Scaling up HIV Testing and PrEP Implementation Using Technology

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Clinical Research Director, Bridge HIV, SFDPH
Assistant Professor Of Medicine
UCSF
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

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\(^1\)CDC HIV Surveillance Report 2014; \(^2\)Baral Lancet ID 2013; \(^3\)Sanchez JMI 2015; \(^4\)Grant NEJM 2010; \(^5\)Baeten Thigpen NEJM 2012; \(^6\)Hosek JAIDS 2017; \(^8\)Hosek AIDS 2016
US SMARTPHONE MARKET SHARE BY AGE, OPERATING SYSTEM AND GENDER, Q3 2016

SMARTPHONE OWNERSHIP

AGE

18-24 98%
25-34 97%
35-44 96%
45-54 89%
55-64 80%
65+ 68%

51% ANDROID OS
43% APPLE IOS
2% WINDOWS PHONE
1% BLACKBERRY
3% OTHERS

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

Ok

Not great.

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.

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
### Baseline characteristics of enrolled participants (N=121)

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

- Week 4: 86% (>700 pills/wk), 7% (BLQ), 7% (Missed visit)
- Week 12: 73% (>700 pills/wk), 18% (BLQ), 27% (Missed visit)
- Week 24: 60% (>700 pills/wk), 25% (BLQ), 27% (Missed visit)
- Week 36: 50% (>700 pills/wk), 25% (BLQ), 27% (Missed visit)

*Ppts seen but DBS not collected for 3-4 ppts
Visit retention, by intervention arm

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

*Adjusted for depressive symptoms at baseline (p<0.05)
Adherence, by intervention arm

**Impact of Prepmate on Adherence**

<table>
<thead>
<tr>
<th></th>
<th>Prepmate</th>
<th>SOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>% with protective TFV-DP levels</td>
<td>72%</td>
<td>57%</td>
</tr>
<tr>
<td>Odds ratio (OR) for Adherence (Prepmate vs.SOC)</td>
<td>2.05 (95% CI 1.06-3.94)</td>
<td>P=0.03</td>
</tr>
<tr>
<td>Adjusted OR*</td>
<td>2.06 (95% CI 1.07-3.99)</td>
<td>P=0.03</td>
</tr>
</tbody>
</table>

![Bar chart showing adherence by visit week for Prepmate and Standard of Care.]

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

*Adjusted for depressive symptoms at baseline (p<0.05)
## High Acceptability of Prepmate

<table>
<thead>
<tr>
<th></th>
<th>Week 12</th>
<th>Week 36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepmate was very/somewhat helpful</td>
<td>89%</td>
<td>88%</td>
</tr>
<tr>
<td>Wanted to continue using Prepmate after study</td>
<td>86%</td>
<td>83%</td>
</tr>
<tr>
<td>Would recommend Prepmate to others</td>
<td>95%</td>
<td>92%</td>
</tr>
<tr>
<td>Prepmate provided a service you wanted</td>
<td>94%</td>
<td>92%</td>
</tr>
<tr>
<td>Prepmate met most/all PrEP support needs</td>
<td>94%</td>
<td>93%</td>
</tr>
<tr>
<td>Mostly/very satisfied with Prepmate</td>
<td>95%</td>
<td>95%</td>
</tr>
<tr>
<td>Prepmate helped deal with your problems</td>
<td>89%</td>
<td>85%</td>
</tr>
<tr>
<td>Worried others would see Prepmate messages</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Had problems sending/receiving messages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No social harms reported related to use of Prepmate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had problems sending/receiving messages</td>
<td></td>
<td>7%</td>
</tr>
</tbody>
</table>
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 through PrepMate. Her weekly check-ins gave me a sense of community/comraderie that can sometimes be lost in this day and age…”
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.
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
- Pts 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

PI: Susan Buchbinder
Do you know if your patients are taking their medication?
We do.

Watch the video
**TODAY**
June 18th, 2017

Protection Level
**HIGH**

Your last dose was 1 day ago.
Continue taking PrEP daily!

---

**FRIDAY**
June 16th, 2017

Protection Level
**MEDIUM**

Your last dose was 2 days ago.
Take PrEP today to be protected!

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**MONDAY**
June 12th, 2017

Protection Level
**LOW**

Your last dose was 3 days ago.
Take PrEP for 4 more days to reach high protection!
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 continuum in YMSM
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DOT Diary
Susan Buchbinder
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Sonia Lee (ATN)

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Cognitive Digital
Planet I/O
Apt Mobility
AiCure

Study participants

NIMH R01 MH095628, R01 MH109320; ATN U19 HD089881
Food for Thought: Addressing the Vicious Cycle of Food Insecurity and HIV

Sheri Weiser, MD, MPH

UCSF
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 INSECURITY: 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
APPROXIMATELY HALF OF PEOPLE LIVING WITH HIV IN NORTH AMERICA ARE FOOD INSECURE

- 64.7% Vancouver
- 63%, Boston
- 51%, Atlanta
- 48%, British Columbia
- 48%, San Francisco

HIV AND FOOD INSECURITY: SYNDEMIC ISSUES

Food Insecurity Kcal/per/day

Adult HIV Prevalence

VICIOUS CYCLE OF FOOD INSECURITY AND POOR HEALTH

- Food insecurity
- Poor nutrition
- Poor mental health
- Poor adherence to care
- Worse HIV/AIDS & chronic disease health
- Increased acute care use and health costs
- Increased poverty and unemployment

Weiser et al., Am J Clin Nutr, 2011
FOOD INSECURITY WORSENS HEALTH VIA POOR NUTRITION

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

Worse HIV/AIDS & chronic disease health

Ford. Prev Chronic Disease, 2013
Food insecure HIV-infected and at risk women had higher odds of being overweight and obese.
FOOD INSECURITY WORSENS HEALTH VIA POOR MENTAL HEALTH

- Depression
- Anxiety
- Drug & alcohol use
- Stigma
- Poor overall mental health status

Worse HIV/AIDS & chronic disease health

Food insecurity worsens HIV health via poor mental health.

- Food insecurity
- Poor mental health
- 60% higher odds of depression
- Worse HIV/AIDS & chronic disease health

Food insecure HIV+ individuals more depressed compared to food secure individuals.

Palar et al., AIDS Behav, 2014
FOOD INSECURITY WORSENS HEALTH VIA POOR HEALTH BEHAVIORS

- Medication non-adherence
- Treatment interruptions
- Missed clinic visits

Worse HIV & chronic disease health

Food insecurity → Poor health behaviors
FOOD INSECURITY WORSENS HEALTH VIA POOR HEALTH BEHAVIORS

Herman et al., AJPH, 2015

NHIS (67,539 adults): Severely food insecure less able to take medications as prescribed
FOOD INSECURITY WORSENS HEALTH ALONG CASCADE OF CARE FOR HIV

- 3x higher odds of HIV infection¹
- 70% higher odds of failing HIV therapy³
- 2x more likely to die⁴,⁵
- 45% higher odds of progression to AIDS³

FOOD INSECURITY IS LINKED TO DIABETES & OTHER CHRONIC DISEASES

- 2x higher odds of having diabetes¹
- 20% higher odds of hypertension²
- 30% higher odds of hyperlipidemia²
- Over 3x higher odds of osteoporosis³
- 46% higher odds of chronic kidney disease⁴

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 insecurity
- Hospitalizations and Readmissions
- Healthcare Expenditure
LET FOOD BE THY MEDICINE
LET MEDICINE BE THY FOOD

HIPPOCRATES

FOOD = MEDICINE
ADDRESSING THE CYCLE OF FOOD INSECURITY & POOR HEALTH
POSSIBLE INTERVENTIONS

Targeted food supplementation

Food stamps/vouchers

Cash transfers

Vocational Training Programs
FOOD SECURITY INTERVENTIONS IMPROVE HIV HEALTH AND COSTS

Food security interventions

- Improved nutrition
- Improved mental health
- Improved health behaviors

Improved HIV & chronic disease health

Decreased acute care use and health costs

Decreased poverty and unemployment
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 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
Easier to self-manage diabetes\textsuperscript{1,2}

Took their HIV medications as directed\textsuperscript{2}

68\% lowered odds of missing appointments\textsuperscript{3}

Food Support Programs

Improved Health Behaviors

Improved HIV/\& chronic disease health

70\%

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

FOOD SUPPORT INTERVENTIONS REDUCE ACUTE HEALTHCARE UTILIZATION

POH, SAN FRANCISCO\textsuperscript{1}

- **63\%** less likely to be hospitalized
- **36\%** less likely to visit ER

CHAIN, NEW YORK CITY\textsuperscript{2}

- **45\%** less likely to have ER visit
- **47\%** less likely to have an inpatient stay

FOOD SUPPORT IS AN INEXPENSIVE INTERVENTION

Feed someone for $\frac{1}{2}$ a year for the same cost as 1 day in the hospital

From Plenary given by Karen Pearl, President & CEO, God’s Love We Deliver at the North American HIV Housing Research Summit
SOCIAL PROTECTION APPROACHES: MOVING TOWARD LONG-TERM STRATEGIES

Interventions

- Macronutrient/Micronutrient supplement (Short-term)
- Social Transfers or Urban Gardens (Medium-term)
- Livelihoods (Long-term)

Scope

Malnutrition

Food Insecurity

Agricultural systems, poverty, gender

Social Protection Approach

Traditional 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

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**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

- 0.54, p=0.033
- 0.76, p=0.003
### Mechanisms: Shamba Maisha

<table>
<thead>
<tr>
<th>Nutritional</th>
<th>Mental Health</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td>“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!”</td>
<td>“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 fam from which I get food and money thus living like any other person.”</td>
<td>“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 fam produce.”</td>
</tr>
</tbody>
</table>

“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
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
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

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 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
### Nutritional

“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.”

---

### Mental Health

“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.”

---

### Behavioral

“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
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
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

<table>
<thead>
<tr>
<th>Region</th>
<th>1990 Millions</th>
<th>1990 Percent</th>
<th>2013 Millions</th>
<th>2013 Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Asia &amp; Pacific</td>
<td>966</td>
<td>60</td>
<td>71</td>
<td>4</td>
</tr>
<tr>
<td>Europe &amp; Central Asia</td>
<td>9</td>
<td>2</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Latin America &amp; the Caribbean</td>
<td>71</td>
<td>16</td>
<td>34</td>
<td>5</td>
</tr>
<tr>
<td>Middle East &amp; North Africa</td>
<td>14</td>
<td>6</td>
<td>34</td>
<td>5</td>
</tr>
<tr>
<td>South Asia</td>
<td>505</td>
<td>45</td>
<td>256</td>
<td>15</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>276</td>
<td>54</td>
<td>389</td>
<td>41</td>
</tr>
<tr>
<td>World</td>
<td>1,841</td>
<td>35</td>
<td>766</td>
<td>11</td>
</tr>
</tbody>
</table>

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

Livelihood & Food Security Conceptual Framework

LIVELIHOOD STRATEGIES

PROTECTION
- Asset protection & consumption smoothing
  - Group savings and loans
  - Micro-insurance
  - Household food production

PROMOTION
- Asset & income growth, consumption improvement
  - Enterprise development
  - Microcredit
  - Value chains

PROVISION
- Asset recovery & consumption support
  - Cash transfers
  - Savings
  - Food and labor schemes

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

Incentives for Couples HIV Testing

**OR**$_A$ 13.5 (95% CI: 10.5 – 17.4)

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).

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)

## ITT Results: ART Adherence

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Study group</th>
<th>Between-group difference</th>
<th>(95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overall</td>
<td>NAC only</td>
<td>NAC + Cash</td>
</tr>
<tr>
<td></td>
<td>(n=800)</td>
<td>(n=112)</td>
<td>(n=346)</td>
</tr>
<tr>
<td><strong>Adherence to ART (6 months: end of intervention period)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MPR≥95%</td>
<td></td>
<td>79.5%</td>
<td>63.4%</td>
</tr>
<tr>
<td><strong>Adherence to ART (12 months: 6 months after intervention has ended)</strong></td>
<td></td>
<td>67.5%</td>
<td>55.4%</td>
</tr>
</tbody>
</table>

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.

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)

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

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

Findings (1)

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

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

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

Acknowledgements

UC Berkeley / UCSF
• Dr. Nancy Padian
• Dr. William Dow
• Dr. Nicholas Jewell
• Dr. Nancy Czaicki
• Ms. Carolyn Fahey
• Dr. Sheri Weiser

Shinyanga Regional Medical Office
• Dr. Ntuli Kapologwe
• Dr. Ramadhan Kabala

Ministry of Health, Gender, Community Development, Elderly and Children
• Dr. Prosper Njau

LSHTM
• Dr. Suneetha Kadiyala

FHI360
• Ms. Mandy Swann

Financial Support
• NIH/NIMH: K01MH94246, R03MH105327
• PEPFAR Food and Nutrition Technical Working Group
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
Edward.machtinger@ucsf.edu
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 Lynny Labovitz; used with artist and patient permission
WHP Project Team

Clinical Implementation Team:
- Edward Machtinger
  MD, Professor of Medicine
- Katy Davis,
  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:
- Carol Dawson-Rose
  PhD, RN, Professor of Nursing, Dir. of Research & Eval
- Jennifer Cocohoba
  PharmD; Professor of Clinical Pharmacy
- Yvette Cuca
  PhD, MPH, Research Specialist
- Martha Shumway
  PhD, Associate Professor
- Leigh Kimberg
  MD, Professor of Medicine

Peer-Empowerment Team:
- Naina Khanna
  Executive Director, PWN-USA
- Rhodessa Jones
  Medea Project: Theater for Incarcerated Women

WHP Administrative Team:
- Al Paschke
  RN, Administrative Nurse Manager
- Vishalli Loomba
  Program Coordinator
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
- Case management
- Breakfast

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

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

Rates of trauma and PTSD in WLHIV are much higher

### Meta-analysis of all studies among US WLHIV

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Studies</th>
<th>Pooled n</th>
<th>Prevalence (%)</th>
<th>95% Confidence Interval</th>
<th>Reference Prevalence</th>
</tr>
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<tbody>
<tr>
<td>Intimate Partner Violence</td>
<td>8</td>
<td>2285</td>
<td>55.3</td>
<td>36.1 - 73.8</td>
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<tr>
<td>Childhood Sexual Abuse</td>
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<td>33.9 - 44.8</td>
<td>16.2</td>
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<td>1065</td>
<td>71.6</td>
<td>61.0 - 81.1</td>
<td>39.0</td>
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<tr>
<td>Recent PTSD</td>
<td>6</td>
<td>499</td>
<td>30.0</td>
<td>18.8 - 42.7</td>
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29 studies met our inclusion criteria, resulting in a sample of 5,930 individuals.

Rates of trauma and PTSD in WLHIV are much higher

Meta-analysis of all studies among US WLHIV

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*National Comorbidity Survey Replication, 2005
Rates of trauma and PTSD in WLHIV are much higher

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</table>

Recent Trauma ➔ 4x the rate of ART Failure

<table>
<thead>
<tr>
<th>Potential factors</th>
<th>Detectable viral load on ART</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (increase of one year)</td>
<td>OR 1.0 (0.93-1.1; p=.96)</td>
</tr>
<tr>
<td>African-American</td>
<td>OR 1.8 (0.6-6.1; p=.32)</td>
</tr>
<tr>
<td>Transgender</td>
<td>OR 0.9 (0.2-3.2; p=.84)</td>
</tr>
<tr>
<td>CD4 count &lt;200 cells/ml</td>
<td>OR 2.1 (0.7-6.5; p=.20)</td>
</tr>
<tr>
<td>&lt;90% ART adherence</td>
<td>OR 1.0 (0.3-3.6; p=.97)</td>
</tr>
<tr>
<td>Depression</td>
<td>OR 0.8 (0.3-2.7; p=.78)</td>
</tr>
<tr>
<td>Low self-efficacy</td>
<td>OR 1.7 (0.4-8.1; p=.50)</td>
</tr>
<tr>
<td>Low social support</td>
<td>OR 2.2 (0.6-6.9; p=.18)</td>
</tr>
<tr>
<td>Drug use</td>
<td>OR 1.1 (0.4-3.4; p=.88)</td>
</tr>
<tr>
<td>Lifetime coerced sex</td>
<td>OR 1.2 (0.4-3.8; p=.78)</td>
</tr>
<tr>
<td>Recent coerced sex</td>
<td>OR 1.8 (0.3-12.0; p=.53)</td>
</tr>
<tr>
<td>Lifetime trauma</td>
<td>OR 1.2 (0.3-4.5; p=.77)</td>
</tr>
<tr>
<td><strong>Recent trauma</strong></td>
<td><strong>Odds ratio 4.3 (1.1-16.6; p=.04)</strong></td>
</tr>
</tbody>
</table>

*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

The HIV Care Continuum in the US, 2011

IPV/recent trauma → 1.3x more likely to wait >90 days

- 86% of all People Living with HIV
- 80% of all People Living with HIV

- ≈ 2x rate of lost-to-follow
- ≈ 2X missed gyn appts
- ½ as likely on ART
- ½ as likely on ART
- 2x non-adherence
- 2x non-adherence
- 2-3x non-adherence
- >1.3x rate of failure
- >2x rate of failure
- >4x rate of failure

*Includes both men and women
+ Meta-analysis

Siemieniuk RA, et al. AIDS Patient Care STDs. 2010*
Kalokhe, A.S., et al. AIDS Patient Care and STDs.

Hatcher, A.M., et al. AIDS. 2015*
Lesserman, J. et al. AIDS PATIENT CARE and STDs. 2008*
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)

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


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*


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


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
A Model Based on Evidence and Experience

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

SCREENING
Inquiry about current & lifelong abuse, PTSD, depression and substance use.

RESPONSE
Onsite and community-based programs that promote safety and healing.

FOUNDATION
Trauma-informed values, robust partnerships, clinic champions, support for providers and ongoing monitoring and evaluation.

ENVIRONMENT
Calm, safe, empowering for both patients and staff.

### 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

---


## 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

---


“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.

<table>
<thead>
<tr>
<th></th>
<th>PCL-C 17</th>
<th></th>
<th>MAST</th>
<th></th>
<th>DAST</th>
<th></th>
<th>HIV Stigma</th>
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<tr>
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<td>2</td>
<td>9</td>
<td>0</td>
<td>146</td>
<td>142</td>
</tr>
</tbody>
</table>

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 (22.3) | 111.3 (26.5) |

Percent Change (SD) | 17.50% | 23.90% | 68.80% | 3.50% |

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
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
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
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

**INTERVENTION**
- 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

**POPULATION**
- 16 communities

**TEST**
- 90% HIV + tested

**LINK and START ART**
- 90% start ART

**RETAIN and SUPPRESS**
- 90% HIV Undetectable
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

Cascade coverage among prevalent HIV

90% target

70% 80% 86% 96% 91% 89% 97% 94% 90%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

% HIV+ w/ Prior Dx % Prior Dx ever on ART % Ever on ART w/ Supp

Baseline Follow Up Year 1 Follow Up Year 2

Petersen, JAMA, 2017
Cascade by Gender

**Men**
- 79% suppression
- % HIV+ w/ Prior Dx: 62% baseline, 94% follow up year 1, 97% follow up year 2
- % Prior Dx ever on ART: 82% baseline, 88% follow up year 1, 92% follow up year 2
- % Ever on ART w/ Supp: 85% baseline, 88% follow up year 1, 90% follow up year 2
- % HIV+ w/ Supp: 44% baseline, 73% follow up year 1, 79% follow up year 2

**Women**
- 83% suppression
- % HIV+ w/ Prior Dx: 74% baseline, 97% follow up year 1, 98% follow up year 2
- % Prior Dx ever on ART: 79% baseline, 92% follow up year 1, 95% follow up year 2
- % Ever on ART w/ Supp: 86% baseline, 89% follow up year 1, 90% follow up year 2
- % HIV+ w/ Supp: 50% baseline, 79% follow up year 1, 83% follow up year 2

Colors:
- Blue: Baseline
- Red: Follow Up Year 1
- Green: Follow Up Year 2
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”

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

Carol S. Camlin, Emmanuel Ssemmondo, Gabriel Chami, Alison M. El Ayadi, Dalsone Kwarisiima, Norton Sang, Jane Kabami, Edwin Charlebois, Maya Petersen, Tamara D. Clark, Elizabeth A. Bukusi, Craig R. Cohen, Moses R. Kamya, Diane Havlir, 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

“Ahow 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

Irene Maeri, Alison El Ayadi, Monica Getahun, Edwin Charlebois, Cecilia Akatukwas, Dennis Tumwebaze, Harriet Itiakorit, Lawrence Owino, Dalsone Kwarisiima, Emmanuel Ssemmondo, Norton Sang, Jane Kabami, Tamara D. Clark, Maya Petersen, Craig R. Cohen, Elizabeth A. Bukusi, Moses Kamya, Diane Havlir, Carol S. Camlin and the SEARCH Collaboration
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)

Research Article

Redemption of the “spoiled identity:” the role of HIV–positive individuals in HIV care cascade interventions
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

“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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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  Men

- Baseline
- Follow-up Year 1
- Follow-up Year 2

C  Women

- Baseline
- Follow-up Year 1
- Follow-up Year 2

Legend:
- % 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