Challenges to Achieving Health Equity in HIV: Lessons from CROI

Biswa Ojikutu MD MPH
Division of Global Health Equity, Brigham and Women’s Hospital
Infectious Disease Divisions, Massachusetts General and Brigham and Women’s Hospital
The Fenway Institute
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Disclosures

I have no disclosures.
Overview

- Highlight disparities concerns
- System-level data
- Key populations

- Substance Use Disorders
- Transgender Individuals
- MSM (Black and Latinx)
HIV affects everyone, but not equally

Estimated New HIV Infections:
Most Affected Populations in the United States (2017)

Prevalence of HIV is over 150 times higher in men who have sex with men and transgender women than heterosexual men and women.

HIV incidence is 8 times higher among African Americans and 3 times higher among Hispanics/Latinx than whites.

Ending the Epidemic in The US: 90% Reduction in HIV Incidence in 10 years

- What if we maintain the status quo?
  - New diagnoses will only decrease 8.6% in 10 years
  - Racial and ethnic disparities in new diagnoses will be exacerbated

What is the optimal combination of strategies to reach Ending the HIV Epidemic: A Plan for America goals?
Six focal cities home to 24.1% of the US population of people living with HIV/AIDS

<table>
<thead>
<tr>
<th>Total adult 15-64 Population (% projected change to 2040)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population (2016)</td>
</tr>
<tr>
<td>Atlanta, GA</td>
</tr>
<tr>
<td>Baltimore, MD</td>
</tr>
<tr>
<td>Los Angeles, CA</td>
</tr>
<tr>
<td>Miami, FL</td>
</tr>
<tr>
<td>New York, NY</td>
</tr>
<tr>
<td>Seattle, WA</td>
</tr>
<tr>
<td>3,812,143 (37%)</td>
</tr>
<tr>
<td>1,874,601 (-1%)</td>
</tr>
<tr>
<td>6,964,983 (-2%)</td>
</tr>
<tr>
<td>1,821,311 (16%)</td>
</tr>
<tr>
<td>5,865,683 (3%)</td>
</tr>
<tr>
<td>1,503,497 (15%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adult 15-64 Population by race/ethnicity (% projected change in proportion by 2040)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black / African American</td>
</tr>
<tr>
<td>Hispanic / Latinx</td>
</tr>
<tr>
<td>Non-Hispanic White and others</td>
</tr>
<tr>
<td>1,336,469 (-1%)</td>
</tr>
<tr>
<td>553,665 (5%)</td>
</tr>
<tr>
<td>568,815 (-1%)</td>
</tr>
<tr>
<td>296,354 (-2%)</td>
</tr>
<tr>
<td>1,304,687 (-1%)</td>
</tr>
<tr>
<td>95,550 (1%)</td>
</tr>
<tr>
<td>391,265 (10%)</td>
</tr>
<tr>
<td>102,495 (3%)</td>
</tr>
<tr>
<td>3,385,948 (4%)</td>
</tr>
<tr>
<td>1,246,583 (7%)</td>
</tr>
<tr>
<td>1,703,286 (4%)</td>
</tr>
<tr>
<td>137,818 (7%)</td>
</tr>
<tr>
<td>2,084,409 (-9%)</td>
</tr>
<tr>
<td>1,218,441 (-8%)</td>
</tr>
<tr>
<td>3,010,220 (-3%)</td>
</tr>
<tr>
<td>278,374 (-5%)</td>
</tr>
<tr>
<td>2,857,710 (-3%)</td>
</tr>
<tr>
<td>1,270,129 (-9%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>People Living with HIV (rate/100,000)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence</td>
</tr>
<tr>
<td>31,961 (670)</td>
</tr>
<tr>
<td>16,931 (718)</td>
</tr>
<tr>
<td>48,100 (564)</td>
</tr>
<tr>
<td>26,128 (1,120)</td>
</tr>
<tr>
<td>117,260 (959)</td>
</tr>
<tr>
<td>7,768 (312)</td>
</tr>
<tr>
<td>New diagnoses</td>
</tr>
<tr>
<td>1,618 (33)</td>
</tr>
<tr>
<td>441 (19)</td>
</tr>
<tr>
<td>1,720 (20)</td>
</tr>
<tr>
<td>1,150 (49)</td>
</tr>
<tr>
<td>2,608 (21)</td>
</tr>
<tr>
<td>248 (10)</td>
</tr>
<tr>
<td>National Rank</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>25</td>
</tr>
<tr>
<td>27*</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>21*</td>
</tr>
<tr>
<td>75*</td>
</tr>
</tbody>
</table>
Estimated impact on HIV incidence: 2020-2030

- Each city’s optimal combination strategy was Unique: included 9-13 evidence-based interventions

- Previously-documented scale: incidence reductions of 30.7% (19.1%-43.7%) in Seattle to 50.1% (41.5%-58.0%) in NYC by 2030

- Ideal Implementation: approaching EHE targets in Atlanta, Baltimore and Miami; LA, NYC and Seattle reaching 60.7%, 58.1% and 39.5% reductions.

Nosyk et al. Lancet HIV, 2020
HIV Stigma Predicts Retention in Care Among PLWH

7 academic HIV clinics in the US

5,825 Patients:
80% male; 39% Black; 15% Latinx; 32% heterosexual

4-item internalized stigma assessment

Each unit increase in mean internalized stigma was associated with decreased odds of keeping the next primary care appointment
**HIV Diagnoses Among PWID in the US**
(Down 31% overall)


Alpren et al, AJPH, Jan 2020
HIV Cluster Investigation among Injection Drug Users

Total new HIV infection: 129
Gender: 43% female
Race/ethnic: 85% white non-Hispanic individuals
Mean age: 35 years old
HCV infection: 90% current or past
Most IDU (also sexual transmission risk)

Cumulative HIV Diagnoses, Timeline of Outbreak Investigation & Response: Lowell and Lawrence, Mass. 2015-18

- Clinical advisory issued by MDPH
- MDPH extends field epidemiology services to all new HIV diagnoses linked to IDU and all cases with current or past HCV infection
- Further increases in HIV diagnoses in PWID in Lowell and Lawrence
- Transmission clusters detected with HIV sequence analysis at CDC
- Local clinicians report 5 HIV diagnoses in PWID in Lowell
- MDPH convened stakeholder call
- MDPH convened second stakeholder call
- Privately funded SSP opens in Lowell
- MDPH-funded SSP opens in Lowell
- Intensive MDPH/CDC field investigation; field epidemiology extended to all new HIV diagnoses

Note. CDC = Centers for Disease Control and Prevention; IDU = injection drug use; MDPH = Massachusetts Department of Public Health; PWID = people who inject drugs; SSP = syringe services program.
Dynamics of the Scott County, IN HIV outbreak and response 2011–15: a modelling study
Gonsalves GS, Crawford FW, Lancet HIV, 2018

The outbreak starts in 2011 and explodes in July 2014.

The response ramps up in April 2015.

Key Finding:
Response was too late. Acting earlier could have avoided >200 infections.
HIV Outbreak Among People Who Inject Drugs
Cabell County, West Virginia

Largest relative increase over baseline in the United States since the 2015 outbreak among PWID in Scott County, Indiana

Found evidence of rapid transmission in this community with high rates of injection drug use

Required interventions from across the spectrum of HIV prevention, care, and treatment

McClung RP et al, CROI 2020. ABSTRACT#123
Evidence of Recent HIV transmission Confirmed

Median CD4 count at diagnosis: 590 cells/μL
Molecular Clock Analysis: >90% occurred after January 2018 and 60% in 2019

Demographic Factors
- 99% reported injection drug use
- 91% white, 40% female
- Median age=33 years
- 88% concurrent HCV infection

Social Determinants of Health
- 80% homeless/unstable housing
- 77% shared injection equipment
- 58% women reported transactional sex
- 43% history of incarceration

McClung RP et al, CROI 2020. ABSTRACT#123
Viral Hepatitis in West Virginia

Incidence of Acute Hepatitis B Cases by Year of Report, 2007-2016*

Rate per 100,000 Population

<table>
<thead>
<tr>
<th>Year</th>
<th>WV</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1.5</td>
<td>1.1</td>
</tr>
<tr>
<td>2008</td>
<td>1.3</td>
<td>1.1</td>
</tr>
<tr>
<td>2009</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>2010</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>2011</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>2012</td>
<td>6.2</td>
<td>7.6</td>
</tr>
<tr>
<td>2013</td>
<td>10.6</td>
<td>10.0</td>
</tr>
<tr>
<td>2014</td>
<td>14.7</td>
<td>14.5</td>
</tr>
<tr>
<td>2015</td>
<td>1.1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Incidence Rate of Acute Hepatitis C, 2007-2016

Rate per 100,000 Population

<table>
<thead>
<tr>
<th>Year</th>
<th>WV</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>0.3</td>
<td>0.9</td>
</tr>
<tr>
<td>2008</td>
<td>0.3</td>
<td>1.5</td>
</tr>
<tr>
<td>2009</td>
<td>0.3</td>
<td>1.1</td>
</tr>
<tr>
<td>2010</td>
<td>0.4</td>
<td>2.4</td>
</tr>
<tr>
<td>2011</td>
<td>0.6</td>
<td>3.0</td>
</tr>
<tr>
<td>2012</td>
<td>0.7</td>
<td>3.1</td>
</tr>
<tr>
<td>2013</td>
<td>0.7</td>
<td>3.3</td>
</tr>
<tr>
<td>2014</td>
<td>0.8</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Source: DHHR, BPH, OEPS

Respond, Diagnose, Treat, and Prevent Rapidly in West Virginia

Cumulative outbreak cases

- Outbreak detected
- Federal/state/local coordination
- Syringe service programs
- CDC site visit
- PrEP Training for Providers
- Health alert released
- Healthcare provider forum
- Public Forums
- HIV testing expansion in CHCs and EDs
- Enhanced MAT linkage for people with HIV
- Same day HIV care and treatment
- >2000 HIV tests conducted
- Public Forums
- 82 total cases

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42% of new HIV cases diagnosed among PWID in 2018 were women
Unmet Needs and Barriers to Care Services among HIV-Positive Persons who Inject Drugs

<table>
<thead>
<tr>
<th>Service</th>
<th>Received Service</th>
<th>Needed but did not receive service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental care</td>
<td>46</td>
<td>38</td>
</tr>
<tr>
<td>HIV case management services</td>
<td>61</td>
<td>10</td>
</tr>
<tr>
<td>Mental health services</td>
<td>55</td>
<td>16</td>
</tr>
<tr>
<td>SNAP or WIC*</td>
<td>47</td>
<td>19</td>
</tr>
<tr>
<td>Drug or alcohol counseling or treatment</td>
<td>39</td>
<td>20</td>
</tr>
<tr>
<td>Meal or food services</td>
<td>41</td>
<td>11</td>
</tr>
<tr>
<td>Transportation assistance</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td>Shelter or housing services</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td>HIV peer group support</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>Patient navigation services</td>
<td>18</td>
<td>10</td>
</tr>
</tbody>
</table>

*SNAP: Supplemental Nutrition Assistance Program
WIC: Special Supplemental Nutrition Program for Women, Infants and Children

59% 79%

Figure 1. Receipt of and need for care services—Medical Monitoring Project, 2015–2018.

Dasgupta S., et al. CROI 2020. ABSTRACT#888
Addressing Stimulant Use Among MSM: RCT of Mirtazapine for Methamphetamine Addiction

Mirtazapine arm was associated with declines in:
• Methamphetamine use at 24 & 36 weeks
• # male partners
• # episodes of condomless anal sex with serodiscordant partners

Coffin et al, JAMA Psychiatr. 2020
HIV, HCV, HSV-2 Serostatus among Transgender Women

Keruly MP et al, CROI 2020. ABSTRACT#880
Progression through the HIV Care Continuum for Transgender Women

- **NA-ACCORD:** 123 transgender women (TW), 6,979 cisgender women (CW), 35,751 cisgender men (CM)

- **Viral Suppression**
  - TW spent 0.7 more years virally suppressed than CW
  - TW spent 0.2 more years virally suppressed than CM

- **Future Studies:** Gender-affirming practices at the participating clinical sites

HIV Prevalence among Transgender Men at a NYC Community Health Center

577 Transgender men (TM)

HIV prevalence: 2.9% overall
Black TM: 6.8%
Latinx: 3.2%
White: 2.1%
11.1% among TM who reported having sex with cisgender men only

Radix A. et al, CROI 2020. ABSTRACT#0881
Primary and Secondary Syphilis — Reported Cases by Sex and Sex of Sex Partners, 36 States*, 2014–2018

* 36 states were able to classify ≥70% of reported cases of primary and secondary syphilis as either MSM, MSW, or women for each year during 2014–2018.

ACRONYMS: MSM = Gay, bisexual, and other men who have sex with men; MSW = Men who have sex with women only.
Variation in Syphilis among Bisexual Men and Association with Syphilis in Women

FIGURE 1: Mean Proportions of ES Cases in MSMW by Race/Ethnicity, Stratified by Region, 2017

Cannon C et al, CROI 2020. ABSTRACT#2858
## Linkage to Care and Viral Suppression within 90 Days in DC

<table>
<thead>
<tr>
<th></th>
<th>Diagnosed w/HIV 2009-2012</th>
<th>Diagnosed w/HIV 2013-2017</th>
<th>% Difference</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>642</td>
<td>611</td>
<td>8.3</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Among those with CD4 count ≤350 at diagnosis</td>
<td>142</td>
<td>112</td>
<td>7.7</td>
<td>0.0078</td>
</tr>
<tr>
<td>Among those with CD4 count ≥350 at diagnosis</td>
<td>473</td>
<td>465</td>
<td>7.2</td>
<td></td>
</tr>
</tbody>
</table>

Black individuals and MSM/PWID were less likely to achieve viral suppression in 90 days
Black, Latino and MSM/PWID were also less likely to link to care within 30 days
Rapid ART Defined by the DHHS as a Key Component to Help End the HIV Epidemic
Knowledge, Attitudes and Practices of Immediate Initiation of ART

- 30 NYC clinics providing primary care to PLWH

- 80% of respondents identified that Rapid ART can decrease time to viral suppression

- 66% reported 0 to 4 days as the typical length of time from a positive HIV test to ART initiation

- Commonly reported barriers to included: insurance barriers (76%), medication prior authorizations (50%), financial barriers (46%)

- Clinics serving a majority of Black and Latinx patients were less likely to report meeting the same-day benchmark
Pharmacist-Driven RAPID ART

**Role of the Pharmacist**

1. Is rapid ART appropriate?
   - Assess readiness

2. Provide counseling
   - Disease state and medication education

3. Recommend patient-specific ART
   - Evaluate drug-drug interactions
   - Evaluate comorbid conditions
   - Consider patient preferences

4. Ensure patient leaves clinic with ART in hand
   - Assess coverage/copays
   - Coordinate with on-site pharmacy

**Figure 2. Workflow Diagram**

**Pre-Implementation**
- Intake Visit
- Provider Visit & Medication Initiation
- Medication Access Issues

**Post-Implementation**
- Medication Initiation
- PharmD
- Intake Visit
- Medication Counseling
- Patient-specific ART

**Day 0**
- Intake to viral suppression = 81 days

**Day 17**
- Provider Visit
- Viral Suppression
- Intake to viral suppression = 33 days

Brotherton AL et al, CROI 2020. ABSTRACT#498
EXPLAINING RACIAL DISPARITIES IN VIRAL SUPPRESSION AMONG MSM

Community-Based Prospective Cohort Study

- 400 sexually active Black and white MSM in Atlanta
- Ages 18+
- Baseline visits: June 2016 - July 2017

Recruitment for MSM living with HIV

- MSM community events, CBOs/Testing Sites, social media outlets

Knox JR et al, CROI 2020. ABSTRACT#146
More Black MSM not virally suppressed:

Black (vs. white): $PR = 1.6$, $95\%CI = 1.1-2.5$

Modifiable RISK
- Lower income
- Housing instability
- No vl in the past year
- Not having insurance
- Marijuana use

Knox JR et al, CROI 2020. ABSTRACT#146
New HIV Infections in 2016: Impact of Those Undiagnosed and Not Retained in Care

HIV Prevalence: 1,100,000

- 38,700 New Infections
- 80% of New HIV Infections
- 14.5% Are Undiagnosed, HIV Infected = 159,500
- 37.8% of New Infections
- 37.2% Are Diagnosed, Not Retained in Care = 409,200

Using HIV surveillance data and other data sources to identify PLWH who are not in care and link them to medical and social services

The CoRECT (Cooperative Re-Engagement Controlled Trial)
- Randomized controlled trial
- 3 sites: Philadelphia, Connecticut and Massachusetts
- Out of care patients receive SOC or a field services intervention include linkage and re-engagement in care
- Outcomes: linkage or re-engagement in 90 days, 12-month retention, viral suppression at 12 months, durable viral suppression at 18 months
Philadelphia CoRECT Study

**Background:** 6,401 were out of care in 2017

**Eligibility:** >18, enrolled in care but no labs/appointments for 6 months

**Sample size:** 898 patients (449 to each arm)

<table>
<thead>
<tr>
<th>Standard of Care (SOC)</th>
<th>SOC plus Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-engagement activities by the medical facility alone</td>
<td>Implemented by Health Department Disease Intervention Specialists</td>
</tr>
<tr>
<td>Appointment reminder calls, letters, patient portal reminders</td>
<td>Antiretroviral therapy and access to services model (ARTAS): intensive care management</td>
</tr>
<tr>
<td></td>
<td>▪ Services provided for 90 days or 5 visits to linkage</td>
</tr>
<tr>
<td></td>
<td>▪ Services provide for up to 60 days or 3 visits after linkage</td>
</tr>
</tbody>
</table>
Philadelphia CoRECT Results

- **Re-engagement**: Standard of Care 43.2% vs. Intervention 61.9%, p-value < .001
- **Retention in Care**: Standard of Care 44.1% vs. Intervention 59.0%, p-value < .001
- **Viral Suppression**: Standard of Care 55.9% vs. Intervention 64.1%, p-value = .012

Shamasunder S et al, CROI 2020. ABSTRACT#46
Achieving Health Equity & Ending the HIV Epidemic

We have the tools....*but many societal challenges remain*:

- Stigma
- Gender inequality
- Poverty
- Limited access to care
- Structural racism and discrimination
Thanks!

BOJIKUTU@MGH.HARVARD.EDU