THE NEW NORMAL:
SEXUAL HEALTH IN THE TASP AND PREP ERA

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UCLA AIDS Program Rounds
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thefenwayinstitute.org
SO MUCH TO SAY, SO LITTLE TIME

- Postcard from the edge: Fenway Health
- The new paradigm: PrEP and TasP
- New challenges and opportunities
- Diverse subgroups, one size won’t fit all
- Sources of health disparities
- Importance of providers for success of the new paradigm
FENWAY HEALTH: COMPREHENSIVE CARE

• Primary health care, community health center
• Specialty care (HIV/AIDS, obstetrics, gynecology, podiatry, dermatology and nutritional counseling)
• Behavioral health and addiction services
• Family dental care and eye care
• Full-service pharmacy
• Complementary therapies (chiropractic, massage, and acupuncture)
• HIV counseling & testing (AIDS Action Committee)
• Health promotion and community outreach
• Violence prevention and recovery
• Family services, including assisted reproduction
FENWAY HEALTH PATIENT TRENDS
2006-2014

Number of Unduplicated Patients

Calendar Year

- 2006: 10,244
- 2007: 10,387
- 2008: 10,976
- 2009: 13,153
- 2010: 15,218
- 2011: 19,199
- 2012: 20,337
- 2013: 22,086
- 2014: 25,709
SEXUAL ORIENTATION OF PATIENTS WHO REPORTED DATA IN CY2014 (N=16,303)

- Bisexual: 6%
- Lesbian/Gay/Homosexual: 3%
- Straight/Heterosexual: 44%
- Something Else: 4%
- Don't Know: 6%
THE FENWAY INSTITUTE

• Interdisciplinary center of excellence
• Focus on health promotion, disease prevention
• Addresses the needs of LGBT communities, PLHIV and other underserved populations
• Research and evaluation, professional development, and health policy advocacy.
• About 20 faculty, many with primary appointments at local Boston academic ctrs
• NIH clinical trials (HTPN, HVTN, ATN, STI CTG)
• EHR since 1997, large database projects (CNICS, NA ACCORD, HIVRN, CHARN, ADVANCE)

www.thefenwayinstitute.org
The New Paradigm: Part 1: TasP

- **HPTN 052: Treatment as Prevention**
- **Public Health Benefit**
- **Begin treatment at any CD4+ T-cell count**

- **START and Temprano Studies: Early Treatment**
- **Individual Health Benefit**
### Opposites Attract: MSM Couples

**HIV ‘Treatment as Prevention’ : Opposites Attract**

<table>
<thead>
<tr>
<th>Type of condomless anal intercourse (CLAI) reported by HIV-negative partner</th>
<th>Linked transmissions (n)</th>
<th>Couple-years of follow up (CYFU)</th>
<th>No. of CLAI acts</th>
<th>Incidence rate per 100 CYFU (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>0</td>
<td>149.96</td>
<td>5,905</td>
<td>0 (0-2.46)</td>
</tr>
<tr>
<td>Any CLAI</td>
<td>0</td>
<td>90.83</td>
<td>5,905</td>
<td>0 (0-4.06)</td>
</tr>
<tr>
<td>Insertive CLAI</td>
<td>0</td>
<td>77.87</td>
<td>3,569</td>
<td>0 (0-4.74)</td>
</tr>
<tr>
<td>Receptive CLAI</td>
<td>0</td>
<td>57.08</td>
<td>2,337</td>
<td>0 (0-6.46)</td>
</tr>
<tr>
<td>Any CLAI when VL &lt;200 copies</td>
<td>0</td>
<td>88.59</td>
<td>5,656</td>
<td>0 (0-4.16)</td>
</tr>
<tr>
<td>Any CLAI when VL &gt;200 copies</td>
<td>0</td>
<td>2.00</td>
<td>237</td>
<td>0 (0-184.31)</td>
</tr>
</tbody>
</table>

(Grulich et al., 2015, CROI)
Protection from whom?
Non-monogamy is common: consider protection from other partners

- Any sex with outside partners in previous 3 months:
  - Thailand: 36%
  - Brazil: 23%
  - Australia: 48%
  - Total: 39%

- Any condomless anal intercourse with outside partners in previous 3 months:
  - Thailand: 9%
  - Brazil: 3%
  - Australia: 28%
  - Total: 17%

B Bavinton et al IAS 2015 abstract TUAC0306
Clinical trial evidence for oral and topical tenofovir-based prevention (April 2015)

<table>
<thead>
<tr>
<th>Study</th>
<th>Effect size (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Partners PrEP - daily oral TDF/FTC</strong></td>
<td>75% (55; 87)</td>
</tr>
<tr>
<td>(Discordant couples - Kenya, Uganda)</td>
<td></td>
</tr>
<tr>
<td><strong>Partners PrEP - daily oral tenofovir</strong></td>
<td>67% (44; 81)</td>
</tr>
<tr>
<td>(Discordant couples - Kenya, Uganda)</td>
<td></td>
</tr>
<tr>
<td><strong>iPrEx - daily oral TDF/FTC</strong></td>
<td>44% (15; 63)</td>
</tr>
<tr>
<td>(MSM - North and South America, Thailand, South Africa)</td>
<td></td>
</tr>
<tr>
<td><strong>PROUD - daily TDF/FTC</strong></td>
<td>86% (58; 96) (90% CI)</td>
</tr>
<tr>
<td>(MSM - UK)</td>
<td></td>
</tr>
<tr>
<td><strong>IPERGAY - intermittent TDF/FTC</strong></td>
<td>86% (40; 69)</td>
</tr>
<tr>
<td>(MSM – France, Canada)</td>
<td></td>
</tr>
<tr>
<td><strong>Hetrosexual men and women</strong></td>
<td>62% (22; 84)</td>
</tr>
<tr>
<td><strong>TDF2 - daily TDF/FTC</strong></td>
<td></td>
</tr>
<tr>
<td>(Heterosexual men and women - Botswana)</td>
<td></td>
</tr>
<tr>
<td><strong>CAPRISA 004 - “BAT-24” dosing vaginal tenofovir gel</strong></td>
<td>39% (6; 60)</td>
</tr>
<tr>
<td>(Women - South Africa)</td>
<td></td>
</tr>
<tr>
<td><strong>FACTS 001 - “BAT-24” dosing vaginal tenofovir gel</strong></td>
<td>0% (−1; 2)</td>
</tr>
<tr>
<td>(Women - South Africa)</td>
<td></td>
</tr>
<tr>
<td><strong>MTN 003/Voice - daily vaginal dosing tenofovir gel</strong></td>
<td>15% (−21; 40)</td>
</tr>
<tr>
<td>(Women - South Africa, Uganda, Zimbabwe)</td>
<td></td>
</tr>
<tr>
<td><strong>FEMPrEP - daily oral TDF/FTC</strong></td>
<td>6% (−52; 41)</td>
</tr>
<tr>
<td>(Women - Kenya, South Africa, Tanzania)</td>
<td></td>
</tr>
<tr>
<td><strong>MTN 003/Voice - daily oral TDF/FTC</strong></td>
<td>−4% (−49; 27)</td>
</tr>
<tr>
<td>(Women - South Africa, Uganda, Zimbabwe)</td>
<td></td>
</tr>
<tr>
<td><strong>MTN 003/Voice - daily oral tenofovir</strong></td>
<td>−49% (−129; 3)</td>
</tr>
<tr>
<td>(Women - South Africa, Uganda, Zimbabwe)</td>
<td></td>
</tr>
<tr>
<td><strong>People who inject drugs</strong></td>
<td>49% (10; 72)</td>
</tr>
<tr>
<td><strong>Bangkok tenofovir study – daily oral tenofovir</strong></td>
<td></td>
</tr>
<tr>
<td>(IDUs - Thailand)</td>
<td></td>
</tr>
</tbody>
</table>

UK GU Med Clinics: PROUD Study

- Significantly fewer new HIV infections with immediate versus deferred PrEP (3 versus 19 cases)
  - 86% reduction ($P=0.0002$)
  - Number needed to treat to prevent 1 infection: 13
- PEP used by 31% in deferred arm
- Risk behaviors were similar between the 2 arms

PEP: post-exposure prophylaxis.

PrEP Demo: STI positivity
(Liu, Cohen, JAMA Int Med, 2015)

Overall STI incidence (90/100 person years) remained stable during follow-up (P>0.1)
Fenway Health: PrEP and Rx Experience

- 85.5% of initiators still on PrEP; Longest: 3.8 years
- 95.1% identified as gay
- Socio-demographics reflective of community
- 158 zip codes
- “Gayborhood” <10%
- Private Ins: 80.7%; Medicare: 9%; Medicaid: 8.7%
- More than 30 prescribers now
- About 1/4 HIV- MSM on PrEP
- HIV viral suppression rate: 87%

Bar chart showing the number of patients per year: 2011 N=5, 2012 N=20, 2013 N=102, 2014 N=536.

*2015 data from 1/1 to 8/31 only
Gonorrhea by Site: Fenway Health
2003-2015

Number of Cases Diagnosed

Rectal
Urethral

Year
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

Cases Diagnosed
0
50
100
150
200
250
300
350
400
450

to 08/31
Multifactorial Nature of STD Risk

- **Individual behavior**: number of partners/time
- **Biology**
  - Specific sex acts associated with different STD
  - Particularly, anal intercourse ↑susceptibility to HIV, other STD
  - Role versatility: receptive can be insertive
- **Networks**
  - HIV/STD per contact risk ↑in high prevalence settings
  - Assortative mixing in sub-groups, e.g. racial/ethnic minorities
  - Sexualized venues, e.g. bathhouses, social media, sex work
- **Structural/Societal**
  - Homophobia, bullying leads to early developmental stress, depression, lack of self-efficacy and subsequent risk
  - Criminalization and discrimination in health care settings impede disclosure and receipt of timely health services
“MSM” is an epidemiological term

Reality is more complex

One size does not fit all

MSM Cosmology in Mumbai

“No, we are not twins.”

<table>
<thead>
<tr>
<th>Infection</th>
<th>Married MSM (N=95)</th>
<th>Unmarried MSM (N=212)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crude</td>
<td>RDS adjusted</td>
<td>Crude</td>
</tr>
<tr>
<td>HIV</td>
<td>9.5%</td>
<td>14.4%</td>
<td>7.6%</td>
</tr>
<tr>
<td>Syphilis</td>
<td>4.3%</td>
<td>1.0%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>3.2%</td>
<td>8.5%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>13.8%</td>
<td>14.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Any STD</td>
<td>17.9%</td>
<td>18.3%</td>
<td>12.7%</td>
</tr>
</tbody>
</table>
Life course perspective: Growing up and coming out

- Same sex behavior and gender non-conformity remains stigmatized in most societies
- Societal messages remind LGBT Youth they are not accepted (marriage pressure, exclusion from military)
- LGBT Youth may encounter loss of friends, lack of family support, religious abandonment, and verbal or physical abuse, resulting in adverse health outcomes
- External stigma may → internalized homophobia → depression, substance use

- Sexual expression is happening earlier

Syndemics and MSM (Stall and Herrick)
Social Cognitive Model

Pleasure reduction

Disease prevention

Social Models

Self efficacy

Safer Sex Adherence

Depression, anxiety, mental health problems, substance use

Wulfert, Safren, et al., 1999; Journal of Applied Social Psychology
Resilience in the Face of Stress?
Majority of MSM and other LGBT people are not infected or at increased risk

<table>
<thead>
<tr>
<th>No. of Psychosocial Health Problems</th>
<th>0 (n = 1,392)</th>
<th>1 (n = 812)</th>
<th>2 (n = 341)</th>
<th>3 or 4 (n = 129)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent high risk sex</td>
<td>7%</td>
<td>11%</td>
<td>16%</td>
<td>23%</td>
</tr>
<tr>
<td>HIV prevalence</td>
<td>13%</td>
<td>21%</td>
<td>27%</td>
<td>22%</td>
</tr>
</tbody>
</table>

All associations have \( p \)'s < 0.001.
All \( p \) values are two-tailed.

From Stall et al., 2003
Supporting MSM Resilience
(Safren, Thomas, et al)

- Stigmatized group
- Hidden population
- Pressure to marry/have children
- Psychosocial stressors
  - Victimization
  - Harassment
  - Fear of rejection from friends and family
  - Discrimination
  - Depression/Suicidality

Need to supplant social isolation with support programs and skills building
How to improve chemoprophylaxis effectiveness?

1. New oral PrEP drugs and dosing strategies
2. Vaginal & Rectal Microbicides (MTN 007, MTN 017)
3. Intravaginal rings (MTN 013, MTN 023)
4. Novel adherence strategies
   - Injectables: ARVs and mAbs (Cabotegravir, HVTN 104)
5. Alternative delivery systems and formulations

The Future
NEXT EXIT

NEXT PrEP
AN HPTN029 STUDY

HPTN067
ADAPT

IPERGAY
un essai ANRS\9737
Intervention
Anti-Viral
Exposure
Reductie
des sexualite
les Gays
Intersectionality: Disparities persist between black and other MSM throughout treatment cascade (24 comparative studies)

"To eliminate difference in viral suppression, an estimated additional 38,920 black MSM and 17,043 Latino MSM would need to be on treatment to raise viral suppression to levels on par with white MSM aware of their infection (56%)."  (Hall, 2013)
Tailoring PrEP for Key Populations

HPTN 073 Black MSM
Client-centered care coordination (C4)  
(Wheeler/Fields)

ATN 110/113

- YMSM 15-22 y.o.
- PreP + Individual vs. group EBI behavioral intervention  (Hosek et al)

We’ve launched a new PrEP demonstration project for Black men who have sex with men.

Participate in the live Twitter chat on Wednesday, August 14 at 10 am PT / 1 pm ET
With our guests: @JonPaulLucas and @cchauncey
Be sure to follow @HIVptn

Join the HPTN 073 Webinar:
“Introducing HPTN 073: A BMSM PrEP Demonstration Study”
at 11 am PT / 2 pm ET

Find out more about HPTN 073 at www.HPTN.org and at Facebook/HIVptn
New technologies and PrEP adherence

- ↑ treatment adherence with text messaging (Lester, Lancet, 2010)
- Wisepill: cell-phone size device, provides real time signal when pillbox opened
- Life-Steps intervention has been modified for PrEP use, including daily SMS with pts (Safren/Mayer)
- Next step counseling in iPrEX Ole, augmented by electronic diary in SF and Chicago was associated with ↑ adherence (Amico/Hosek)
- Feedback on drug levels been studied as adjunct to counseling (Landovitz)
- SexPro App being developed (Buchbinder/Lama)
- Augmented lower tech approaches, e.g. home visits are effective (Haberer, JAIDS, 2014)
<table>
<thead>
<tr>
<th>Site</th>
<th>HIV Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campinas, Brazil</td>
<td>14%</td>
</tr>
<tr>
<td>Shenzhen, China</td>
<td>5%</td>
</tr>
<tr>
<td>Moscow, Russia</td>
<td>16%</td>
</tr>
<tr>
<td>Transgender (14 Countries)</td>
<td>15%</td>
</tr>
</tbody>
</table>

(Tun, STI, 2008; Cai, STI, 2010; Baral, AIDS Care, 2010, Operario, JAIDS, 2008)

What is the role of conditional cash transfer? Galarraga et al, JIAS, 2014
Prevalence

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV</td>
<td>2.3%</td>
</tr>
<tr>
<td>HCV</td>
<td>2.2%</td>
</tr>
<tr>
<td>Syphilis</td>
<td>2.0%</td>
</tr>
<tr>
<td>GU CT</td>
<td>1.0%</td>
</tr>
<tr>
<td>GU GC</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
24.7% sexually active MSM=492,000
18.5% of PWID=115,000
0.4% of heterosexual adults=624,000
Data derived from national probability surveys
Proportion of Participants Reporting PrEP Awareness, Interest, and Use
(Manhunt surveys, 8/13 and 1/14)

Overall Sample
6683/4759

Reported Condomless Anal Sex
3826/3141

Heard of PrEP
- Overall Sample: 27.3%
- Reported Condomless Anal Sex: 31.1%

Interested in PrEP
- Overall Sample: 50.8%
- Reported Condomless Anal Sex: 54.1%

Taken PrEP
- Overall Sample: 1.2%
- Reported Condomless Anal Sex: 2%
Factors Associated with PrEP Use among US MSM Multivariable Model, Manhunt Survey, 1/14
(Mayer, AIDS and Behavior, 2015; Oldenburg et al, AIDS, 2015)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Multivariable OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>College graduate or above (vs. less than college education)</td>
<td>5.33 (1.25 to 22.7)</td>
</tr>
<tr>
<td>Ever diagnosed with an STI</td>
<td>2.74 (1.36 to 5.52)</td>
</tr>
<tr>
<td>Used PEP</td>
<td>16.0 (8.24 to 31.2)</td>
</tr>
<tr>
<td>Comfortable talking with provider about MSM sex</td>
<td>4.19 (1.51 to 11.6)</td>
</tr>
</tbody>
</table>

MSM in states that were more LGBT supportive were more likely to use PrEP, be out to their providers, and less likely to engage in condomless sex
New PrEP Starts per Quarter

Total Unique Individuals = 8,512

332% increase

IMS National Prescription Database accounts for approx. 39% of all TVD prescriptions
Examples of early adopters:
U.S. Cities Involved in Demonstration Projects

- San Francisco (2)
- Boston (2)
- Miami
- D.C.
- Chicago (2)
- Los Angeles (2)
- San Diego
- Rochester
- NYC (2)
- Oakland
- Orlando
- Philadelphia (2)
- New Orleans
- Memphis
- Houston (2)
- Detroit
- Baltimore
- Austin
- Cleveland
- Atlanta
- Dallas
- Nashville
- Chapel Hill
- Providence
- Newark
- Philadelphia (2)
- Baltimore
- Bethesda
- Annandale
- Seattle (2)

Demonstration and Implementation projects have a planned enrollment of approximately 8,000 participants.

* NYC = Manhattan, Harlem, Bronx and Brooklyn
Purview paradox: contradictory beliefs about which providers will prescribe PrEP
(Krakower, AIDS and Behavior, 2014)

HIV providers:
Primary care providers are in the best position to prescribe PrEP

Primary care providers:
It would not be feasible to prescribe PrEP
A Long History of Bias in Healthcare

• **Survey of California physicians (1982 and 1999):**
  – 1982: 39% were sometimes or often uncomfortable providing care to LGBT patients (Mathews et al., 1986)
  – 1999: 18.7% were sometimes or often uncomfortable providing care to LGBT patients (Smith and Mathews, 2007)

• **National survey 2007 of general public:**
  – 30.4% would change providers upon finding out their provider was gay/lesbian (Lee et al., 2008)
  – 35% would change practices if found out that gay/lesbian providers worked there

• **2005/6 surveys of medical students** (AAMC reporter, 2007)
  – 15% aware of the mistreatment of LGBT students
  – 17% of LGBT students reported hostile environments
Culturally Competent Care

• SOGI minority pts have may receive suboptimal care, being reticent to disclose to providers because of fears of stigma

• Many health care providers are unaware of the diversity of SOGI pts and their different health conditions

• Ironically, health care providers could be very helpful to SOGI pts in their coming out process because of their societal role

• Culturally-competent care is a basic human right, and is essential for optimal clinical outcomes

(Gonser, J Cult Divers, 2000; Meyer, AJPH, 2001; Mayer, AJPH, 2008; Bettancourt, Cultural Competence in Health Care, 2002)
New England providers perceived numerous barriers to prescribing PrEP (Krakower, PLOS ONE, 2015)

- Lack of patient requests: 7% not a barrier, 22% minor barrier, 45% moderate barrier, 26% major barrier.
- Concerns about insurance coverage: 10% not a barrier, 26% minor barrier, 31% moderate barrier, 32% major barrier.
- Clinicians not trained to prescribe PrEP: 14% not a barrier, 22% minor barrier, 30% moderate barrier, 35% major barrier.
- Clinicians not aware of CDC guidance: 19% not a barrier, 22% minor barrier, 33% moderate barrier, 25% major barrier.
- Time constraints: 22% not a barrier, 38% minor barrier, 31% moderate barrier, 9% major barrier.
- Clinicians not aware of PrEP: 23% not a barrier, 27% minor barrier, 31% moderate barrier, 20% major barrier.
- Limited # at-risk patients: 27% not a barrier, 33% minor barrier, 25% moderate barrier, 15% major barrier.

Numbers represent percentage for each response category: not a barrier, minor barrier, moderate barrier, major barrier. Bars total to 100%.
• 415 ID docs on national listserv.
• Most HIV specialists
• Almost all comfortable starting HAART independent of CD4
• 66% would defer HAART if active substance use
• 31.8% had prescribed PrEP
• Those who defer HAART were less likely to prescribe PrEP
Combine Antiretroviral Prevention

Interventions to Increase Testing

Test

HIV Negative
Risk Assessment
PrEP, Adherence Counseling

HIV Positive

Positive Prevention

Linkage To Care

Enroll in Care

ART Initiation

Treat

Adherence to ART

Maintain Viral Suppression

Decrease in HIV Transmission

Address concomitant concerns:
depression, substance use, relationship dynamics
Thank you
Stef Baral
Linda-Gail Bekker
Chris Beyrer
Robert Grant
Andrew Grulich
Catherine Finneran
Javier Lama
Harvey Makadon
Jeanne Marrazzo
Ian McGowan
Greg Millett
Matthew Mimiaga
Conall O’Cleirigh
Sari Reisner
Steven A. Safren
Jorge Sanchez
Ron Stall
Patrick Sullivan
NIAID, NIMH, NIDA, NICHD, CDC, HRSA, Mass DPH

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