Highlights from Adherence 2015: Advances, Challenges, and Opportunities

Michael J. Stirratt PhD
Program Chief, Adherence to Treatment and Prevention
NIMH Division of AIDS Research
• IAPAC Adherence Conference
• YouTube
• “Hollaback Girl” by Gwen Stefani
Presentation Outline (and Conference Evolution)

• ART adherence
• Care continuum
• Biomedical prevention
With Great Thanks

- Rivet Amico
- Michael Mugavero
- José Zuniga
- IAPAC
- Christopher Gordon
- Dianne Rausch
- Wairimu Chege
- Naana Cleland
- Vanessa Elharrar
- Sonja Lee
- Tia Morton
- David Purcell
- Mark Rubert
- Oni Blackstock
- Amanda Castel
- Mirjam Collette-Kempf
- Sannisha Dale
- Marjin de Bruin
- Tom Giordano
- Jessica Haberer
- Ingrid Katz
- Doug Krakower
- Robert Remien
- Steve Safren
- Jane Simoni
- Patrick Sullivan
- Ira Wilson

All views are my own!
ART ADHERENCE: ADVANCES, CHALLENGES, & OPPORTUNITIES

“There’s no pill to help you take a pill.” – Jane Simoni, #Adherence2015
Advance:
Approaching a “90” in “90-90-90”

Diminishing “Clinic Viral Load” in a
Nationally Distributed Cohort in the
United States: What’s Adherence Got to do
With It?

Jane Simoni (presenting)¹, Robin Nance¹, Ira Wilson²,
Kenneth Mayer², Frances Aunon¹, Steven Safren³, J Delaney¹,
Chris Mathews⁴, Michael Mugavero⁵, Mari Kitahata¹, Heidi Crane¹

CNICS
- CFAR Network of Integrated Clinical Systems
- HIV-positive adults in routine care
- 8 clinics across the US
- 1996 to present
- ~30,000 patients
Abstract #259

Undetectable Viral Load Increasing in CNICS clinics

In 2014, 87% undetectable!
Path to Suppression Shorter in Later Years in CNICS

Percentage of UDVL Tests Among Those On ART

- ART started before 1997
- ART started 1997-2000
- ART started 2001-2005
- ART started 2006-2009
- ART started 2010 or later
CNICS Point-of-Care Patient Surveys = Actionable Adherence Info

Heidi Crane, IAPAC Adherence 2015
Pre-Conference Symposium on High-Impact Technology
Advance: Toolbox of Effective ART Adherence Interventions is Expanding
Novel intervention for depression & adherence in Sub-Saharan Africa
Challenge: Durable suppression (still) requires ART adherence and persistence

- MMP data; ~12,000 US patients
- 80% report adherence/persistence over 12 mos
- Nonadherence &/or nonpersistence (2+ day gaps) → significantly higher viral breakthrough
Periods of viral detection are common longitudinally in individual patients

- ~14000 CNICS patients, 90% on ART
- VL > 1500 copies/ml during 23% of observation time
- → 84 days per year, per patient, on average
**Challenge: Troubling age disparities**

<table>
<thead>
<tr>
<th>Medical Monitoring Project</th>
<th>US Youth (age 18-24)</th>
<th>US Adults (age 25+)</th>
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<tr>
<td>On ART</td>
<td>70%</td>
<td>91%</td>
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<tr>
<td>Adherent</td>
<td>73%</td>
<td>86%</td>
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<tr>
<td>Suppressed</td>
<td>33%</td>
<td>61%</td>
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**Clinical and Behavioral Characteristics in US HIV-Infected Young Adults**

Linda Beer (presenting), Christine Mattson, Joseph Prejean, R. Luke Shouse
Racial/ethnic disparities in ART prescriptions and thus viral suppression

- Whites > Black / Latino in prescribed ART
- Whites > Black / Latino in viral suppression
- Controlling for ART use erases viral disparities
Challenges for Cisgender, Transgender, & Post-Partum Women

JoAnne Keatley on transgender individuals, Community Discussion Panel, Monday June 29
Opportunity:
Mobile electronic communication

oral 39 Meanings of SMS Reminders for Adherence Support Among Adults Initiating ART in Rural Southwestern Uganda
Norma Ware (presenting)¹, Monique Wyatt¹, Emily Pisarski¹, Melanie Tam¹, Esther Atukunda², Angella Musiimenta², Jessica Haberer³
¹ Harvard Medical School, Boston, MA, USA
² Mbarara University of Science and Technology, Mbarara, UGANDA
³ Massachusetts General Hospital, Boston, MA, USA

oral 87 SMS Interventions to Improve Antiretroviral Therapy Adherence: A Pilot Randomized Controlled Trial
Jessica Haberer (presenting)¹, Angella Musiimenta², Esther Atukunda², Nicholas Musinguzi², David Bangsberg¹
¹ Massachusetts General Hospital, Boston, MA, USA
² Mbarara University of Science and Technology, Mbarara, UGANDA

poster 245 Real-Time Antiretroviral Therapy Adherence Monitoring in Rural Alabama: A Proof of Concept Study Using Wisepill Technology in the United States
Kristi Stringer (presenting)¹, Corilyn Ott¹, Steven Safren², Jessica Haberer², Mirjam-Colette Kempf¹
¹ Harvard Medical School, Boston, MA, USA
² Mbarara University of Science and Technology, Mbarara, UGANDA
Opportunity: Novel assays for ART detection

210 Feasibility and Acceptability of Hair- and Dried Blood Spot-Derived ARV Biomarkers as Objective Measures of Treatment Adherence in South Africa
Reuben Robbins (presenting)¹, Hetta Gouse², Yoliswa Mtingeni², Javier Lopez Rios¹, Claude Mellins¹, John Joska², Patricia Warne¹, Robert Remien¹

241 Utility of Dried Blood Spot-Derived ARV Biomarkers as an Objective Measure of Treatment Adherence in South Africa
Patricia Warne (presenting)¹, Reuben Robbins¹, Peter Anderson², Hetta Gouse³, John Joska³, Cheng-Shiu Leu¹, Yoliswa Mtingeni³, Michelle Henry³, Javier Lopez Rios¹, Jose Castillo-Mancilla², Bruce Levin¹, Claude Mellins¹, Robert Remien¹

Correlation of TFV-DP_adj with % Wisepill openings in previous 28 days:
Exclude 6 participants with significant TFV-DP_adj but sustained absence of Wisepill openings

<table>
<thead>
<tr>
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<th>All participants (N=29)</th>
<th>Participants excluded (N=23)</th>
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<tbody>
<tr>
<td></td>
<td>N (data points)</td>
<td>r</td>
</tr>
<tr>
<td>All visits</td>
<td>142</td>
<td>.348</td>
</tr>
</tbody>
</table>
Opportunity: Systems and policy interventions to support ART use & adherence

**oral 205 Antiretroviral Prescription Delivery for Persons Living With HIV/AIDS in Alabama: Do Mailed Medications With Enhanced Pharmacy Services Affect Biologic Outcomes?**

Will Rutland (presenting)¹, Ashutosh Tamhane¹, Michael Mugavero¹, Ranjith Kasanagottu¹, James Raper¹, Anne Zinski¹

¹ University of Alabama, Birmingham, AL, USA

**poster 218 Evaluating the Effects of a Centralized Portal for ART Drug Program Access on Viral Suppression**

Ranjith Kasanagottu¹, Ashutosh Tamhane¹, Will Rutland¹, Michael Mugavero¹, James Raper¹, Anne Zinski (presenting)¹

¹ University of Alabama, Birmingham, AL, USA

Adherence and Achieving 90% Viral Suppression – Why Policy is Important

Steve Morin, PhD
Emeritus Professor of Medicine
Center for AIDS Prevention Studies
University of California, San Francisco
ART Adherence

• Advances
  – Increasing viral suppression
  – Expanding toolbox of proven interventions

• Challenges
  – Disparities in ART/adherence/viral load
  – Adherence monitoring so we can “Do the Right Thing at the Right Time” -- Ambassador Birx

• Emerging opportunities
  – Improved technologies and assays
  – Systems approaches
CARE CONTINUUM: ADVANCES, CHALLENGES, & OPPORTUNITIES

“I don’t see myself in that continuum”
-- Vanessa Johnson, #Adherence2015
Curious Cascade Complexities

• Viral suppression higher in retained patients vs. those with appt gaps
• Yet many maintained suppression out of care – esp. older patients and those on private insurance

• 35-43% of people considered not in care continued to receive HIV lab testing
• Why?
Access alone cannot erase gaps in the care cascade

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**The MSM HIV Care Cascade in Rio de Janeiro, Brazil**

*Rodolfo Castro (presenting) 1, Marcelo Ribeiro-Alves 1, Monica Derrico 1, Katia Lemos 1, José Grangeiro 2, Beto Jesus 3, Denise Pires 4, Valdilea Veloso 1, Beatriz Grinsztejn 1*

1. Fundação Oswaldo Cruz, Rio de Janeiro, BRAZIL
2. Grupo Arco-Íris, Rio de Janeiro, BRAZIL
3. International Lesbian, Gay, Bisexual, Trans and Intersex Association for Latin America and the Caribbean, Buenos Aires, ARGENTINA
4. Secretaria de Estado de Saúde do Rio de Janeiro, BRAZIL

<table>
<thead>
<tr>
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<th>~800 MSM In Rio de Janeiro</th>
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<tr>
<td>Linked</td>
<td>73%</td>
</tr>
<tr>
<td>Retained</td>
<td>69%</td>
</tr>
<tr>
<td>On ART</td>
<td>61%</td>
</tr>
<tr>
<td>Suppressed</td>
<td>38%</td>
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</table>
Disparities persist

199 Age Matters: Inconsistent HIV Care Among Adolescents and Young Adults in Nigeria
Aimalohi Ahonkhai (presenting)¹, Bolanle Banigbe², Juliet Adeola², Abdulkabir Adegke¹, Susan Regan¹, Ingrid Bassett¹, Ifeyinwa Onwuatuelo², Elena Losina¹, Prosper Okonkwo², Kenneth Freedberg¹

1 HIV Care Measured Over Multiple Time Periods Varies by Race and Ethnicity
Michael Horberg (presenting)¹,², Leo Hurley³,⁴, Daniel Klein⁵, William Towner⁶, Peter Kadlecik⁷, Carol Remmers⁸, Rebecca Gambatese⁸, Jackie Blank¹, Courtney Ellis³,⁴, Michael Silverberg³,⁴
Ambassador Birx Plenary

Achieving epidemic control with the current global budget will require delivering the Right Things in the Right Places Right Now In the Right Way

Do we have the collective will?
Geomapping: Target the Right Places

Ambassador Birx, Opening Plenary

Patrick Sullivan, Pre-Conference Tech Symposium

Amanda Castel, Oral Abstract #216

Rueben Granich, Tuesday Plenary
It’s more than place: Multilevel determinants of lost patients

- Traced 364 LTFU patients
- 59% reported structural, 46% psychosocial, 23% clinic-based, and 12% no specific barriers
- **Psychosocial barriers = longer lapses; structural barriers = shorter lapses**
- Focus on psychosocial? (e.g., stigma, denial)
The challenge of stigma

- Jason Sigurdson:
  - “The Hardest Zero”
  - HIV criminalization reform
- Ambassador Birx
  - Stigma as a major barrier
  - Pervasive in healthcare settings
  - Fresh efforts to monitor stigma
- Anna Zakowicz: Promoting love and respect
- Bob Grant: “People are more than the result of two assays.”
“Data to Care” Approaches for finding/re-linking those out of care

Data to Care: Leveraging Public Health Partnerships Across the HIV Care Continuum
Moderator: Patrick Sullivan, PhD, DVM
Presenter: Eugene McCray, MD
Panelists: Julia Dombrowski, MD, MPH; Jorge Saavedra, MD; Baligh Yehia, MD, MPP, MSHP

17 Re-Linkage and Retention in Care of HIV-Diagnosed Persons Presumed to be Out-of-Care Based on New York City HIV Surveillance Data
Chi-Chi Udeagu (presenting)¹, Christopher Williams¹, Sarah Braunstein¹

¹ New York City Department of Health and Mental Hygiene, New York, NY, USA
Social network approaches for finding/re-linking

30 Out-of-Care PLHIV in St. Petersburg, Russia, can be Located and Successfully Reached in the Community Through Their Social Network Connections

Yuri Amirkhanian (presenting)¹, Jeffrey Kelly ¹, Anna Kuznetsova², Anastasia Meylakhs², Alexei Yakovlev²
RCT of Peer Mentoring For Retention

34 Effect of Peer Mentoring to Improve Retention in HIV Care and HIV Viral Load in Hospitalized, Out-of-Care Patients

Thomas Giordano (presenting)¹, Jeffrey Cully¹, Jessica Davila¹, K. Rivet Amico², Michael Kallen³, Jackie Wear⁴, Christine Hartman⁵, Melinda Stanley¹

¹ Baylor College of Medicine, Houston, TX, USA
² University of Michigan, Ann Arbor, MI, USA
³ Northwestern University, Evanston, IL, USA
⁴ Harris Health System, Houston, TX, USA
⁵ DeBakey VA Medical Center, Houston, TX, USA

Background: Few interventions have been shown to improve retention in HIV care. Peer mentoring is used in some settings, but has not been rigorously tested.
Care Coordination: Growing Evidence for Impact

109 Improved Care Engagement and Viral Load Suppression Among HIV Care Coordination Clients With Poor Mental Health, Unstable Housing, and Substance Use at Baseline

Stephanie Chamberlin (presenting)¹, Mary Irvine¹, Rebekkah Robbins¹, Sarah Gorrell Kulkarni², McKaylee Robertson³, Denis Nash²

¹ New York City Department of Health and Mental Hygiene, New York, NY, USA
² CUNY School of Public Health, New York, NY, USA
³ Centers for Disease Control and Prevention, Atlanta, GA, USA

161 Short-Term Navigation can Lead to Successful Re-Engagement of Out-of-Care Patients With HIV: Results of San Francisco’s LINCS Navigation Program

Darpun Sachdev¹, Sharon Pipkin¹, Erin Antunez (presenting)¹, Susan Scheer¹, Stephanie Cohen¹

¹ San Francisco Department of Public Health, San Francisco, CA, USA

223 The Impact of Care Coordination Services on HIV Care Outcomes Among Formerly Incarcerated Individuals in Virginia

Lauren Yerkes¹, Kate Gilmore¹, Steven Bailey¹, Misty Johnson¹, Safere Diawara¹, Anne Rhodes (presenting)¹

¹ Virginia Department of Health, Richmond, VA, USA

282 Improvements in Retention in Care and Viral Suppression: Results From the First Year of the Medical Care Coordination Program in Los Angeles County

Wendy Garland (presenting)¹, Sonali Kulkarni¹

¹ Los Angeles County Department of Public Health, Los Angeles, CA, USA
Quaraisha Abdool-Karim:

Impacting the HIV care continuum with Implementation Science

• Implementation science is *research to promote the integration of research findings and evidence into healthcare policy and practice*

• The intent of implementation science is to:
  – investigate & address **major bottlenecks** (eg. social, behavioral, management) impeding effective implementation,
  – test **new approaches** to improve health programming, &
  – determine a **causal relationship** between the intervention and its impact.

• Below I draw upon 4 examples of implementation science to identify real-world strategies to help optimize each of the 5 key steps in the HIV care continuum
Care Continuum

• Advances
  – Growing evidence for care coordination

• Challenges
  – Structural barriers and stigma
  – Complexities in the cascade

• Opportunities
  – Data to care, geomapping
  – Social network approaches
  – Implementation science
“PrEP is a gateway drug... to primary care.”
– Demetre Daskalakis, via Sarit Golub, #Adherence2015
PrEP Care: Achieving Prevention -- and More

- 200 NYC MSM in SPARK PrEP demo project
- High oral PrEP adherence; low discontinuation
- PrEP use → connections to primary care
- Significant reductions in anxiety, stress

**Evidence that PrEP can “Do More”: Synergistic Effects on Primary Care, Insurance Status, and Mental Health**

Sarit Golub (presenting), Anita Radix, Amy Hilley, Anthony Catalanotti, Kailip Boonrai, Nora Douglas

1. Hunter College, New York, NY, USA
2. Callen-Lorde Community Health Center, New York, NY, USA

**SPARK Adherence (DBS Data)**

- 4+ pills/week (≥7000 fmol)
- Recent dose (past 48-72 hrs)

**Improve Psychological Wellbeing**

- Baseline vs. 6M Visit (n = 168)
Increases in oral PrEP uptake -- and adherence

- PrEP starts ↑ 319% from 2012-2014
- Adherence higher among those initiating PrEP in 2014 compared to 2013 (91% vs. 70% by MPR)
HIV Testing as a Conduit to PrEP Care

115 Perspectives on HIV Risk and HIV Pre-Exposure Prophylaxis (PrEP) Among Patients in an HIV Prevention Program in Houston, TX

Charlene Flash (presenting), Carmen Avalos, Xiaoying Yu, Kenneth Mayer, Thomas Giordano

1 Baylor College of Medicine, Houston, TX, USA
2 Fenway Community Health, Boston, MA, USA
Provider-Level Barriers -- and Opportunities

272 Low Adoption of PrEP Guidelines Among Health Care Providers in 2014-2015: Results of a Statewide Survey of North Carolina Primary Care Physicians

Becky White (presenting)1, Ashley Apipagyei2, Julia Hill2, Prianka Reddi1, Donald Pathman1, Adaora Adimora1, Carol Golin1

1 University of North Carolina, Chapel Hill, NC, USA
2 Gillings Global School of Public Health, Chapel Hill, North Carolina, USA

41 HIV Pre-Exposure Prophylaxis Capacity, Experience, Knowledge, Attitudes, and Barriers Among a National Sample of US Primary Care Providers and HIV Providers

Andrew Petroll (presenting)1, Laura Bogart2, Keith Horvath2, Timothy McAuliffe1

1 Medical College of Wisconsin, Milwaukee, WI, USA
2 Boston Children’s Hospital/Harvard Medical School, Boston, MA, USA
3 University of Minnesota, Minneapolis, MN, USA

183 Diffusion Of HIV Pre-Exposure Prophylaxis Into Specialist and Primary Care: A Qualitative Study With Primary Care Providers

Douglas Krakower (presenting)1, Norma Ware2, Ira Wilson3, John Wong4, Kevin Maloney1, Kenneth Mayer2

1 Beth Israel Deaconess Medical Center, Boston, MA, USA
2 Harvard Medical School, Boston, MA, USA
3 Brown University, Providence, RI, USA
4 Tufts Medical Center, Boston, MA, USA
Interest in Injectable PrEP

- 84% of MSM unaware of injectable PrEP
- Preference if offered choice:
  - 47% injectable
  - 14% daily oral
  - 10% whichever was more effective

Sharon Hillier: Need for multiple products
Towards a Prevention Cascade

Rivet Amico, Tuesday Plenary: HIV Infection Cascade

Circulating Virus

Viral Presence

Viral Entry

Viral Infection

~50,000 in US
Biomedical Prevention

• Advances
  – PrEP uptake growing
  – Great adherence in MSM
  – Synergies of PrEP, primary care, mental health

• Challenges
  – Provider-level barriers
  – Addressing “seasons of risk” – Bob Grant

• Emerging opportunities
  – PrEP linkage through testing
  – New PrEP products (injectables, vaginal ring)
  – Prevention continuum to guide/target our work
A Decade of Success,
(A set of challenges),
A World of Opportunities
NIMH Science Officers – Here to help

Chris Gordon  Cyndi Grossman  Mike Stirratt

Susannah Allison  Greg Greenwood
# Selected NIMH/NIAID HIV Research Funding Opportunities

<table>
<thead>
<tr>
<th>Targets</th>
<th>Funding Opps</th>
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<tr>
<td>Care continuum gaps</td>
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<td>Adherence to ART and PrEP</td>
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<td>Implementation science</td>
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<td>Key populations evidencing disparities</td>
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An Adherence Conference Story

Sannisha Dale, Phd