Interventions to improve PrEP and ART uptake and adherence among adolescent girls and young women

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• I have no actual or potential conflicts to declare in relation to this programme and presentation

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Outline

• PrEP adherence interventions
• ART adherence interventions
• Summary

Socio-ecological approach
Socio-ecological approach

(Kaufman, JAIDS 2014)

**FIGURE 1.** Factors influencing HIV-related behavior and/or behavior change at each level of the socio-ecological model.
Reasons for non-adherence in FEM-PrEP

(Corneli, JAIDS 2016)
PrEP uptake and adherence interventions
Prevention-effective adherence

• Prevention-effective adherence: alignment of adherence and risk for HIV acquisition

Prevention-effective adherence paradigm: Success is achieved because PrEP is used during all episodes of HIV exposure. Adherence to PrEP may be periodic and mapped to periods of risk.

• PrEP use in this way can be highly efficient: maximal protection with minimal individual burden and cost

• May be particularly relevant (and challenging) for youth

(Haberer, AIDS 2015)
Individual barriers

- Neurocognitive development
  - Novelty-seeking, sensation-seeking, impulsivity, increased peer interactions, risk taking limbic (socio-emotional) system, dopamine-rich circuitry
  - Eventually overridden by development of the prefrontal cortex

Individual barriers

- Lack of knowledge: PrEP is new!
- Lack of appreciation/denial of risk for HIV acquisition
- Lack of familiarity with daily pill taking and/or preventive care
- Common considerations
  - Depression
  - Alcohol use
  - Self-efficacy and empowerment
  - Perceptions of social norms

Individual interventions

• Educational campaigns/demand creation
• Reframing of PrEP as a lifestyle choice (Bekker, CROI 2018)
• Counseling
  • Self-efficacy and self-empowerment
  • Motivational interviewing to overcome barriers (Psaros, JAIDS, 2014)
• Technology (e.g., SMS reminders) (Liu IAPAC 2017)
• Adherence feedback (Etima, R4P 2014)
  • Dried blood spots
  • Urine
  • Hair
PrEP is a new way to protect yourself from HIV. Taken every day, it helps you stay HIV free.

5 FACTS ABOUT PREP:

1. PrEP is a new pill you take once a day to prevent HIV. If you have sex with someone and there is enough PrEP in your blood, it will stop HIV from spreading.
2. PrEP works best if you take it every day.
3. PrEP doesn’t protect against other STIs or pregnancy.
4. PrEP is private - you don’t need to tell anyone you’re using it, if you don’t want to...
5. PrEP is safe - a few people may experience mild side effects, which go away after a couple weeks.

DTHF IS LOOKING FOR YOUNG WOMEN AGE 16–25 THAT WANT TO BE PART OF THE GENERATION TO END HIV.

TO FIND OUT IF PREP IS RIGHT FOR YOU, PHONE TRIMBIA (076 533 8113) OR FUZEKA (076 215 9279) OR VISIT THE DTHF YOUTH CENTRE.

Spread the word, not the virus.
Community barriers

- Stigma (e.g., perception as ART, sex work, marker of promiscuity)
- Peers
- Sexual partners and gender-based violence
- Family/community leaders
Community interventions

- Educational campaigns/social normalization
- Engagement of those beyond the individual
Structural barriers

• Transportation
• Lack of youth-friendly services
  • Physical environment
  • Hours of operation
• Legislation preventing youth from accessing PrEP (Hosek, JIAS 2016)
Structural interventions

- Alternate delivery designs
- Provider attitude training
- Legislation advocacy
- Drug formulations
  - Injectables
  - Rings
• Prospective, observational, open-label cohort study
• Youth-friendly services (Wits RHI, Johannesburg)
• Mobile delivery (Desmond Tutu Foundation, Cape Town)
• Combination with family planning (Kisumu)
• Funding: USAID
• PIs: Celum, Baeten, Bekker, Bukusi, Delany-Moretlwe
• Positive messaging and demand creation
• Built off extensive formative work and "mental models" of HIV risk and PrEP
• Development of decision-making tool
• Enrolled to date: 560/~3,000
• High uptake with diminishing retention
• Prospective cohort with embedded randomized trial of SMS reminders
• In-depth adherence analysis
• Study sites: Thika and Kisumu, Kenya
• Funding: NIMH (R01MH109309; RFA: Innovative Measures of Oral Medication Adherence for HIV Treatment and Prevention)
• PIs: Haberer, Baeten, Mugo, Bukusi
• Enrollment: 350 women, ages 18-24
• Two years of follow-up with quarterly visits
• Adherence measured with Wisepill
• Questionnaires: individual and community barriers
• Weekly SMS surveys of sexual behavior, risk perception starting at 6 months
• In depth qualitative interviews in 50 women at 0, 3 and 12 months
• Supplement to assess women who do not choose to enroll, as well as influence of peers, male partners and community leaders/parents
HPTN 082

- South Africa (Wits RHI, Johannesburg; Emavundleni, Cape Town) and Zimbabwe (Harare)
- PIs: Delany-Moretlwe, Roux, Mhlanga
- Cognitive Behavioral Theory adherence support sessions
- Two-way SMS communications
- Optional monthly adherence support clubs, drug level based counseling for those randomized to that extra intervention (1:1)
HPTN 076

• Injectable PrEP (long-acting rilpivirine) in 132 HIV-uninfected women (18-45 years)

• Zimbabwe and US

• PIs: Chirenje, Bekker

• Safe and acceptable (Sista and Tolley, IAS 2017)
ART adherence interventions
Reviews of ART adherence interventions in resource-limited settings

• Numerous reviews and recommendations
  • Chaiyachati, AIDS 2014
  • Haberer, JIAS 2017
  • Kanters, Lancet HIV 2017
  • Adejumo, JIAS 2016*
  • Ridgeway, PLoS One 2018*  *Focused on adolescents

• Evidence-base
  • Education/counseling (motivational interviewing, cognitive behavioral therapy)
  • Technology (e.g., SMS, multi-media)
  • Health systems restructuring
  • Economic support
Individual barriers

- Key issues
  - Vertical versus horizontal infection
  - Age and developmental stage

- Common considerations
  - Knowledge of HIV
  - Skills for adherence
  - Caregiver availability
  - Beliefs/expectations about HIV and treatment
  - Health status
  - Depression, alcohol use
  - Denial/coping
  - Trauma

(Haberer, Current HIV/AIDS Reports 2009; Hudelson AIDS Care 2015; Machtinger/Haberer, AIDS Behav 2012)
Evidence-based individual interventions

• Individual counseling (Jobanputra, PLoS One 2015)
  • Mixed pediatric/adult population in Swaziland
  • No effect on viral suppression

• mHealth
  • SMS reminders for missed doses per real-time electronic monitors (Orrell, JAIDS 2015)
    • Mixed adolescent/adult population (>15 years) in South Africa
    • Only treatment interruptions decreased, not average adherence or viral suppression
  • SMS with and without response (Linnemayr, AJPH 2017)
    • Adolescent only population (15-22 years) in Uganda
    • No effect on electronically monitored adherence
Community barriers

- Caregiver factors
  - HIV status
  - Stability
  - Education
  - Other supports
- Change in routine
- Stigma/disclosure
- Boarding school

Evidence-based community interventions

• Group counseling
  • Empowerment model (Kaihin, Behav Med 2015)
    • Adolescent only population in Thailand (15-24 years)
    • Adherence higher vs controls
  • Adolescents with family members, accompanying cartoon (Bhana, AIDS Care 2014)
    • Adolescent only population in South Africa (10-13 years)
    • Decreased missed doses
Evidence-based community interventions

- Patient advocates in South Africa
  - Fatti, JAIDS 2012
    - Mixed adolescent/adult population (>16 years)
    - Higher viral suppression
  - Igumbor, AIDS Care 2011
    - Mixed pediatric/adult population
    - Improved pharmacy pick up
Structural barriers

- Transportation
- Missing school
- Lack of youth-friendly services
Evidence-based structural interventions

• Youth-friendly services (Zanoni, PLoS One 2017)
  • Adolescents in South Africa
  • Improved adherence and viral suppression

• Economic empowerment (Bermudez/Ssewamala, AIDS Care 2016)
Transition planning - SMART model

Figure 1. Social-ecological model of AYA (adolescents and young adults) readiness for transition.
Summary

• Need to monitor adherence to know when, where, and how to intervene
• Adherence is dynamic; support needs to be ongoing
• Study of adherence interventions for PrEP is very early
• Experience with ART adherence interventions for adolescents greatly lags that of adults
• Interventions work best in combination and when tailored appropriately
• Critical need for individual and public health benefits
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Thank you for your attention!

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