Why Pills Alone Are Not the Silver Bullet

People Who Use Drugs

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Global HIV Epidemic Among PWIDs

- Outside of Sub Saharan Africa, 33% of all new HIV infections are among PWIDs
- From 2001 to 2011, new annual HIV infections decreased from 3.2 to 2.5 million annually (-22%)
  - Most reductions occurred in Sub Saharan Africa
  - +25% in Eastern Europe, Central and SE Asia – low ART coverage!
- In countries where HIV incidence is increasing, 70% to 80% of HIV cases are among PWIDs
- Where comprehensive HIV prevention packages for PWIDs exist, HIV transmission has ↓

Evidence-Based Strategies to Reduce HIV Transmission Among PWUDs

Primary & Secondary
- NSP
- MAT
- HIV C&T
- PrEP

Secondary Only
- ART
Treatment as Prevention Can Work Among PWIDs, but …..

- Ecological studies in Vancouver and Baltimore have documented reduced transmission among PWIDs where community VL has decreased.

- The HIV Continuum of Care for PWUDs is not equal to their non-drug using counterparts:
  - HIV diagnosis
  - Linkage to care
  - Retention in care
  - Receipt of ART
  - ART adherence
  - Viral Suppression

  Differs based on local context and funding priorities.
Engagement in Care Among PWIDs in Baltimore, ALIVE Cohort, 1998-2011

Westergaard, AIDS 2013
### Engagement in Care Among PWIDs in Baltimore, ALIVE Cohort, 1998-2011

#### Poor Retention in Care
- Active drug injection
- Incarceration
- No health insurance
- No usual site of care
- Lack of consistency in HIV care provider

#### Poor Viral Suppression
- Active drug injection
- Alcohol use
- Crack cocaine use
- Incarceration
- Lack of consistency in HIV care provider
- Decreasing CD4 count

Westergaard, AIDS 2013
Integrating Buprenorphine Into HIV Clinical Care Settings

Prescribed ART

<table>
<thead>
<tr>
<th></th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
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</thead>
<tbody>
<tr>
<td>On BPN/NX &lt;3 Quarters (N=55)</td>
<td>5.5</td>
<td>9.1</td>
<td>10.9</td>
<td>16.4</td>
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<tr>
<td>On BPN/NX 3 or 4 Quarters (N=64)</td>
<td>27.3</td>
<td>36.7</td>
<td>41.3</td>
<td>41.0</td>
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</table>

Viral Suppression

<table>
<thead>
<tr>
<th></th>
<th>Q0</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
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</thead>
<tbody>
<tr>
<td>On BPN/NX &lt;3 Quarters (N=55)</td>
<td>7.2</td>
<td>17.2</td>
<td>45.2</td>
<td>57.3</td>
<td>62.6</td>
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<tr>
<td>On BPN/NX 3 or 4 Quarters (N=64)</td>
<td>16.4</td>
<td>16.4</td>
<td>14.5</td>
<td>18.2</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Altice FL et al, JAIDS, 2011
Treatment of HIV-Infected Persons for Prevention of HIV Transmission

Organization of Healthcare Delivery for HIV+ PWID's Matters (Ukraine)

Bachireddy C, Drug Alcohol Depend, 2013
Incarceration: High Risk Transmission Environment Among HIV+s (Ukraine)

Mean number of people sharing among injectors = 4.4 (0-30)

Only 19.4% received ART

Retention in Care Among HIV+ Jail Detainees: Results from a Multi-Site Study (N=867)

*Althoff, AIDS Behav, 2012*
HIV+ Jail Detainees

Heightened Instability Post-Release

At 6 months

Meyer JP et al, AJPH, In Press
Interventions to Improve ART Adherence Among People with SUDs


Mahnaz R. Charania · Khiya J. Marshall · Cynthia M. Lyles · Nicole Crepaz · Linda S. Kay · Linda J. Koenig · Paul J. Weidle · David W. Purcell · HIV/AIDS Prevention Research Synthesis (PRS) Team

AIDS & Behavior, 2013

Guidelines for Improving Entry Into and Retention in Care and Antiretroviral Adherence for Persons With HIV: Evidence-Based Recommendations From an International Association of Physicians in AIDS Care Panel

Melanie A. Thompson, MD; Michael J. Mugavero, MD, MHSc; K. Rivet Amico, PhD; Victoria A. Cargill, MD, MSCE; Larry W. Chang, MD, MPH; Robert Gross, MD, MSCE; Catherine Orrell, MBChB, MSc, MMed; Frederick L. Altice, MD; David R. Bangsberg, MD, MPH; John G. Bartlett, MD; Curt G. Beckwith, MD; Nadia Dowshen, MD; Christopher M. Gordon, PhD; Tim Horn, MS; Princy Kumar, MD; James D. Scott, PharmD, MEd; Michael J. Stirratt, PhD; Robert H. Remien, PhD; Jane M. Simoni, PhD; and Jean B. Nachega, MD, PhD, MPH
Evidence-Based Retention and Adherence Interventions for PWUDs

● Directly administered antiretroviral therapy (DAART)
  - Costly, time intensive, inconvenient for some

● DAART integrated into methadone treatment
  - Inadequate numbers on MMT, impact of take-home doses

● Provision of opioid substitution therapy with methadone or buprenorphine
  - Low OST coverage in many countries that need it

● Integration of health services
Alcohol & Adherence: Peruvian MSM

Ferro E et al, IAS 2013
Contribution of Alcohol & Drug Use to Risk Behaviors Associated with HIV Transmission

Ludford K et al. PLoS One, 2013
How to Manage Risk Behaviors and/or Adherence

- They are often linked – but not always!
- Comprehensive behavioral intervention that incorporates alcohol & drug reduction?
  - Very few DEBIs address drug/alcohol use
- Pharmacotherapies?
  - Naltrexone
    - Oral
    - XR-NTX
  - Acamprosate
  - Disulfiram
# PrEP Trials Are Efficacious in MSM, Heterosexuals, and PWIDs

<table>
<thead>
<tr>
<th>Trial</th>
<th>Population/Setting</th>
<th>Intervention</th>
<th>HIV Infections, n</th>
<th>HIV Risk Reduction, % (95% CI)</th>
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</thead>
<tbody>
<tr>
<td>iPrEX</td>
<td>MSM, transgender women, 11 sites in US, South America, Africa, Thailand</td>
<td>TDF/FTC</td>
<td>36 64</td>
<td>44 (15-63)</td>
</tr>
<tr>
<td>(N=2499)</td>
<td>Partners PrEP</td>
<td>TDF</td>
<td>13 52</td>
<td>75 (55-87)</td>
</tr>
<tr>
<td>(N=4747)</td>
<td>Serodiscordant couples in Africa</td>
<td>TDF/FTC</td>
<td>17 67</td>
<td>67 (44-81)</td>
</tr>
<tr>
<td>TDF2</td>
<td>Heterosexual males and females in Botswana</td>
<td>TDF/FTC</td>
<td>10 26</td>
<td>62 (16-83)</td>
</tr>
<tr>
<td>(N=1219)</td>
<td>Thai PWID</td>
<td>TDF</td>
<td>17 33</td>
<td>49 (10-72)</td>
</tr>
<tr>
<td>(N=2413)</td>
<td></td>
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</table>

Adherence: Key Contributor to Outcome in PrEP Trials (Detectable TDF Levels)

Differences in Adherence Translated to Relative Risk Reduction in Transmitting HIV

Bangkok TDF Study: Adherence to PrEP and Risk of HIV Acquisition

Patients Uninfected By Level of Adherence

<table>
<thead>
<tr>
<th>Adherence</th>
<th>Uninfected Pts (%)</th>
</tr>
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<tbody>
<tr>
<td>mITT</td>
<td>49</td>
</tr>
<tr>
<td>&gt; 67%</td>
<td>54</td>
</tr>
<tr>
<td>&gt; 75%</td>
<td>58</td>
</tr>
<tr>
<td>&gt; 90%</td>
<td>68</td>
</tr>
<tr>
<td>&gt; 95%</td>
<td>72</td>
</tr>
<tr>
<td>&gt; 97.5%</td>
<td>84</td>
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Nanosuspensions: drug nanocrystals suspended in liquid
  - Increased drug dissolution rate
  - Nanocrystal design allows for low injection volume

Potential utility as long-acting injections for ART regimens, PrEP
  - GSK1265744 (DTG analogue) dosed monthly or every 90 days
  - TMC278 nanosuspension of RPV dosed monthly

Sustained Released Pharmacotherapies

Emerging sustained activity for treatment of substance use disorders

- XR-NTX
- XR-BPN
- Implantable NTX and BPN
**Eco-Social Model:**  
*Need to Address ALL Key Issues*

**Policy**
- HIV testing guidelines
- HIV treatment guidelines
- Siloed funding sources
- Treatment funding
- Prevention
- Coordination

**Community**
- Stigma
- Poverty
- Social norms
- Neighborhood
- Employment
- Corrections

**Relationships**
- Sex Partners
- Family
- Friends
- Social Networks
- Med Providers
- Case Managers

**Individual**
- Sex
- Age
- Race/ethnicity
- Mental health
- Substance use
- Insurance
- Housing
- Transport
- Income
- Social support
- Food security
- CJ status
- Severity
- Comorbidities
- Health beliefs
- Past experiences

**Enabling**
- Communication factors
  - Trust
  - Communication
  - Longevity
  - Concordance
- Organization
- ASOs/CBOs
- Clinic proximity
- Clinic culture
- Appointments
- Supportive svcs
- Integrated svcs

**Health System**
- Quality indicators
- Service coordin.
- Reimbursement
- Workforce
- Incarceration

**Communication Factors**
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**Need**
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**Predisposing**
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- Race/ethnicity
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"Half of everything we teach you is wrong... unfortunately, we don't know which half."