Addressing Social Determinants to Improve Linkage-to-Care and Retention for HIV Prevention and Treatment

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• Receive funding from
  – National Institutes of Health,
  – CDC
  – NY State Department of Health
Objectives

• To understand how social determinants of health (SDH) impact HIV linkage and retention in care
• To learn about screening tools for SDH
• To understand strategies to implement SDH screening to improve linkage and retention
Outline

• Updated new HIV data
• PrEP use data across the U.S.
• Impact of Social Determinants of Health (SDH) on Linkage, Retention, Adherence
• Screening for SDH
• Addressing SDH
New HIV diagnosis (CDC data)

• Number of new diagnoses down 19% from 2005-2014
  – 48,795 → 39,718 per year

• Improvements with some populations
  – Diagnoses down for Black women 42%
  – Diagnoses down for People Who Inject Drugs (PWID) by 65%
  – Diagnoses down for heterosexuals by 35%
  – Diagnoses down for White gay/bi men by 18%
New HIV diagnosis data 2005-2014

- Still getting worse for others
  - Diagnoses up for gay and bisexual men by 6%
  - Diagnoses **up for Black gay and bisexual men by 22%**, stabilized in recent years
  - Diagnoses up for **Latino gay and bisexual men by 24%**, still getting worse in recent years (up by 13%)
  - **Black gay and bisexual males age 13-24**: 87% increase in new HIV diagnoses over last decade, 2% decline in recent years
Key findings

- HIV diagnoses becoming even more concentrated among gay and bisexual men

- Racial/ethnic and age disparities becoming even more pronounced among gay and bisexual men

- Improvements among Black women, heterosexual women and men, PWID
Unique Individuals Starting FTC/TDF for PrEP in US, 2012 to 2015 (by quarter)

79,684 unique individuals started FTC/TDF for PrEP:

1,671 in Q4 2012 → 14,000 in Q4 2015

738% increase
Age of Individuals Starting FTC/TDF for PrEP in US 2012-2015

- Mean age of 79,684 unique individuals: 36.2 years

18,812 Women

72% <25 years
28% ≥25 years

Mean age, y | 33.2
---|---
2012 | 34.0
2015 | 33.4

60,872 Men

89% <25 years
11% ≥25 years

Mean age, y | 37.1
---|---
2012 | 39.2
2015 | 36.7
FTC/TDF for PrEP Utilization Compared With Population and New HIV Infections

FTC/TDF for PrEP use among AA and Hispanics is low relative to the rate of new HIV infections

b. These data represent 43.7% (n=21,463) of unique individuals who have started TVD for PrEP from 2012-3Q2015.
What factors are driving these disparities and inequities in HIV treatment and prevention?
Stigma and other social determinants influence the HIV care continuum before a HIV diagnosis is even made.
Social Determinates of Health Components (World Health Organization)

- Social and economic environment (laws, policy, culture, social capital, education, social status, income)
- Physical environment (water, sanitation, pollution, safety, health care service availability)
- Individual characteristics and behaviors (age, race, gender, gender identity and expression, sexual orientation, genetics... )
Disparities Between Black and White MSM in the US Throughout the Treatment Cascade

Undiagnosed HIV
OR, 6.38 (4.33-9.39)

Diagnosed HIV+
OR, 2.59 (1.82-3.69)

Health insurance coverage
OR, 0.47 (0.29-0.77)

>200 CD4 cells/mm³ before ART initiation
OR, 0.40 (0.26-0.62)

ART adherence
OR, 0.50 (0.33-0.76)

HIV suppression
OR, 0.51 (0.31-0.83)

Viral Suppression

Adapted from Millett, The Lancet, 2012
Slide adapted from Grinsztejn, AIDS 2014
Diagnosed HIV+
OR, 2.59 (1.82-3.69)

Undiagnosed HIV
OR, 6.38 (4.33-9.39)

Health insurance coverage
OR, 0.47 (0.29-0.77)

ART utilization/access
OR, 0.56 (0.41-0.76)

>200 CD4 cells/mm³ before ART initiation
OR, 0.40 (0.26-0.62)

ART adherence
OR, 0.50 (0.33-0.76)

HIV suppression
OR, 0.51 (0.31-0.83)

Viral Suppression

Lower income ($<20k)
OR, 3.42 (1.94-6.01)

Healthcare visits
OR, 0.61 (0.42-0.90)

Millett, The Lancet, 2012
Slide adapted from Grinsztejn, AIDS 2014
Factors impacting adolescent and youth retention/adherence

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Percentage reporting barrier (95% CI)</th>
<th>Studies</th>
<th>Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forgot</td>
<td>63.10 (46.30, 80.00)</td>
<td>5</td>
<td>831</td>
</tr>
<tr>
<td>Travel</td>
<td>40.70 (25.70, 55.60)</td>
<td>2</td>
<td>128</td>
</tr>
<tr>
<td>Pill burden</td>
<td>37.00 (28.20, 45.70)</td>
<td>1</td>
<td>114</td>
</tr>
<tr>
<td>Asleep</td>
<td>36.50 (12.30, 60.60)</td>
<td>2</td>
<td>149</td>
</tr>
<tr>
<td>Distance to clinic</td>
<td>36.50 (26.00, 45.30)</td>
<td>1</td>
<td>93</td>
</tr>
<tr>
<td>Palatability</td>
<td>29.20 (18.40, 40.00)</td>
<td>3</td>
<td>703</td>
</tr>
<tr>
<td>Alcohol/substance misuse</td>
<td>28.80 (11.80, 45.80)</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Busy</td>
<td>26.90 (6.10, 47.80)</td>
<td>3</td>
<td>633</td>
</tr>
<tr>
<td>Felt good</td>
<td>26.50 (18.50, 34.50)</td>
<td>1</td>
<td>114</td>
</tr>
<tr>
<td>Depressed/overwhelmed</td>
<td>25.70 (17.70, 33.60)</td>
<td>1</td>
<td>114</td>
</tr>
<tr>
<td>Ran out of pills</td>
<td>25.30 (17.80, 32.80)</td>
<td>3</td>
<td>703</td>
</tr>
<tr>
<td>Sick</td>
<td>19.90 (4.40, 35.30)</td>
<td>2</td>
<td>598</td>
</tr>
<tr>
<td>Avoid side effects</td>
<td>19.60 (12.40, 26.80)</td>
<td>1</td>
<td>114</td>
</tr>
<tr>
<td>Lack of food</td>
<td>18.00 (5.70, 30.40)</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td>Toxicity</td>
<td>12.60 (7.30, 17.80)</td>
<td>2</td>
<td>149</td>
</tr>
<tr>
<td>Stock outs</td>
<td>11.20 (8.40, 14.00)</td>
<td>1</td>
<td>484</td>
</tr>
</tbody>
</table>

Shubber et al, AIDS 2016, Poster THPEB074, Durban, South Africa
PrEP in a large integrated healthcare system: adherence, renal safety, and discontinuation (Marcus J, JAIDS, 7/16)

- 972 pts, 850 py f/u
- Mean self-reported adherence 92%; no seroconversions
- ↓ adherence associated with ↑ co-payment, cigarette smoking, Black race
- 22.5% discontinued PrEP
- ↑ discontinuation associated with being female, drug/alcohol use
Why HPTN073?

- High and disproportionate rates of HIV infections among US Black Men who Have Sex with Men
- Assess the initiation, acceptability, safety, and feasibility of PrEP for Black men who have sex with men (BMSM) in three US cities
- Study Questions
  - Will BMSM initiate PrEP?
    - Why or why not?
  - Will BMSM use PrEP daily?
    - If not how often?
HPTN 073 Study Design

• Demonstration project
• Offered once daily oral Truvada® as PrEP
• Client-centered care coordination (C4): individualized prevention counseling, support, and service coordination
• Participants followed for a total of 12 months
Enrolled 226 HIV-uninfected BMSM in three US cities: Los Angeles, CA; Washington, DC; and Chapel Hill, NC.

Implemented August 2013 – September 2014.

40.2% of participants ≤25 yrs of age

Levels of PrEP use were monitored using self-reported adherence and biologic markers.
Client Center Coordinated Care (C4)

• Longitudinal management of client-identified health and psychosocial needs by an interdisciplinary team

• Acknowledges the unique experiences of BMSM in the U.S. with regard to biomedical interventions, psychosocial issues and barriers to accessing health care

• Informed by research experiences of HPTN – team-based clinical care models

Slides adapted from DP Wheeler, AIDS 2016, Durban, South Africa
HTPN 073

Client Centered Care Coordination (C4) – a culturally specific intervention package to Support PrEP Use in HIV Risk Reduction Menu of Options

- PrEP Uptake: 79%
- 12-Month Retention: 92%

Transition to Community Follow-Up

C4 Core Components

Slides adapted from DP Wheeler, AIDS 2016, Durban, South Africa
HPTN 073: Key Findings  
(D Wheeler and S Fields)

• Theory-based, culturally-tailored programs can ↑ PrEP uptake, ↑ adherence, ↑ program retention for BMSM

• ↑ uptake of PrEP among BMSM and ↑ acceptance of C4 could be basis for program development to improve health outcomes in BMSM

• Almost 10% screened out b/c hepatic or renal issues, meaning that addressing unmet clinical needs is important and also suggests other PrEP regimens needed
## Correlates of poor adherence

<table>
<thead>
<tr>
<th>Individual</th>
<th>Social</th>
<th>Drug related</th>
<th>Structural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental health and substance use</td>
<td>Lack of support and guidance</td>
<td>Side-effects and palatability</td>
<td>Distance from clinic</td>
</tr>
<tr>
<td>Life-style (travel, forget, busy, daily routine)</td>
<td>Peer conformity</td>
<td>Pill burden</td>
<td>Drug stock-outs and waiting times</td>
</tr>
<tr>
<td>Lack of self-management skills</td>
<td>Intense stigma</td>
<td></td>
<td>Provider attitudes</td>
</tr>
</tbody>
</table>

Need to improve communication about sexual risk behaviors and PrEP in primary care

- Survey of 1,394 MSM using partner-seeking website
- 42% were uncomfortable discussing male-male sex with their PCP
- Even when comfortable, few MSM had discussed PrEP with their PCP
- Most MSM perceived that PCPs would be unwilling to prescribe PrEP

** Versus other healthcare provider, the Internet, or other source

<table>
<thead>
<tr>
<th>Comfortable discussing male-male sex w/PCP (n=805; 58%)</th>
<th>Not comfortable discussing male-male sex w/PCP (n=589; 42%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have not discussed CAS w/PCP 41%</td>
<td>89%</td>
</tr>
<tr>
<td>Have not discussed PrEP w/PCP 82%</td>
<td>86%</td>
</tr>
<tr>
<td>Perceive that PCP would not be willing to prescribe PrEP 75%</td>
<td>77%</td>
</tr>
<tr>
<td>Would prefer to obtain PrEP from source other than PCP **81%</td>
<td></td>
</tr>
</tbody>
</table>

Krakower et al. IAS 2015
Why are SDH important in Health Care?

PROPORTIONAL CONTRIBUTION TO PREMATURE DEATH

- Genetic predisposition 30%
- Behavioral patterns 40%
- Social circumstances 15%
- Environmental exposure 5%
- Health care 10%

Screening for Social Determinants
Does your health center have a standard approach or work-flow to screen for potential social determinants?

- A. No
- B. Yes
- C. Not Sure
What makes for a good screener?
Psychosocial Screening Tool

We Care! Tell Us How We Can Help You.

As your medical home, we want to provide the best possible care to your children and family. The questions below ask about experiences that may affect you or your child and can impact your child’s healthcare. We are here to help and will provide you with information and resources to make sure you get the care that your family needs. Please take a few minutes to answer these questions honestly, circling one of the choices on the right. Your answers are important to us and will be kept private as part of your child’s medical record. You may have answered these questions before but please answer them again because things in your life may have changed. If you have any questions, please ask your medical provider.

1. Is there someone in your life whom you can count on or talk to when you need help?  
   - YES  
   - NO
2. Do you have a regular medical provider or clinic whom you can go for yearly check-ups or when you are sick?  
   - YES  
   - NO
3. Do you have any problems (job, transportation, child care, insurance, money, or other worries) that prevent you from keeping your or your child’s health care appointments?  
   - YES  
   - NO
4. Is there anything else happening in your life that is creating stress or affect your mood, for example, relationship difficulties, work or school stress, legal or financial problems? Some people are stressed and worried about things like rent/mortgage, having a place to live, food, healthcare, formulas, daycare, childcare, transportation, or bills?  
   - YES  
   - NO
5. Do you or anyone else in your home smoke cigarettes?  
   - YES  
   - NO
6. Do you or anyone else in your home use medication not prescribed to you or use any other type of drugs?  
   - YES  
   - NO
7. Do you or anyone else in your home have a problem with alcohol or marijuana?  
   - YES  
   - NO
8. In the past year, has anyone threatened, hit, slapped, or touched you or your child in an unwanted way?  
   - YES  
   - NO
9. Have you ever suffered from or been treated for anxiety, depression, or any other emotional difficulties?  
   - YES  
   - NO
10. If you are currently pregnant and could change the timing of this pregnancy (or when this baby was born), would you want to change the timing? (Also answer NO if you are not pregnant.)  
    - YES  
    - NO

We have a resource specialist in our office that can help with any of the questions above.

Would you like to talk to her about any of the questions that you answered YES to?  
- YES  
- NO
SDH Flowsheet in Patient Chart
SDH Questionnaire in MyChart Portal
IOM Recommendations

- **IOM-Recommended Concepts**
  - Financial resource strain
  - Stress
  - Depression
  - Physical activity
  - Tobacco use and exposure
  - Alcohol use
  - Social connections and social isolation
  - Intimate partner violence
  - Race/ethnicity
  - Educational attainment
  - Neighborhood and community compositional characteristics

- **IOM-Recommended Measures**
  - Overall financial resource strain (1 Q)
  - Stress Elo et al. 2003 1 Q
  - PHQ 2
  - Exercise Vital Signs (2 Q)
  - NHIS (2 Q)
  - AUDIT-C (3 Q)
  - NHANES III (4 Q)
  - HARK (4 Q)
  - US census (2 Q)
  - Educational attainment (2 Q)
  - Residential address
  - Census tract-median income
Ordering Referral to Community Services

<table>
<thead>
<tr>
<th>Community Referrals</th>
<th>Referrals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Housing</strong></td>
<td><strong>Community Referrals</strong></td>
</tr>
<tr>
<td>Bradley Angle - Emergency, Domestic Violence (Multnomah County)</td>
<td>Native American Youth Association (NAYA) - Low Income/Subsidized (Multnomah County)</td>
</tr>
<tr>
<td>Casa Hagar - Los niños Cuenten (Cochamas, Multnomah, Washington Counties)</td>
<td>NV Pilot Project - Low Income/Subsidized (Multnomah County)</td>
</tr>
<tr>
<td>Cascade AIDS Project (CAP) - Transitional</td>
<td>Portland Rescue Mission - Transitional (Multnomah County)</td>
</tr>
<tr>
<td>Central City Concern - Housing and Resident Services - Transitional</td>
<td>Portland Women's Crisis Line / Oregon - Emergency, Domestic Violence (State of Oregon)</td>
</tr>
<tr>
<td>City Team/Emergency Housing - Emergency (City of Portland)</td>
<td>Portland Women’s Crisis Line / Oregon - Transitional (Multnomah County)</td>
</tr>
<tr>
<td>DePaul Industries - Portland Headquarters - Transitional</td>
<td>Project UNCA - Catholic Charities - Emergency, Domestic Violence</td>
</tr>
<tr>
<td>Home Forward - Low Income/Subsidized (All Multnomah Co, including Gresham, Fairview, Portland, Troutdale, and others)</td>
<td>Salvation Army - West Women’s &amp; Children’s Shelter - Emergency, Domestic Violence</td>
</tr>
<tr>
<td>HUD Oregon - Low Income/Subsidized (State of Oregon)</td>
<td>The Gateway Center - Emergency, Domestic Violence (Multnomah County)</td>
</tr>
<tr>
<td>Human Solutions - Emergency, Domestic Violence, Transitional (Multnomah Co, Outer East Portland, and East Multnomah Co)</td>
<td>Transition Projects (TP) - Transitional</td>
</tr>
<tr>
<td>Human Solutions - Low Income (Outer East Portland and East Multnomah Co)</td>
<td><strong>Nutrition</strong></td>
</tr>
<tr>
<td><strong>Community Referrals</strong></td>
<td><strong>Community Referrals</strong></td>
</tr>
<tr>
<td>City Team/Food - Hot Meals, Soup Kitchens, Community Meals (Multnomah County)</td>
<td>Multnomah County early Childhood Services - Northeast - WIC (State of Oregon)</td>
</tr>
<tr>
<td>Farmers Market - Cochamas Sunnyside</td>
<td>Oregon DHS CAF Division for Multnomah County - Meiro - SNAP, Food Stamps (Multnomah County)</td>
</tr>
<tr>
<td>Grange Farmers’ &amp; Artisans’ Market - SNAP, Food Stamps</td>
<td></td>
</tr>
</tbody>
</table>
Addressing SDH

- Referrals to onsite staff to assist
- Linkage to CBOs that have expertise to provide wrap-around services
- Substance Use Treatment (e.g. Buprenorphine/Methadone, Alcoholism)
- Etc.
Summary

- SDH are a major driver of HIV treatment and prevention uptake and outcomes
- SDH also influence linkage, retention, and adherence
- Short tools exist to collect SDH data and may be required for HER MU
- PDSA cycles can aid in implementing SDH screening tools
- Holistic focus can help achieve health outcomes for all.
Question/Discussion