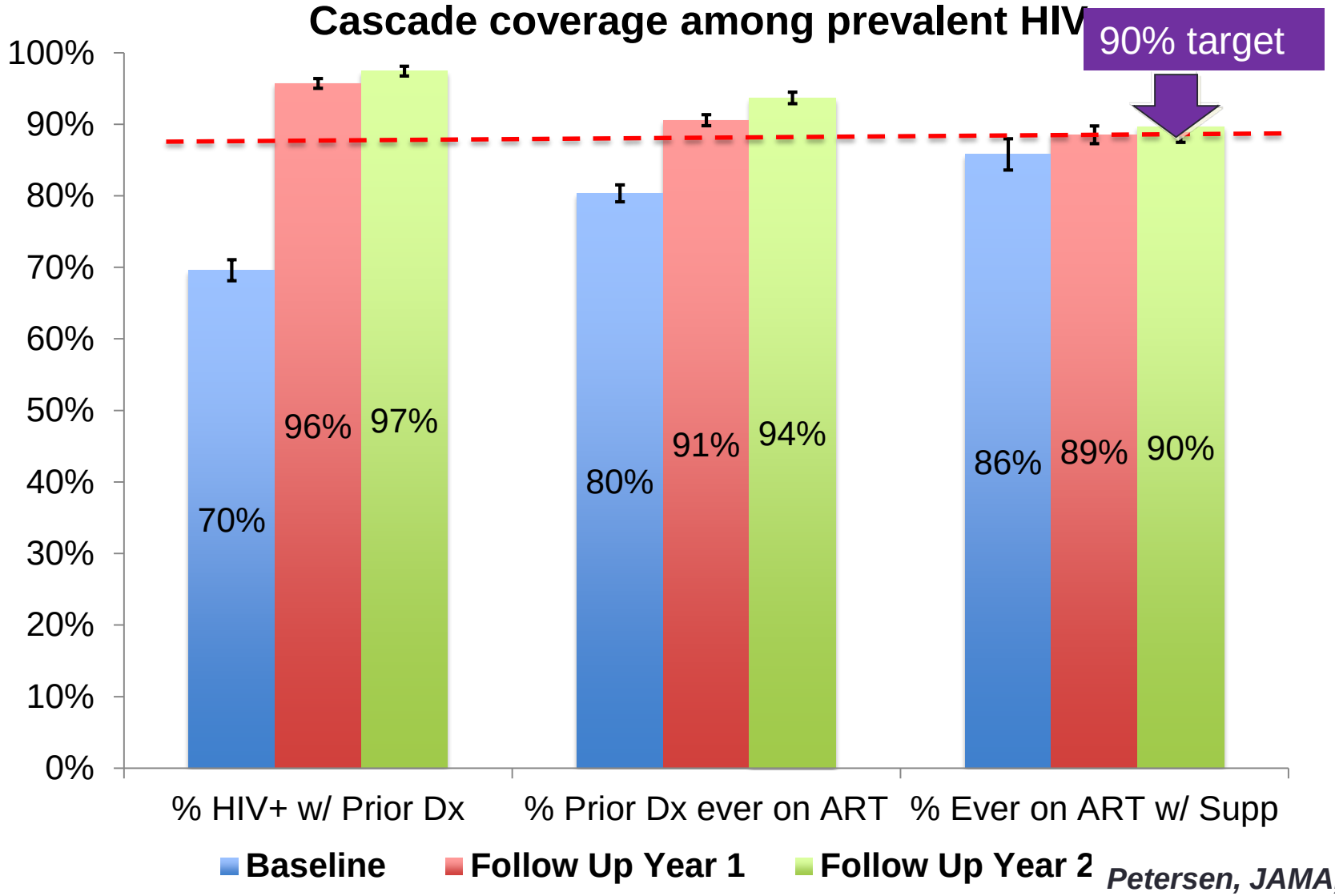
The SEARCH intervention strategy

SOC+	Community Commitment Census	Baseline multi-disease health CHC + HH testing	Standard linkage and ART/NCD start	HIV-centric standard monitoring and tracking
INTER-VENTION	Community Commitment Census	1. Annual CHC + HH multi-disease testing 2. Additional testing key populations	1. Rapid linkage, reminders, same day ART start 2. Provider access 3. Tiered tracking/feedback	1. Chronic disease-centric 2. Patient centered 3. Provider access 4. Streamlined care (3 month refill, short waits, viral load counseling) 5. Tiered tracking/feedback
	16 comm-unities	90% HIV + tested	90% start ART	90% HIV Un-Detect-Able
	POPULATION	**TEST**	**LINK and START ART**	**RETAIN and SUPPRESS**

Social science research in SEARCH

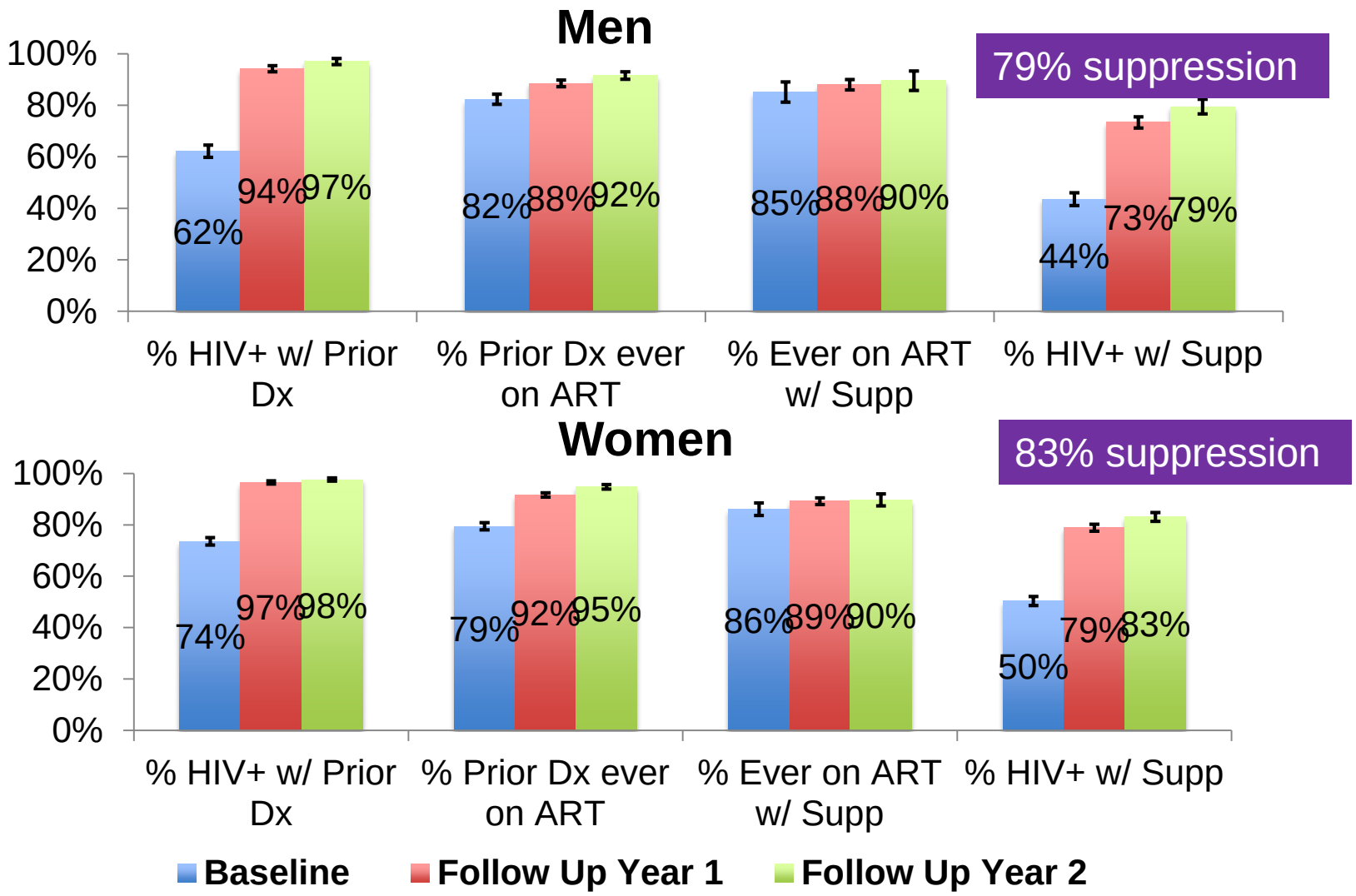
- **Household Socio-Economic Survey**: to measure impacts on outcomes in communities e.g. livelihoods, schooling, subjective life expectancy, aspirations
- **Social Network Study**: to examine social network influences on individual behaviors relevant to care cascade outcomes (HIV testing, linkage to care, etc.)
- **Longitudinal Qualitative Study**: to deepen understanding of social, behavioral and implementation mechanisms: why intervention works, why it fails if it does in some communities, how it works in diverse settings
  - **Methods**: Annual in-depth interviews (cohorts of community members, leaders & health care providers), participant observation at CHCs, focus groups with CHC participants

UNAIDS 90-90-90 Target Exceeded after SEARCH intervention



Petersen, JAMA, 2017

Cascade by Gender



Highlights of qualitative findings (baseline, 2014): Gendered dimensions of HIV-related stigma

Structural & cultural barriers hindered men's participation in testing campaigns

- Men's livelihoods & mobility meant they were often away from rural homesteads, couldn't easily access services during work hours
- Male gender norms counter to care-seeking, & valorizing risk-taking, also said to keep them disinterested and likely to "test by proxy"
- Health campaigns & clinics seen as "female spaces"

AIDS CARE, 2016
http://dx.doi.org/10.1080/09540121.2016.1164806

Routledge
Taylor & Francis Group

OPEN ACCESS

Men "missing" from population-based HIV testing: insights from qualitative research

Carol S. Camlin[a,b], Emmanuel Ssemmondo[c], Gabriel Chamie[d], Alison M. El Ayadi[a], Dalsone Kwarisiima[e], Norton Sang[f], Jane Kabami[c], Edwin Charlebois[b], Maya Petersen[g], Tamara D. Clark[d], Elizabeth A. Bukusi[f], Craig R. Cohen[a], Moses R. Kamya[c,h], Diane Havlir[d] and the SEARCH Collaboration

Using social science research to optimize interventions (the SEARCH example)

Mobilizing men

- Adapting location and timing to meet needs
  - Campaigns near workplace, weekends, moonlight CHC
  - "Home testing": client selected location
- Incentives, sports activities & other features targeting men to increase demand
  - Football matches, boat races, bands
  - Advertising via radio, bars, churches, mosques, wedding, funerals
  - Youth, motorcycle driver mobilizers
- Men's "spaces" & services
  - "Men's tent" (male sexuality, urgent care)
  - Linkage -Male Circumcision

Highlights of qualitative findings (baseline, 2014): Gendered dimensions of HIV-related stigma

HIV-related stigma in SEARCH communities perceived to be high by community members; affected men and women differently

- High anticipated stigma among both men & women, but HIV- women, more often than HIV- men, remained in HIV-serodiscordant relationships
- HIV+ women experienced negative consequences of disclosure more often than did men, with consequences more severe
- Findings demonstrate differing experiences and support needs of women and men living with HIV: Efforts to strengthen capacity in health systems for gender-sensitive provider-assisted disclosure should be accelerated

AIDS CARE, 2016
http://dx.doi.org/10.1080/09540121.2016.1168917

Routledge
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"How can I tell?" Consequences of HIV status disclosure among couples in eastern African communities in the context of an ongoing HIV "test-and-treat" trial

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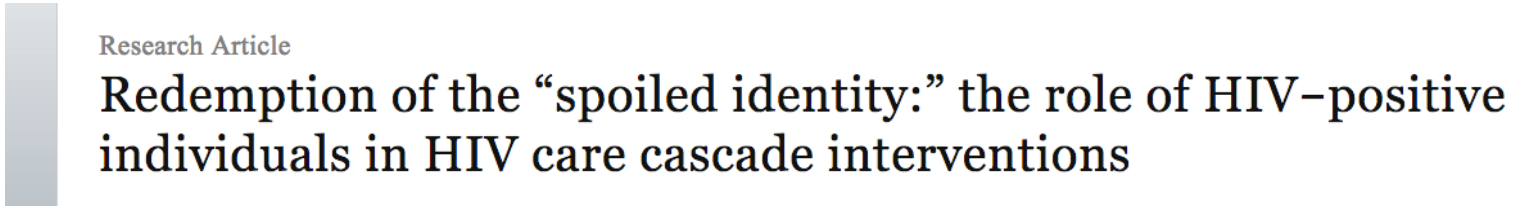
Highlights of qualitative findings (2014-16)

SEARCH precipitated new opportunities & anxieties related to disclosure of HIV+ status

- Early signs that norms, beliefs and attitudes are changing
- Benefits of ART embolden PLHIV to openly engage in care
  - Many "advocates for ART" emerging in communities: HIV+ people actively engaged in encouraging others to test
  - HIV+ community members actively encourage other PLHIV to enroll, adhere to regimens and stay engaged in care

Journal of the International AIDS Society (forthcoming)



Narratives about the relative openness of HIV-positive people now, compared to the past

- “These people started talking about their status openly and this motivated others to come out of their cocoons and feel free with their status. They would say, “if so-and-so is disclosing her status to people, why not me?”
- These people were also empowered by others who had started disclosing their status freely. It is something that is slowly catching up, and these days the infected approach the newly infected who are still in hiding and they give them support by giving advices: “just be free with your status, because the drugs work very well with those who have accepted their status and feel very free to talk about themselves to others…”

- The more I talk to people about my status the more I get disclosures from people… “you know, even me, I am HIV positive … I also take ARVs… you think you are the only one taking drugs… I am also like you… let us continue taking these drugs”. So people are very free with their status: “Eh…! Today is my clinic day— let me go for the drugs.” That is an indication of changes […]
- [*Interviewer: Since we last spoke have you noticed any more discussion in your community related to HIV, testing, and treatment?*]
- I have noticed that people are not fearful anymore. People are happy with the treatment that has been availed to them… people are really happy. (Community Leader, Sena)

PLHIV encouraging others to test

- My elder brother […] had been bedridden when I went to talk to him about [getting an] HIV test. I had to employ strategies to win his heart […] At the hospital he was counseled and tested and later initiated on care. Since then he has grown stronger; he respects me and appreciates much what I did for him. (Female, Kenya)

- “I looked at him and knew something was wrong. I told him, ‘my friend, these symptoms that you see must be symptoms of HIV so we should go to Mbarara and test so that we can know your status. I think we should go on Monday.” We had that discussion on a Saturday and on Monday I woke up very early and went to his house, he had a motor bike so we put in fuel and we rode to Mbarara. (Male, age 56, Nyamuyanja, Uganda)

PLHIV encouraging others to test

- I talked to a girl last week who has been sickly but has never taken time to test. I advised her to go for the test and I have even offered to accompany her to the hospital. I still want to make more effort to ensure she tests. If she tests positive, I will even ask the doctors to give her same appointment dates as mine to further provide her with moral support. I would love it if she lives longer and manages to take care of her children, since she is a widow. (Female, age 42, Kenya)

PLHIV encouraging others to enroll / adhere to ARVs

- “My neighbor […] was complaining that ARVS was making her feel very sick… she was thinking of not taking them anymore… I was talking to her trying to encourage her to continue adhering to drugs, telling her that the side effects will not last for long. (Female, Othoro, Kenya)

- “If I see that you have it [HIV], I advise you to be strong because I am in the same situation, so we should work together to go and get treatment.”(Female, Kazo, Uganda)

- “Those who refused to take ARVs have since died. I tell my children ‘if you feel you often fall sick and you test HIV positive, please take ARVs’.” (Female, Tom Mboya, Kenya)

- I can really try to encourage him that “HIV is like any other disease and I too could be sick just like you. So kindly try and seek medical care and please adhere to care and treatment”. And if he looks hesitant, then I can take a further step of making sure that I take him to the hospital. […] I will make sure that he honours his appointments. I will even find out from the health provider myself. I will treat him as my friend and become his buddy in treatment till he is enrolled in care and initiated into ARVs.” (Male, Tom Mboya, Kenya, age 45 Separated)

Discussion

- The personal experiences of PLHIV may make them less judgmental, and more empathetic counselors of people who are emerging from denial and profound self-stigma
- They elicit behavior change in others via ‘social proof’ (improving positive expectancies re: efficacy of ARVs) and ‘vicarious efficacy’ (“this person, socially similar to myself, is succeeding at [testing...disclosure…starting ARVs… adhering…], therefore I can do it too”)
- They have transformed their ‘spoiled identity’ as HIV-positive individuals into a new valorized social identity, finding a moral ‘redemption’ via their public advocacy of HIV testing and engagement in HIV care and treatment

Implications

- **PLHIV are engaged in bringing about social changes that will improve health of communities**
- Care must be taken to keep rights and justice in forefront; let HIV-positive individuals lead efforts rather than exerting new forms of control
- Envision new health systems–community partnerships, which could lead to new forms of involvement of HIV-positive people in interventions, programs and services
  - expand and empower the peer counselor cadre
  - empower HIV+ individuals to create new ways of accessing care (CAGs, discordant couple peer outreach and counseling teams, home based care teams, etc.)
- The horizontal process of peers (equals) talking among themselves and determining a course of action is key to peer education's influence on behavior change (Paulo Freire)

Conclusions

Correspondence

AIDS 2016, 30:969–974

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Strengthening universal HIV 'test-and-treat' approaches with social science research

"In short, social and behavioral sciences provide crucial contextual evidence on how treatment and prevention is implemented and scaled up, and what social and behavioral consequences and impact of 'universal' access to testing, treatment, and prevention can be expected, and thus holds valuable lessons for the UTT rollout. We believe that now is a crucial time to set goals for the inclusion of social science in the implementation science research program for delivering high-quality prevention and treatment across Africa."

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UNAIDS

GILEAD

NIH National Institutes of Health

World Health Organization

REPUBLIC OF KENYA MINISTRY OF HEALTH

THE WORLD BANK

http://www.searchendaids.com/

Streamlined Care

1. Efficient Visits for Patients and Staff

- ART start at first clinic visit (same day ART start)
- Triage by nurse or other extender at all follow-up visits
- Minimal wait time, and fast transit through clinic visit
- Clinic visits and ART dispensation every 3 months rather than every 1-2 months

2. Patient-centered approach to care

- Welcoming environment
- Fostering trust, connection, and a sense of investment in the patient
- Handling adherence and retention empathetically

3. Telephone hotline access for patients

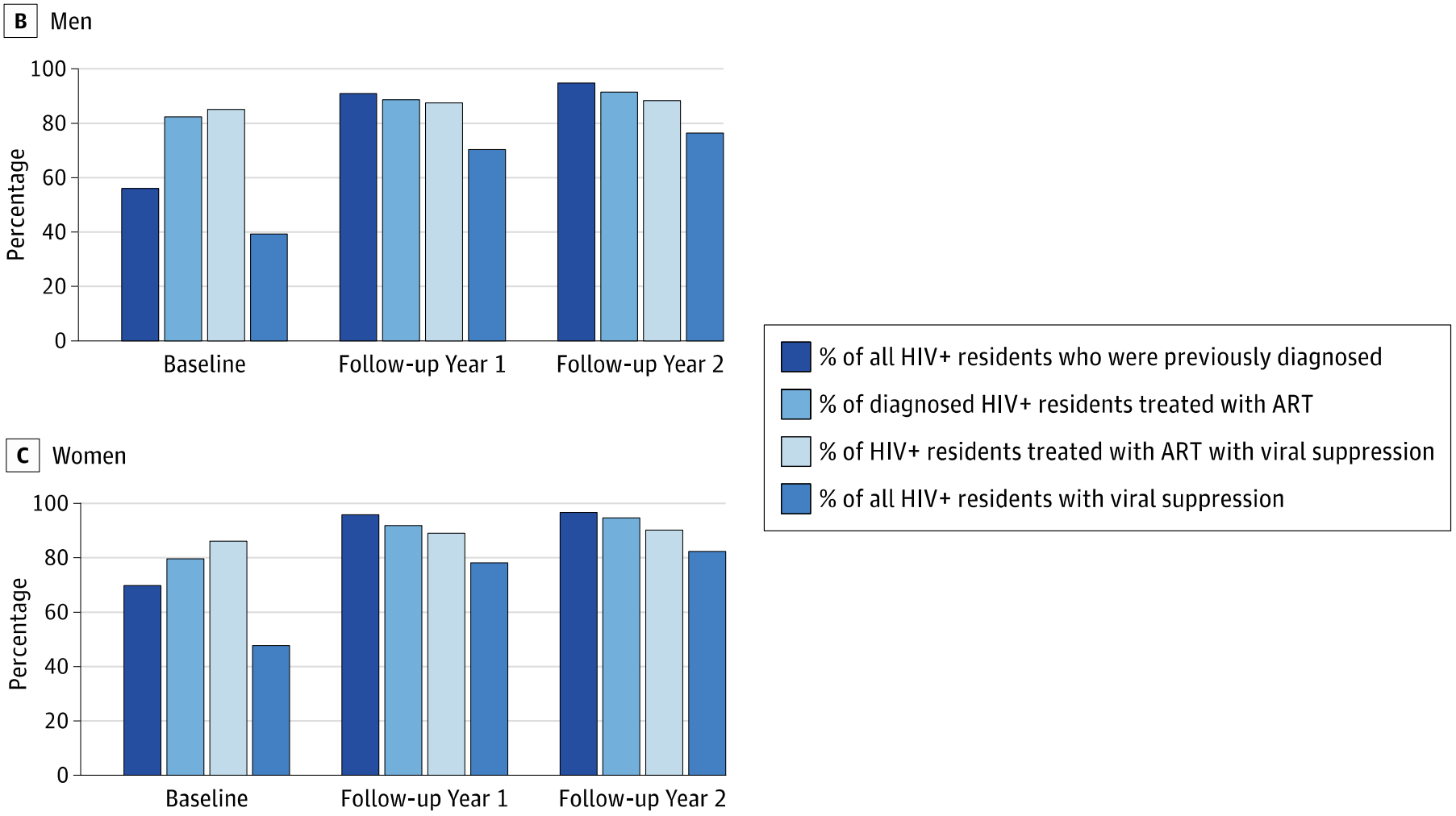
- Easy triage of medical questions
- Appointment/scheduling logistics for retention

4. Appointment reminders by phone/SMS

- One week to few days in advance
- Retention tool

5. Viral Load Counseling

- Structured format for discussion of undetectable and detectable results
- Discussion tailored to patient's ART status (pre-ART vs. early phase vs. stable ART)


B
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Percentage
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Follow-up Year 1
Follow-up Year 2
C
Women
100
80
60
40
20
0
Percentage
Baseline
Follow-up Year 1
Follow-up Year 2
% of all HIV+ residents who were previously diagnosed
% of diagnosed HIV+ residents treated with ART
% of HIV+ residents treated with ART with viral suppression
% of all HIV+ residents with viral suppression