

Program and Abstracts

10th International
Conference on
**HIV TREATMENT
AND PREVENTION
ADHERENCE**



ADHERENCE 2015

A Decade of Success, A World of Opportunities

JUNE 28-30, 2015 • MIAMI

Jointly provided by



Postgraduate Institute
for Medicine



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WELCOME

Welcome to the 10th International Conference on HIV Treatment and Prevention Adherence!

This conference marks a decade of coming together from around the world to share, support, and sustain scientific advances towards fully leveraging available behavioral and biomedical treatments to promote health and well-being of people affected by and those living with HIV.

Over more recent years, the focus and content of this conference have flexed and expanded in line with advances and discoveries in the fields of HIV treatment and prevention to now include engagement in care more broadly and adherence to biomedical prevention technologies. Thankfully, the context and culture of the conference have not changed. Consistently reported as one of the most unique aspects of our annual gathering is the conference's spirit of collaboration and collegiality. Synergies, connections, insights, expanding our understanding and perspectives, and lasting professional relationships and friendships emerge from this brief opportunity to come together united by the charge of ameliorating the quality of research, care, policy, and treatment of those at risk, living with, and affected by HIV.

This year, almost 500 delegates from 25 countries will come together here in Miami. We sincerely thank each of you for making this conference a priority in what are undoubtedly busy schedules. We hope you make every opportunity to engage with a truly amazing community of diverse delegates. You will notice a number of conference-supported activities in the program that will help to create these opportunities, which we believe are an important means the International Association of Providers of AIDS Care (IAPAC) is providing to strengthen networking among a diverse group of professionals in this field.

This conference would not be possible without considerable contributions from many individuals and supporters:

- Intellectual and programmatic guidance from IAPAC President/CEO José M. Zuniga, PhD, MPH, has facilitated the creation of yet another year of high-quality plenaries and thematic oral sessions.
- We recognize the invaluable contributions of Benjamin Young, MD, PhD, IAPAC's Senior Vice President/Chief Medical Officer, and Michael J. Stirratt, PhD, a Program Chief at the National Institute of Mental Health/National Institutes of Health, in developing the scientific program, and an internationally renowned team of experts who reviewed abstract and program content.
- We are grateful for our distinguished conference faculty, including our Keynote speaker, Ambassador Deborah L. Birx, MD, the US Global AIDS Coordinator, and our Memorial Lecturer, Quarraisha Abdool Karim, PhD, of the University of KwaZulu-Natal.
- We appreciate the operational support from IAPAC Conference Manager Jonathan Hess and other staff whose work allows for the successful implementation of the conference.
- Moreover, we also are grateful for commercial support provided by AbbVie, Gilead Sciences, Merck & Co., and corporate sponsorship from ViiV Healthcare.

We hope that you fully partake of our next three days together, centered around new scientific knowledge and clinical practicum, and return to your communities reinvigorated to further study, implement, and advance the art, science, and practice of HIV treatment and prevention adherence.



K. Rivet Amico, PhD¹
Co -Chair



Michael J. Mugavero, MD, MHSc²
Co -Chair

¹ University of Michigan, Ann Arbor, MI, USA

² University of Alabama at Birmingham, Birmingham, AL, USA



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CONFERENCE INFORMATION

GENERAL INFORMATION

TARGET AUDIENCE

The target audience for the 10th International Conference on HIV Treatment and Prevention Adherence (Adherence 2015) includes physicians, nurses/nurse-practitioners, pharmacists, psychologists, behavioral researchers, social scientists, epidemiologists, social workers, case managers, AIDS service organization (ASO) staff, and allied healthcare and lay professionals working in the field of HIV medicine.

STATEMENT OF NEED

The preventative and therapeutic benefits of antiretroviral therapy are only achievable when patients are optimally engaged in a continuum of HIV care, including linkage to care, adherence to treatment, and long-term viral suppression through ongoing engagement in care. Poor or non-adherence to treatment, as well as suboptimal linkage to and engagement in care, can lead to the resumption of rapid viral replication, decreased survival rates, and virus mutation to treatment-resistant strains of HIV. Similarly, linkage and adherence to biomedical prevention interventions is critical to curbing HIV acquisition rates among at-risk populations.

Implementing evidence-based behavioral, clinical, and structural interventions to enhance linkage to and adherence to HIV treatment and biomedical prevention, as well as long-term engagement in the continuum of HIV care, is critical to attain individual, community, and public health objectives.

PROGRAM OVERVIEW

Adherence 2015 will provide a forum where the state-of-the-science for HIV treatment and biomedical prevention adherence research will be presented, discussed, and translated into evidence-based approaches. The 2.5-day program will allow healthcare and human service professionals to examine scientifically sound and practical strategies to enhance adherence to HIV treatment and biomedical prevention interventions in a variety of domestic and international settings.

EDUCATIONAL OBJECTIVES

After completing this activity, participants will be able to:

- Summarize the state-of-the-science in relation to achieving individual, community, and public health goals by optimizing the HIV care continuum
- Apply evidence-based strategies to enhance adherence to HIV treatment in order to mitigate drug resistance and achieve long-term virologic suppression
- Integrate into clinical practice biomedical prevention interventions, including evidence-based strategies to enhance adherence to pre-exposure prophylaxis
- Provide appropriate care and counsel for patients and their families

GENERAL INFORMATION

MEETING VENUE

Adherence 2015 is being held at the Eden Roc Miami Beach. Plenary, Oral Abstract, and Breakout Sessions, as well as the Poster Session will be held on the second level (see the Hotel Maps and the Program Schedule on page 7 and pages 10-12, respectively).

MEALS

Complimentary breakfast will be provided daily in Ocean Ballroom 1, which is located on the first level of the Eden Roc Miami Beach. Lunch is available for purchase daily in the Mona Lisa room as well as the Cabana Beach Bar.

SOCIAL MEDIA

If you have not already done so, please "like" our Facebook page (International Association of Providers of AIDS Care) and join the Adherence 2015 event for live updates on the conference. Join the conference's social media conversation: #Adherence2015

QUESTIONS

If you have any questions during the conference, please locate an IAPAC staff member at the conference's Registration Area. If you have any questions post-conference, please contact Jonathon Hess at jhess@iapac.org.

INTERNET ACCESS

Complimentary Internet access is available for Adherence 2015 delegates. Wireless Internet can be accessed by connecting to EdenRocGuest.

SLIDE PRESENTATIONS/ABSTRACTS

Slide presentations will be available at www.iapac.org post-conference. The Program and Abstracts book will be distributed at registration, and electronic versions will be available at www.iapac.org post-conference.



PHYSICIANS, NURSES, & PSYCHOLOGISTS

CONTINUING MEDICAL EDUCATION

Accreditation Statement

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Postgraduate Institute for Medicine and the International Association of Providers of AIDS Care (IAPAC). The Postgraduate Institute for Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation

The Postgraduate Institute for Medicine designates this live activity for a maximum of 19.75 *AMA PRA Category 1 Credit(s)*TM. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Disclosure of Conflicts of Interest

The Postgraduate Institute for Medicine (PIM) requires instructors, planners, managers, and other individuals who are in a position to control the content of this activity to disclose any real or apparent conflict of interest (COI) they may have as related to the content of this activity. All identified COI are thoroughly vetted and resolved according to PIM policy. PIM is committed to providing its learners with high quality CME activities and related materials that promote improvements or quality in healthcare and not a specific proprietary business interest of a commercial interest.

A Disclosure of Conflicts of Interest handout is inserted in the Program and Abstracts book. The handout reflects reports of financial relationships or relationships to products or devices faculty, planners, and managers, or their spouses/ life partners, have with commercial interests related to the content of this CME activity. If you do not find this handout inserted in your Program and Abstracts book, please visit the conference's Registration Desk.



Postgraduate Institute
for Medicine

Disclosure of Unlabeled Use

This educational activity may contain discussion of published and/or investigational uses of agents that are not indicated by the US Food and Drug Administration (FDA). The planners of this activity do not recommend the use of any agent outside of the labeled indications. The opinions expressed in the educational activity are those of the faculty and do not necessarily represent the views of the planners. Please refer to the official prescribing information for each product for discussion of approved indications, contraindications, and warnings.

Disclaimer

Participants have an implied responsibility to use the newly acquired information to enhance patient outcomes and their own professional development. The information presented in this activity is not meant to serve as a guideline for patient management. Any procedures, medications, or other courses of diagnosis or treatment discussed or suggested in this activity should not be used by clinicians without evaluation of their patient's conditions and possible contraindications on dangers in use, review of any applicable manufacturer's product information, and comparison with recommendations of other authorities.

Evaluation

Participants may complete an online evaluation at www.cmeuniversity.com. On the navigation menu, click on "Find Post-Tests by Course" and search by Course ID 10580. Upon successfully completing the evaluation, a CME certificate will be made available to each participant.

CONTINUING EDUCATION

CONTINUING EDUCATION - PSYCHOLOGISTS

Psychology Sponsorship Statement

Postgraduate Institute for Medicine is approved by the American Psychological Association to sponsor continuing education for psychologists. PIM maintains responsibility for this program and its content.

Psychology Credit Designation

This program offers 18.5 continuing education credits for psychologists.

CONTACT HOURS - NURSES

Nursing Accreditation Statement

Postgraduate Institute for Medicine is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

Nursing Credit Designation

This educational activity for 19.75 contact hours is provided by Postgraduate Institute for Medicine.

EVALUATION FOR PSYCHOLOGISTS AND NURSES

Participants may complete an online evaluation at www.cmeuniversity.com. On the navigation menu, click on "Find Post-Tests by Course" and search by Project ID 10580. Upon successfully completing the evaluation, a CE certificate will be made available to each participant.

CONTINUING EDUCATION IN PHARMACY

Nova Southeastern University College of Pharmacy is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. ACPE#. This program has been approved for up to 8.0 contact hours (.8 CEUs). Following are sessions that have been approved for credit hours.



SUNDAY, JUNE 28, 2015

10:00 A.M. - Noon • Pompeii
[2 Hours]

Pre-Conference Symposium 1: High-Impact Technology: Closing the Gaps in the Continuum of HIV Care

Learning Objectives:

- Characterize the state of the continuum of HIV care in various populations in the United States
- Identify technologic assets that can help close gaps in the continuum of care
- Compare and contrast technologic advances used to close gaps in the continuum of care
- Discuss the role of pharmacy-based technology in helping to close gaps in the continuum of care

1:00 P.M. - 3:00 P.M. • Pompeii
[2 Hours]

Pre-Conference Symposium 2: Preview of the 2015 IAPAC Guidelines for the Optimization of the HIV Care Continuum

Learning Objectives:

- Cite three recommendations for optimizing the care continuum for people living with HIV
- Describe the role of pharmacists in improving the HIV care continuum
- Identify helpful interventions to improve ART adherence in the cascade
- Identify appropriate tools for pharmacists to use to improve ART adherence in the treatment cascade

4:00 P.M. - 4:30 P.M. • Pompeii
[0.5 Hour]

Gary S. Reiter, MD, and Andrew Kaplan, MD, Memorial Lecture

Implementation Science: Identifying Real-World Strategies to Optimize the HIV Care Continuum

Learning Objectives:

- Define the term "implementation science"
- Provide two examples of implementation science research as relates to optimizing the HIV care continuum

MONDAY, JUNE 29, 2015

8:00 A.M. - 8:30 A.M. • Ocean Ballroom 2
[0.5 Hour]

Keynote Address

Doing the Right Thing, in the Right Place, at the Right Time: Focusing HIV Efforts and Resources to End AIDS

Learning Objectives:

- Describe current, promising resources and efforts which are aimed at ending the AIDS epidemic
- Describe the barriers for controlling the HIV epidemic

8:30 A.M. - 9:00 A.M. • Ocean Ballroom 2
[0.5 Hour]

Addressing the Role of Stigma, Discrimination, and Punitive Laws in Disrupting the HIV Care Continuum

Learning Objectives:

- Identify laws which may clearly or inadvertently disrupt the HIV care continuum
- Describe the role of stigma in disrupting the HIV care continuum

1:30 P.M. - 2:30 P.M. • Pompeii
[1 Hour]

Policy, National Programs, and Structural Strategies to Ease Transitions Between Pillars in the HIV Care Continuum

Learning Objectives:

- Identify barriers that prevent patients' successful entry into and engagement in HIV care
- Outline clinical and bio-behavioral interventions to optimize the HIV care continuum
- Describe structural interventions that can ease transitions between HIV care cascade pillars

TUESDAY, JUNE 30, 2015

8:00 A.M. - 8:30 A.M. • Ocean Ballroom 2
[0.5 Hour]

Reinforcing Adherence as a Touchstone to Achieving 90% Viral Suppression

Learning Objectives:

- Describe methods to reinforce HIV antiretroviral adherence and their role in achieving viral suppression
- Describe actions a pharmacist can take to reinforce adherence and help patients achieve viral suppression.

8:30 A.M. - 9:00 A.M. • Ocean Ballroom 2
[0.5 Hour]

Closing Quality and Relevance Gaps – Harnessing Technology to Facilitate HIV Care Scale-Up

Learning Objectives:

- Identify methods that utilize technology to close quality gaps in HIV care
- Identify common features of successful technology-based interventions to facilitate community-based HIV care

1:45 P.M. - 2:15 P.M. • Ocean Ballroom 2
[0.5 Hour]

Developing an "HIV Prevention Cascade": Current Approaches and Future Directions

Learning Objectives:

- Describe the role of combination prevention efforts in closing gaps across the continuum of care
- Identify potential prevention efforts that pharmacists can engage in to help close gaps in care



NETWORKING OPPORTUNITIES

GROUP INTEREST NETWORKING HOUR

5:15 P.M. - 6:15 P.M., Monday, June 29, 2015, Penthouse (take Penthouse Elevator)

Adherence 2015 covers a vast spectrum of issues. Come break it down with us in a less conference-like environment. IAPAC invites you to stop by the Networking Hour to mix and mingle among colleagues and new friends. This unique and casual networking opportunity

The Group Interest Coffee Talk will focus on the individuals who serve people living with HIV/AIDS:

- Pharmacists
- Nurses & Nurse Practitioners
- Psychologists
- Physicians

ISSUE INTEREST COFFEE TALK

7:00 A.M. - 7:50 A.M., Tuesday, June 30, 2015, Mona Lisa

The Issue Interest Coffee Talks will focus on special populations of individuals living with or affected by HIV/AIDS:

- Men who have Sex with Men
- Women/Young Women
- Transgender Individuals
- Children/Adolescents

RUNNING CLUB

6:00 A.M. - 6:45 A.M., Monday, June 29, 2015 & Tuesday, June 30, 2015, Meet in Hotel Lobby

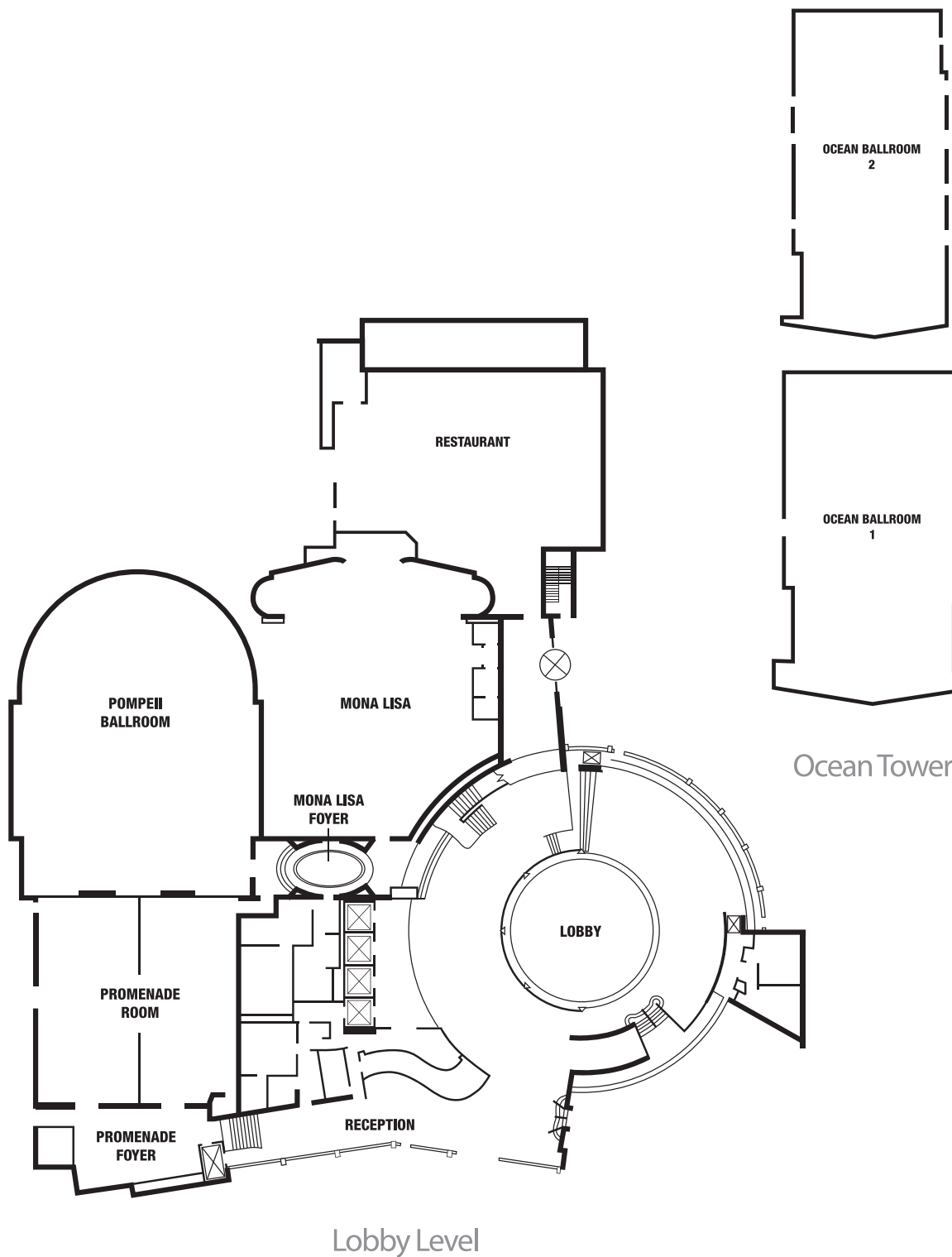
Calling all runners! Come meet us every morning for a pre-conference run around North Miami Beach. Adherence 2015 participants and runners of all endurance, paces, distances and experience levels are encouraged to come run together in a non-competitive atmosphere as a way to get to know each other in a relaxed, informal environment. See you there!

Disclaimer: Runners acknowledge that they are participating at their own risk and waive all claims of every nature against the organizers, sponsors, and any other participating groups with respect to any personal loss, illness, bodily injury or death resulting from participating in this event. Participants also fully understand the rigors of this activity and have prepared themselves physically for the event. Please use caution when performing exercise and/or engaging in strenuous physical activity. Please consult your physician before beginning exercise program. Participants should stay on sidewalks, use crosswalks and stay alert to traffic and pedestrians. Participants will be required to sign a Release and Liability Disclaimer prior to participating in a pre-conference run.



EDEN ROC MIAMI BEACH

HOTEL MAPS





FACULTY ROSTER

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University of Michigan
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International Association of Providers
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Washington, DC, USA



SUNDAY, JUNE 28, 2015

Symposium 1

10:00 A.M. - Noon / Pompeii

High-Impact Technology: Closing the Gaps in the Continuum of HIV Care

Moderator:

Jane M. Simoni, PhD, University of Washington, Seattle, WA, USA

Panelists:

Heidi Crane, MD, University of Washington, Seattle, WA, USA

Ann Kurth, PhD, CNM, MPH, New York University, New York, NY, USA

Patrick Sullivan, PhD, DVM, Emory University, Atlanta, GA, USA

Sean Young, PhD, MS, University of California, San Francisco, San Francisco, CA, USA

CME accredited

Symposium 2

1:00 P.M. - 3:00 P.M. / Pompeii

Preview of the 2015 IAPAC Guidelines for the Optimization of the HIV Care Continuum

Moderator:

Benjamin Young, MD, PhD, International Association of Providers of AIDS Care, Washington, DC, USA

Presenter:

Julio S.G. Montaner, MD, BC Centre for Excellence in HIV/AIDS, Vancouver, BC, CANADA

Panelists:

Ann Kurth, PhD, CNM, MPH, New York University, New York, NY, USA

Celso Ramos, MD, MSc, Federal University of Rio de Janeiro, Rio de Janeiro, BRAZIL

James D. Scott, MEd, PharmD, Western University of Health Sciences, Pomona, CA, USA

Anna Zakowicz, MA, MIH, AHF Europe/GNP+, Amsterdam, NETHERLANDS

CME accredited



SUNDAY, JUNE 28, 2015

PROGRAM SCHEDULE

TIME	ACTIVITY	POMPEII
10:00am-Noon	Pre-Conference Symposium 1	High-Impact Technology: Closing the Gaps in the Continuum of HIV Care Moderator: Jane Simoni, PhD Panelists: Heidi Crane, MD; Ann Kurth, PhD, CNM, MPH; Patrick Sullivan, PhD, DVM; Sean Young, PhD, MS
Noon-1:00pm	Lunch on Own	
1:00pm-3:00pm	Pre-Conference Symposium 2	Preview of the 2015 IAPAC Guidelines for the Optimization of the HIV Care Continuum Moderator: Benjamin Young, MD, PhD Presenter: Julio S.G. Montaner, MD Panelists: Ann Kurth, PhD, CNM, MPH; Celso Ramos, MD, MSc; James D. Scott, MEd, PharmD; Anna Zakowicz, MA, MIH
3:00pm-3:30pm	Break	
OPENING SESSION • OCEAN BALLROOM 2		
3:30pm-4:00pm	CONFERENCE WELCOME AND AWARDS PRESENTATION José M. Zuniga, PhD, MPH K. Rivet Amico, PhD Michael J. Mugavero, MD, MHSc	
4:00pm-4:30pm	GARY S. REITER, MD, AND ANDREW KAPLAN, MD, MEMORIAL LECTURE Implementation Science: Identifying Real-World Strategies to Optimize the HIV Care Continuum Quarraisha Abdool Karim, PhD	
4:30pm-5:30pm	Perspectives on the Cascade of Care: How Does it Resonate with Affected Communities? Moderator: Phill Wilson Panelists: Vanessa Johnson, JD; Kenly Sikwese; Anna Zakowicz, MA, MIH	
5:30pm-5:45pm	Break	
TIME	ACTIVITY	LOCATION
5:45pm-7:00pm	Poster Session & Exhibit Session	Ocean Ballroom 1
WELCOME RECEPTION • WATERVIEW TERRACE		
7:00pm-8:00pm	¡Bienvenidos a Miami!	



MONDAY, JUNE 29, 2015

PROGRAM SCHEDULE

TIME	ACTIVITY				
6:00am-6:45am	Morning Run (Meet in Hotel Lobby)				
6:30am-7:50am	Exhibit Session & Breakfast (Ocean Ballroom 1)				
7:50am-8:00am	Break				
MORNING SESSION • OCEAN BALLROOM 2					
8:00am-8:30am	KEYNOTE ADDRESS: Doing the Right Thing, in the Right Place, at the Right Time: Focusing HIV Efforts and Resources to End AIDS Ambassador Deborah L. Bix, MD				
8:30am-9:00am	Addressing the Role of Stigma, Discrimination, and Punitive Laws in Disrupting the HIV Care Continuum Jason Sigurdson, MPA, LLB				
9:00am-10:00am	Three Top-Rated Oral Abstracts				
10:00am-10:15am	Break				
TIME	ACTIVITY	OCEAN BALLROOM 2	PROMENADE	POMPEII	
10:15am-11:15am	Thematic Oral Abstract Sessions	SESSION 1 Perspectives and Performance of Care Engagement	SESSION 2 Innovations in ART Adherence Measurement	SESSION 3 PrEP Dissemination and Implementation	
11:15am-11:30am	Break				
11:30am-12:30pm	Thematic Oral Abstract Sessions	SESSION 4 Re-Engagement Interventions across Contexts	SESSION 5 ART Adherence Potpourri	SESSION 6 Implementation Science in Biomedical HIV Prevention	
12:30pm-1:30pm	Lunch on Own				
1:30pm-2:30pm	Thematic Panels	Why Do Individuals Behave as They Do Across the HIV Care Continuum? Moderator: Dianne M. Rausch, PhD Panelists: Jason Farley, PhD, MPH, CRNP Robert Remien, PhD Jane M. Simoni, PhD Jason Farley, PhD, MPH, CRNP	Community Efforts to Improve the HIV Care Continuum Moderator: Dazon Dixon Diallo, MPH Panelists: Michele Andrasik, PhD, EdM, MA JoAnne Keatley, MSW Patrick Yankee	Policy, National Programs, and Structural Strategies to Ease Transitions between Pillars in the HIV Care Continuum Moderator: Benjamin Young, MD, PhD Panelists: José A. Bauermeister, MPH, PhD Bich Dang, MD Glen Pietrandoni, RPh	
2:30pm-2:45pm	Break				
PANEL • OCEAN BALLROOM 2					
2:45pm-3:45pm	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				
3:45pm-4:00pm	Break				
TIME	ACTIVITY	OCEAN BALLROOM 2	PROMENADE	POMPEII	
4:00pm-5:00pm	Thematic Oral Abstract Sessions	SESSION 7 The “Big Picture” Epidemiological Approaches to the Care Continuum	SESSION 8 Psychosocial and Cognitive Correlates of ART Adherence	SESSION 9 Linkage and Retention: Global Perspectives	
5:00pm-5:15pm	Break				
PRACTICE SETTING NETWORKING HOUR • PENTHOUSE					
5:15PM-6:15PM	Pharmacists	Nurses	Social Workers	Psychologists	Physicians



TUESDAY, JUNE 30, 2015

TIME	ACTIVITY				
6:00am-6:45am	Morning Run (Meet in Hotel Lobby)				
ISSUE INTEREST COFFEE TALKS (breakfast provided) • MONA LISA					
6:30am-8:00am	MSM	Substance Users	Sex Workers	Children/Adolescents	Women
MORNING SESSION • OCEAN BALLROOM 2					
8:00am-8:30am	90:90:90 - Reinforcing Adherence as a Touchstone to Achieving 90% Viral Suppression Steve Morin, PhD				
8:30am-9:00am	Closing Quality and Relevance Gaps: Harnessing Technology to Facilitate HIV Care Scale-Up Reuben Granich, MD, MPH				
9:00am - 9:15am	Break				
TIME	ACTIVITY	OCEAN BALLROOM 2	PROMENADE	POMPEII	
9:15am-10:15am	Thematic Oral Abstract Sessions	SESSION 10 Linkage and Retention: Domestic (US) Perspectives	SESSION 11 Facilitating ART Adherence: Individual, System, and Technology Interventions	SESSION 12 Large-Scale Programs to Enhance Individual and Public Health Outcomes	
10:15am-10:30am	Break				
TIME	ACTIVITY	OCEAN BALLROOM 2		POMPEII	
10:30am-11:30am	Late-Breaker Oral Abstract Sessions	SESSION 1 Multiple Layers and Dimensions of HIV Adherence		SESSION 2 Large-Scale Programs to Enhance Individual and Public Health Outcomes	
11:30am-11:45am	Break				
TIME	ACTIVITY	OCEAN BALLROOM 2	PROMENADE	POMPEII	
11:45am-12:45pm	Invited Speakers	Health Financing Alan Whiteside, DEcon	Public Policy Jeffrey S. Crowley, MPH	Legal Barriers Catherine Hanssens, JD	
12:45pm-1:45pm	Lunch on Own				
AFTERNOON SESSION • OCEAN BALLROOM 2					
1:45pm-2:15pm	Developing an “HIV Prevention Cascade”: Current Approaches and Future Directions K. Rivet Amico, PhD				
2:15pm-3:15pm	Biomedical HIV Prevention: Adherence Across Diverse Contexts and Cultures Moderator: Jessica E. Haberer, MD, MS Presenter: Kenneth Mayer, MD Panelists: Robert Grant, MD, MPH; Sharon Hillier, PhD; Rafael Mazin, MD, MPH				
3:15pm-3:30pm	Break				
3:30pm-4:15pm	RAPPORTEUR SESSION: Highlights from Adherence 2015 Michael J. Stirratt, PhD				
4:15pm-5:15pm	CLOSING PANEL: A 10-Year Journey Toward a Sustainable System of HIV Prevention and Treatment Adherence Moderators: K. Rivet Amico, PhD; Michael J. Mugavero, MD, MHSc Panelists: Kenly Sikwese; Julio S.G. Montaner, MD; Anna Zakowicz, MA, MIH; José M. Zuniga, PhD, MPH				
5:15pm	Adjourn				



2015 HONOREES

IAPAC is proud to honor two individuals at this year's decade anniversary of the International Conference on HIV Treatment and Prevention Adherence with awards recognizing their contributions to HIV adherence science and practice. They were nominated by their peers on the conference Planning Committee, which had the unenviable duty of selecting two honorees from among a distinguished roster of equally deserving nominees. IAPAC extends its congratulations to the honorees and their fellow nominees.

2015 PIONEER AWARD FOR OUTSTANDING CONTRIBUTIONS TO HIV ADHERENCE SCIENCE/PRACTICE

The Pioneer Award recognizes the achievements of an individual whose career has made significant contributions to the field of HIV adherence science/practice. The recipient will have demonstrated a history of leadership or advocacy that has enhanced knowledge, education, implementation, or policies in HIV care.

Steven A. Safren, PhD

Dr. Safren received his doctor of philosophy in clinical psychology from the University at Albany (State University of New York) in 1998, and completed his internship and post-doctoral fellowship at Massachusetts General Hospital/Harvard Medical School. He is a Professor of Psychology



in the Department of Psychiatry at Harvard Medical School and Massachusetts General Hospital (MGH), an Affiliated Investigator at Fenway Health, the Director of the Behavioral and Social Sciences Core of the Harvard University Center for AIDS Research (CFAR), and Director of Behavioral Medicine at MGH. After 18 years working in the Harvard University system, however, Dr. Safren is starting as a Professor of Psychology at the University of Miami in August 2015. Dr. Safren's adherence-related research has involved interventions to promote adherence, and a particular focus on mental health and substance use related syndemics. He developed and tested one of the first behavioral interventions for increasing adherence to antiretroviral therapy (called LifeSteps), which has subsequently been adapted for use as both a stand-alone intervention and part of multi-faceted interventions in a variety of domestic and international settings for HIV treatment and in pre-exposure prophylaxis. Dr. Safren has completed several trials of interventions that address mental health and substance use problems in the context of HIV/AIDS, including three adherence interventions for individuals with HIV and depression, and two secondary prevention trials for men who have sex with men with HIV. He has worked domestically and internationally supported by National Institutes of Health grants, as well as through the AIDS Clinical Trials Networks. Accordingly he has been principal investigator or protocol chair of 12 federally funded studies, and has over 230 peer-reviewed publications.

2015 RISING STAR AWARD FOR PROMISING EARLY CAREER SCIENTIST/PRACTITIONER

The Rising Star Award for Promising Early Career Scientist/ Practitioner recognizes young researchers who demonstrate innovation, originality, and quality in the field of HIV medication adherence science/practice. The honoree must be under age 40 and/or have completed their terminal professional training in the previous 10 years.

Jessica E. Haberer, MD, MS

Dr. Haberer received her medical degree from the Yale University School of Medicine, as well as a master's degree in Health Services Research from Stanford University. She completed an internship and residency in Internal Medicine at the University of California, San Francisco. After



finishing her training, Dr. Haberer worked for the William J. Clinton Foundation HIV/AIDS Initiative in Beijing, China, where she served as a Clinical and Research Advisor to the Chinese Center for Disease Control and Prevention/National Center for AIDS. Upon returning to the United States, she joined the Department of Medicine at the University of California, San Francisco as a Clinical Educator. Dr. Haberer developed an interest in adherence to antiretroviral therapy (ART) while in China and began studying multiple measures of ART adherence among children and adults in developing world settings. She joined the Massachusetts General Hospital Center for Global Health and Harvard Medical School Department of Medicine in 2008, where she is actively involved in the study of real-time adherence monitoring and intervention strategies for ART and pre-exposure prophylaxis against HIV infection. Her current projects are based in Kenya, South Africa, and Uganda.



MONDAY, JUNE 29, 2015

THREE TOP-RATED ORAL ABSTRACTS

9:00 A.M. – 10:00 A.M. / Ocean Ballroom 2 • Moderators: K. Rivet Amico, PhD; Michael J. Mugavero, MD, MHSc

- | | | |
|--|---|---|
| 34 Effect of Peer Mentoring to Improve Retention in HIV Care and HIV Viral Load in Hospitalized, Out-of-Care Patients
Thomas Giordano presenting | 132 Delivery of Antiretroviral Therapy Adherence Support Services by HIV Care Providers in the United States
John Weiser Presenting | 174 Evidence that PrEP can “Do More”: Synergistic Effects on Primary Care, Insurance Status, and Mental Health
Sarit Golub presenting |
|--|---|---|

THEMATIC ORAL ABSTRACT SESSIONS

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Perspectives and Performance of Care Engagement

10:15 A.M. – 11:15 A.M. / Ocean Ballroom 2
Moderator: Amanda Castel, MD, MPH

- 223** The Impact of Care Coordination Services on HIV Care Outcomes among Formerly Incarcerated Individuals in Virginia
Anne Rhodes presenting
- 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
- 201** Client Perspectives on the HRSA/ SPNS Systems Linkage and Access to Care Initiative Interventions: “People are better off Having Services Like That Available”
Kimberly Koester presenting
- 170** Project ACCEPT: Acceptability of a Behavioral Intervention to Promote Engagement in Care for Youth Newly Diagnosed With HIV
Diana Lemos presenting

SESSION 2

Innovations in ART Adherence Measurement

10:15 A.M. – 11:15 A.M. / Promenade
Moderator: Marijn de Bruin, PhD

- 42** Experiences of Wisepill-Facilitated HIV Disclosure in Rural Southwestern Uganda
Emily Pisarski presenting
- 179** Co-Calibration of Two Validated, Self-Reported Measures of ART Adherence in the CFAR Network of Integrated Clinical Systems (CNICS) Research Network and STTR Consortium
Heidi Crane presenting
- 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
- 241** Utility of Dried Blood Spot-Derived ARV Biomarkers as an Objective Measure of Treatment Adherence in South Africa
Patricia Warne presenting

SESSION 3

PrEP Dissemination and Implementation

10:15 A.M. – 11:15 A.M. / Pompeii
Moderator: Kenneth Mayer, MD

- 184** “Kiki with your Doctor?!?” Developing a Novel Social-Media Based Linkage-to-Care Intervention for Men Who Have Sex With Men (MSM) and Transgender (TG) Individuals in New York City
Viraj Patel presenting
- 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
- 114** Familiarity with and Preferences for Oral versus Long-Acting Injectable PrEP in a Nationally Representative US Sample of Gay and Bisexual Men
Jeffrey Parsons presenting
- 118** All Science is Local: Engaging Communities to Enable Successful Implementation of Antiretroviral Prevention Strategies
Jessica Terlikowski presenting

ORAL ABSTRACTS SCHEDULE



MONDAY, JUNE 29, 2015 (continued)

ORAL ABSTRACTS SCHEDULE

SESSION 4

Re-Engagement Interventions across Contexts

11:30 A.M. – 12:30 P.M. / Ocean Ballroom 2
Moderator: Evelyn Tomaszewski, MSW, ACSW

- 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
- 161** Short-Term Navigation Can Lead to Successful Re-Engagement of Out-of-Care Patients with HIV: Results of San Francisco's LINC'S Navigation Program
Erin Antunez pre-senting
- 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
- 176** Personal Outreach by a Trained Social Worker is an Effective Intervention to Re-Engage Patients with HIV in Care
Lauren Richey presenting

SESSION 5

ART Adherence Potpourri

11:30 A.M. – 12:30 P.M. / Promenade
Moderator: Steven A. Safren, PhD

- 19** Effectiveness and Cost-Effectiveness of the Adherence Improving Self- Management Strategy (AIMS) Delivered in HIV Care
Marijn de Bruin presenting
- 39** Meanings of SMS Reminders for Adherence Support among Adults Initiating ART in Rural Southwestern Uganda
Norma Ware presenting
- 214** Multi-Level Barriers to Antiretroviral Treatment (ART) Adherence among Hijra-/Thirunangai-Identified Trans Women in India: A Qualitative Investigation
Divya Ravi presenting
- 51** Binge Drinking Decreases Weekend Adherence in an RCT from Low-/ Middle-Income Countries
Raquel de Boni presenting

SESSION 6

Implementation Science in Biomedical HIV Prevention

11:30 A.M. – 12:30 P.M. / Pompeii
Moderator: Benjamin Young, MD, PhD

- 183** Diffusion Of HIV Pre-Exposure Prophylaxis into Specialist and Primary Care: A Qualitative Study with Primary Care Providers
Douglas Krakower presenting
- 10** Feasibility of Providing HIV Post-Exposure Prophylaxis Starter Kits in New York City Sexually Transmitted Disease Clinics
Emily Westheimer presenting
- 74** Significant Uptake of Truvada for Pre-Exposure Prophylaxis Utilization in the US in 2014
Staci Bush presenting
- 189** Impact of Option B on Mother-to-Child HIV Transmission in Rwanda: An Interrupted Time Series Analysis
Monique Abimpaye presenting

SESSION 7

The "Big Picture" Epidemiological Approaches to the Care Continuum

4:00 P.M. – 5:00 P.M. / Ocean Ballroom 2
Moderator: Thomas P. Giordano, MD, MPH

- 259** Diminishing "Clinic Viral Load" in a Nationally Distributed Cohort in the United States: What's Adherence Got to Do with It?
Jane Simoni presenting
- 216** Feasibility of Using HIV Care Continuum Outcomes to Identify Geographic Areas for HIV Testing
Amanda Castel presenting
- 20** Retention in HIV Care among a Commercially Insured Population, 2006-2012
Kathy Byrd presenting
- 68** The Paradox of Retention
Daniel Feller presenting

SESSION 8

Psychosocial and Cognitive Correlates of ART Adherence

4:00 P.M. – 5:00 P.M. / Promenade
Moderator: Tia Morton, RN, MS

- 206** Association between Alcohol and Substance Use Severity and Antiretroviral Therapy (ART) Adherence over time in a Nationally Distributed Cohort of Patients in Care across the United States
Heidi Crane presenting
- 182** Depressive Symptoms Mediate HIV-Related Physical Symptoms on Adherence to Antiretroviral Medications
Moka Yoo presenting
- 204** The Impact of Disclosure on Adherence in HIV-Infected Adolescents in Botswana: A Longitudinal Study
Harriet Okatch presenting
- 116** The Role of Neurocognitive Functioning in the Day-Level Association between Substance Use and Medication Adherence among HIV-Positive Gay and Bisexual Men
H. Jonathon Rendina presenting

SESSION 9

Linkage and Retention: Global Perspectives

4:00 P.M. – 5:00 P.M. / Pompeii
Moderator: José M. Zuniga, PhD, MPH

- 175** Quantifying Variability in Missed Pharmacy Visits among HIV-Infected Patients after Initiation of Antiretroviral Therapy in Zambia
Nancy Czaicki presenting
- 57** The MSM HIV Care Cascade in Rio de Janeiro, Brazil
Rodolfo Castro presenting
- 177** Social Support through Observational Trial Participation among HIV Patients in Southwest Uganda
Bridget Burns presenting
- 199** Age Matters: Inconsistent HIV Care among Adolescents and Young Adults in Nigeria
Aimalohi Ahonkhai presenting



TUESDAY, JUNE 30, 2015

THEMATIC ORAL ABSTRACT SESSIONS

SESSION 10

Linkage and Retention: Domestic (US) Perspectives

9:15 A.M. – 10:15 A.M. / Ocean Ballroom 2
Moderator: Deborah Konkle-Parker, PhD, FNP

- 26** From Their Own Perspectives, Why Are Out-of-Care HIV-Infected African American MSM Out of Care?
Jeffrey Kelly presenting
- 8** Clinical and Behavioral Characteristics in US HIV-infected Young Adults
Linda Beer presenting
- 21** Most Accurate Data Sources for Obtaining Contact Information on Adults Diagnosed with HIV for Public Health Purposes
Stanley Wei presenting
- 1** HIV Care Measured Over Multiple Time Periods Varies by Race and Ethnicity
Michael Horberg presenting

SESSION 11

Facilitating ART Adherence: Individual, System, and Technology Interventions

9:15 A.M. – 10:15 A.M. / Promenade
Moderator: Jane M. Simoni, PhD

- 193** The Effect of Antidepressant Treatment on HIV and Depression Outcomes: Results from the SLAM DUNC Randomized Controlled Trial
Brian Pence presenting
- 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
- 87** SMS Interventions to Improve Antiretroviral Therapy Adherence: A Pilot Randomized Controlled Trial
Jessica Haberer presenting
- 171** Engagement is Key to Effectiveness of Individualized Texting for Adherence Building (iTAB) Among HIV-Positive Methamphetamine Users
David Moore presenting

SESSION 12

Large-Scale Programs to Enhance Individual and Public Health Outcomes

9:15 A.M. – 10:15 A.M. / Pompeii
Moderator: Christopher M. Gordon, PhD

- 33** Adherence to Pre-Exposure Prophylaxis (PrEP) among Gay and Bisexual Men: Prevalence and Predictors of Missed Doses
Thomas Whitfield presenting
- 188** Low Adherence in Vaginal Microbicide Gel Trials? Opinions of Former Trial Participants on Improving Adherence
Lori Miller presenting
- 104** Intentions to Initiate PrEP among Gay and Bisexual Men are Driven by Demographic Factors, Sexual Risk, and Perceptions of Providers: Results from a Nationally Representative Sample
H. Jonathon Rendina
- 244** "I Am Not a Man": Trans-Specific Barriers and Facilitators to PrEP Acceptability among Transgender Women
Jae Sevelius presenting

LATE-BREAKER ORAL ABSTRACT SESSIONS

SESSION 1

Multiple Layers and Dimensions of HIV Adherence

10:30 A.M. – 11:30 A.M. / Ocean Ballroom 2
Moderator: Michael J. Stirratt, PhD

- 281** Treatment to Improve Adherence and Depression among People Living with HIV in Zimbabwe
Melanie Abas presenting
- 287** Difference in Self-Reported Adherence on Different Recall Intervals over Time Between Males and Females in MACH14 Study
Yan Wang presenting
- 276** Predictors of Adherence in Youth with HIV Enrolled in a Prospective Longitudinal Follow-Up Study of a Randomized Advance Care Planning Intervention
Patricia Garvie presenting
- 289** Multilevel Factors Contributing to Women's Entry, Engagement, and Adherence to HIV Treatment and Care
Marcia Holstad presenting

SESSION 2

Large-Scale Programs to Enhance Individual and Public Health Outcomes

10:30 A.M. – 11:30 A.M. / Promenade
Moderator: Reuben Granich, MD, MPH

- 274** Treatment Refusal in South Africa in an Era of Expanded Antiretroviral Therapy Availability – A Prospective Multi-Site Cohort Study
Ingrid Katz presenting
- 280** The HIV Care Continuum for Housing Program Clients and Persons Living with HIV/AIDS Overall, New York City, 2013
Ellen Wiewel presenting
- 269** Providing Technical Assistance to Health Departments on the use of HIV Surveillance Data to Improve Health and Prevention
Kathleen Green presenting
- 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

ORAL ABSTRACTS SCHEDULE



1 HIV Care Measured Over Multiple Time Periods Varies by Race and Ethnicity

Michael Horberg (presenting)^{1,2}, Leo Hurley^{3,4}, Daniel Klein⁵, William Townner⁶, Peter Kadlecik⁷, Carol Remmers⁸, Rebecca Gambatese⁸, Jackie Blank¹, Courtney Ellis^{3,4}, Michael Silverberg^{3,4}

¹ Mid-Atlantic Permanente Research Institute of Kaiser Permanente Mid-Atlantic States, Rockville, MD, USA

² HIV Initiative of Kaiser Permanente, Rockville, MD, USA

³ HIV Initiative of Kaiser Permanente, Oakland, CA, USA

⁴ Kaiser Permanente Northern California Division of Research, Oakland, CA, USA

⁵ Kaiser Permanente Northern California, San Leandro, CA, USA

⁶ Kaiser Permanente Southern California, Los Angeles, CA, USA

⁷ Kaiser Permanente Mid-Atlantic States, Washington, DC, USA

⁸ Kaiser Permanente, Oakland, California, USA

Background: High quality HIV care is defined by efficient “linkage” to care at diagnosis, “retention” in care, “prescription” of antiretroviral therapy (ART), and achieving viral suppression (“BLQ”). We evaluate differences by race/ethnicity in these metrics in an integrated care system with equal access to care.

Methodology: Kaiser Permanente (KP) is an insured integrated health system providing equal access to care for all members. In California, Maryland, Virginia, and the District of Columbia we evaluated all HIV-positive KP members ≥ 13 years old with ≥ 8 months membership in 2010 ($N = 13,557$), 2011 (14,253), and 2012 (14,871). We measured “linkage” (1st visit/CD4 within 90 days of being identified HIV+ for new patients; ≥ 1 medical visit in year for established patients), “retention” (≥ 2 medical visits in year ≥ 60 days apart), “prescription” (filled ≥ 3 months of DHHS-defined ART in year), and BLQ (HIV RNA < 200 copies/mL last measured in year). For each year, we compared metrics by race/ethnicity, with differences assessed by chi-square statistics.

Results: The population was 46% White, 24% Black, 20% Latino, 5% Asian/Pacific Islander, and 5% Other/Unknown. There was not a statistical difference in linkage by race/ethnicity for any year. However, Latinos had better retention ($p < 0.05$) than Whites or Blacks in all years, but not Blacks compared with Whites. Whites had statistically higher percents prescribed ART in all years compared with other racial/ethnic groups. Overall, %BLQ was also higher among Whites compared with all other racial/ethnic groups, but not when limited to patients prescribed ART. Further, the overall differences in %BLQ diminished over time.

Conclusions: While outcomes generally improved over time, even with equal access to care, we see significant differences in ART prescription, and thus BLQ by race/ethnicity. While linkage and retention may even be better among Latinos, this was not reflected in prescriptions or BLQ. These differences should inform targeting sub-populations for optimal HIV care.

8 Clinical and Behavioral Characteristics in US HIV-Infected Young Adults

Linda Beer (presenting)¹, Christine Mattson¹, Joseph Prejean¹, R. Luke Shouse¹

¹ Centers for Disease Control and Prevention, Atlanta, GA, USA

Background: Recent data indicate HIV-infected persons aged 18-24 (“young adults”) have poorer outcomes at each step of the HIV care continuum compared with those aged 25+ (“older adults”). However, the characteristics of HIV-infected young adults have not been well described.

Methodology: The Medical Monitoring Project (MMP) conducts clinical and behavioral surveillance among a representative sample of HIV-infected adults receiving medical care in the United States. Using weighted MMP data collected between 6/2009-5/2012, we describe the characteristics of HIV-infected young adults ($n = 359$) and use Rao-Scott chi-square tests to compare their clinical status, behaviors, and receipt of prevention services with older adults ($n = 12,835$).

Results: Among HIV-infected young adults in care, 70% were currently taking antiretroviral therapy (ART), 73% were adherent to ART over the past three days, and 33% were durably virally suppressed over the past 12 months, compared to 91%, 86%, and 61% of older adults, respectively (all $p = 0.4044$). In the past 12 months, 39% had sex without a condom and 24% did so with an HIV negative or unknown status partner, compared to 24% and 12% of older adults, respectively (both $p < 0.0001$). More young adults than older adults received sexual risk reduction counseling by a healthcare provider (73% vs. 43%, $p < 0.0001$).

Conclusions: Although receipt of prevention counseling was higher in young adults, sexual risk behaviors were also more common. Despite similar levels of engagement as evidenced by regular viral load testing, young adults had significantly lower levels of ART use and adherence, and 66% were not durably virally suppressed. Even among those in care, HIV-infected young adults may face greater barriers to achieving optimal health; enhanced services for young adults may be needed.



10 Feasibility of Providing HIV Post-Exposure Prophylaxis Starter Kits in New York City Sexually Transmitted Disease Clinics

Emily Westheimer (presenting)¹, Julie Myers¹, Thomas Cherneskie¹, Pei-Chi Chung¹, Mayra Ortiz¹, Shruti Ramachandran¹, Susan Blank¹

¹ New York City Department of Health and Mental Hygiene, New York, NY, USA

Introduction: Use of antiretroviral medication for prevention of HIV infection after a high-risk sexual exposure (PEP) has become an increasingly utilized intervention for HIV prevention. The New York City Department of Health and Mental Hygiene's (NYC DOHMH) Sexually Transmitted Disease (STD) Clinics began offering PEP 'starter kits' in 2014. Patients reporting select high-risk exposures in the past 36 hours were eligible.

Description: We conducted a feasibility assessment of providing free, 3-day "starter kits" of a 3-drug PEP regimen to eligible patients, along with referral to another facility. Referral facilities were responsible for a comprehensive medical and laboratory evaluation, assistance in obtaining the remainder of the 28-day course of medication, and follow-up HIV testing. Patients who accepted the starter kit were contacted by NYC DOHMH STD staff on Days 2 and 30 to determine regimen adherence and successful linkage. Referral facilities were contacted to confirm patients' attendance at follow-up appointments.

Lessons Learned: Acceptance of PEP starter kits was high. From April through December 2014, 97% (202/209) of eligible patients offered the starter kit accepted it. Of 167 patients reached on Day 2, 163 (98%) reported taking the medication. Despite a low response rate to Day 30 calls, 105 of 111 (96%) patients reached reported completion of the full 28-day regimen. Facilities reported that 87% (149/172) of patients attended the initial referral appointment.

Recommendations: Use of 3-day starter kits is a feasible method of providing PEP in NYC STD clinics and allows for timely initiation of the regimen in clinical settings where provision of the full course and associated testing may be burdensome. Biomedical HIV prevention strategies such as PEP can be incorporated into regular clinical services at a wide variety of medical facilities.

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

Background: Persons living with HIV (PLWH) require linkage and retention in continuous care to improve clinical outcomes, reduce HIV-related mortality and risk of onward HIV transmission; only 51% are retained-in-care in US. In 2008, the NYC health department began using its HIV surveillance registry to identify PLWH presumed to be out-of-care (OOC) to locate and re-link them to care. We examine retention and factors associated with retention-in-care after re-linkage.

Methods: A CD4 or VL report to surveillance was considered a proxy for receiving care. From 1/08-12/12, we sought to locate and re-link 1585 PLWH lacking lab reports for ≥ 9 months. Return and retention-in-care was confirmed using surveillance data. PLWH confirmed to have died via surveillance-vital records matching were excluded from the denominator for assessing retention-in-care in the year of death.

Results: We traced 1,402/1,659 (85%) presumed OOC-PLWH: 803 (57%) were confirmed to be OOC in NYC; others were found to be current-with-care (35%), moved (5%), died/other reasons (3%). Of the 803 OOC, 56% re-linked to care, of whom 92% re-linked within 6 months; 44% refused. Most OOC-PLWH who returned-to-care were male (59%), black (64%) or Hispanic (30%), or aged ≥ 40 years (68%). In years 2-5 after return-to-care, 76%-86% kept at least one care appointment, and 57%-65% kept ≥ 2 appointments. Unique PLWH were consistently retained-in-care each year of follow-up after their return (77% in year 2 to 56% in year 5). Proportions of PLWH with suppressed VL ≤ 400 copies/mL after return-to-care increased from 52% in year 2 to 64% in year 4, then dipped to 49% in year 5. Retention-in-care and VL suppression were associated with male sex, Hispanic ethnicity and age ≥ 40 years.

Conclusion: Health department-based initiatives to identify OOC-PLWH using surveillance data and then re-link them to HIV care can successfully lead to reengagement and long-term retention-in-care.



19 Effectiveness and Cost-Effectiveness of the Adherence Improving Self-Management Strategy (AIMS) Delivered in HIV Care

Marijn de Bruin (presenting)¹, Edwin Oberje², Hans-Erik Nobel³, Silvia Evers⁴, Wolfgang Viechtbauer⁴, Jan Prins³

¹ University of Aberdeen, SCOTLAND

² University of Amsterdam, NETHERLANDS

³ Academic Medical Center, Amsterdam, NETHERLANDS

⁴ Maastricht University, Maastricht, NETHERLANDS

Background: Few scalable interventions to promote adherence to Antiretroviral Therapy for HIV have demonstrated a meaningful impact on adherence, viral suppression, and costs. The Adherence Improving self-Management Strategy (AIMS) is a theory-based intervention designed to fit in routine HIV care, and developed collaboratively with HIV nurses and patient input in a pilot-study. It has demonstrated an impact on adherence and viral load in a single-centre RCT. The current multi-centre RCT was designed to definitively evaluate the effectiveness and cost-effectiveness of AIMS compared with treatment-as-usual.

Methodology: 223 patients in 7 HIV clinics in the Netherlands were randomised to AIMS or treatment-as-usual. The primary effectiveness outcome was log viral load; secondary outcomes were viral load detectable/undetectable and treatment failure (defined as 2 consecutive detectable viral loads). Intent-to-treat analyses were conducted using mixed-effects (logistic) regression models. Cost-effectiveness was examined for quality-adjusted life years (QALYs) and units improvement in viral load with a time horizon of one year (trial-based economic evaluation); both from a societal and a health care perspective. Primary outcome measures were cost per unit reduction in viral load and cost per QALY, in relation to willingness-to-pay.

Findings: 213/223 participants completed the trial with a mean follow-up of 14.5 months. The primary effectiveness analyses using log-transformed viral loads show that AIMS was effective ($F(1,199) = 7.23, p = .008$). The secondary detectable-undetectable ($OR: 2.03, 95\%CI 1.06-3.89$) and treatment-failure analyses ($OR: 3.09, 95\%CI 1.18-7.94$) corroborate this finding. The intervention costs were \$94/patient/year. All cost-effectiveness analyses show that AIMS was dominant (cheaper and more effective than TAU), and the probability that AIMS is cost-effective ranges from 55% to 95%.

Discussion: This trial demonstrated that the AIMS-intervention is effective and most likely cost-effective even within the trial period. An ongoing modelling study will estimate the long-term impact. AIMS should be considered for the wide-scale adoption in routine care.

20 Retention in HIV Care Among a Commercially Insured Population, 2006-2012

Kathy Byrd (presenting)¹, Melissa Furtado¹, Tim Bush¹

¹ Centers for Disease Control and Prevention, Atlanta, GA, USA

Background: Poor retention in HIV care is associated with decreased viral load suppression and increased mortality. Nationally, an estimated 51% of persons living with HIV (PLWH) are retained in care.

Methodology: We used the 2006-2012 Truven Health MarketScan[®] Commercial claims databases to determine the unweighted proportion of PLWH who were retained, continue, and re-engaged in care. We used ICD-9-CM diagnosis codes to identify PLWH and restricted analyses to persons aged ≥ 18 years with ≥ 10 months of continuous enrollment during each 12-month period, and with ≥ 1 office visit claim in the first six-months of the 24-month retention period. Retention-in-care was defined as ≥ 1 office visit claim during each six-month period of the first 24-month period. Continuation-in-care was defined as ≥ 1 office visit claim during each subsequent six-month interval. Gap-in-care was defined as no office visit claim for >6 months and re-engagement-in-care as ≥ 1 claim after a gap-in-care. The proportion of persons not-in-care, who received HIV-related laboratory tests, was also determined. Cox proportional hazards models were conducted to determine factors associated with gaps-in-care.

Results: Of 7,913 commercially insured PLWH identified in 2006, 77% were retained-in-care and, among those continuously enrolled, 65% continued-in-care for 84 months. 1,551 PLWH experienced ≥ 1 gaps-in-care; 70% of these re-engaged in care. PLWH with ≥ 1 co-morbidities, mental illness diagnoses, and those 40-59 years were less likely to experience a gap-in-care, while those diagnosed with substance/alcohol abuse were more likely to experience a gap-in-care (all $P < 0.05$). Thirty-five to 43% of PLWH considered not-in-care continued to receive HIV-related laboratory testing.

Conclusions: Our estimates of retention in HIV care among this commercially insured cohort are higher than national estimates. The majority continued in care for an extended period of time. A significant proportion who did not meet the study definition continued engagement in care through receipt of HIV-related laboratory services.



21 Most Accurate Data Sources for Obtaining Contact Information on Adults Diagnosed With HIV for Public Health Purposes

Mabel Padilla¹, Susan Buskin², Alison Hughes³, Thomas Jaenicke⁴, Kendra Johnson⁵, Leandro Mena⁵, Susan Scheer³, Chi-Chi Udeagu⁶, Amy Rock-Wohl⁷, Joseph Prejean¹, Alexandra Oster¹, Jacek Skarbinski¹, Stanley Wei (presenting)¹

- ¹ Centers for Disease Control and Prevention, Atlanta, GA, USA
- ² Public Health Seattle and King County, Seattle, WA, USA
- ³ San Francisco Department of Public Health, San Francisco, CA, USA
- ⁴ Washington State Department of Health, Shoreline, WA, USA
- ⁵ Mississippi State Department of Health, Jackson, MS, USA
- ⁶ New York City Department of Health and Mental Hygiene, New York, NY, USA
- ⁷ Los Angeles County Department of Public Health, Los Angeles, CA, USA

Background: HIV-infected persons not receiving HIV care are at elevated risk for death and HIV transmission compared to those receiving care. Understanding and improving engagement in care are important public health activities that rely on locating and contacting HIV-diagnosed persons. A systematic comparison of the utility of contact information from different data sources in this population has not been performed.

Methodology: The Case-Surveillance-Based Sampling (CSBS) demonstration project is a pilot HIV surveillance system that selects a representative sample of HIV-diagnosed adults, including those not receiving HIV care, from HIV case surveillance registries in five state and metropolitan areas. From November 2012-June 2014, we attempted to use multiple data sources to locate and interview 2,000 sampled persons, recording source and accuracy of contact information.

Results: We queried 24 data source types for contact information. Among 1,992 persons with complete recruitment data, HIV case surveillance data allowed identification of at least one accurate phone number, address, or HIV care facility for 20%, 41%, and 72% of sampled persons, respectively. The proportion of sampled persons for whom an accurate phone number could be identified from surveillance data was as high as 41% in jurisdictions that routinely imported contact information from laboratory reports and as low as 2% in jurisdictions that did not. Among 1,191 (60%) located persons, information allowing contact was provided by HIV care facilities, HIV case surveillance, an integrated disease surveillance system, people search engines (e.g., Accurint or Spokeo), and Ryan White data in 53%, 44%, 18%, 16%, and 11% of cases, respectively.

Conclusion: Use of multiple sources of contact information likely yielded greater success in contacting HIV-diagnosed adults with HIV care facilities and HIV surveillance providing the most accurate data. Routinely importing contact information into case surveillance databases would make them more helpful for re-engaging persons in HIV care.

26 From Their Own Perspectives, Why are Out-of-Care HIV-Infected African American MSM Out-of-Care?

Jeffrey Kelly (presenting)¹, Michelle Broadus¹, Julia Dickson Gomez², Justin Rivas¹, Kevin Brown¹, Yuri Amirkhanian¹

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Background: Between one-third and half of persons diagnosed with HIV infection in the US are not receiving regular medical care. These include persons who never entered care, dropped out of care, or became lost to care systems. Until they are reached and engaged or re-engaged into medical care, their health is threatened and treatment-as-prevention efforts cannot achieve full public health impact. Some studies have examined predictors of treatment non-retention, but little is known about treatment-related views, barriers, and facilitators of care from the perspectives of out-of-care PLHIV themselves, especially African American MSM.

Methodology: Online and venue-based announcements were used in a protocol to recruit a community sample of 30 HIV-positive African-American MSM in Milwaukee who reported no recent HIV medical care visits. In-depth qualitative interviews were conducted to gain an understanding of reasons for medical care non-engagement from the men's own perspectives. Interviews were transcribed, coded, and analyzed using MAXQDA software to identify key emerging themes.

Results: Reasons for being out of care included: (1) beliefs that medical treatment is needed only when illness symptoms develop; (2) stigma and fear about rejection in African-American and church communities; (3) substance use and mental health issues; and (4) difficulties communicating with providers. Factors felt to facilitate care engagement were social support for care, acceptance of one's condition and motivations to protect health, and development of illness symptoms.

Conclusions: ART is often seen as needed only when ill, not for prevention of illness. Community-level interventions are needed to reach PLHIV in the community with messages emphasizing benefits of early ART initiation. Better integrated substance use and mental health services with medical care, countering stigma, and bolstering social supports for care are essential for better engaging African-American MSM in care.



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

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Introduction: At least one-third of PLHIV in the US are not in medical care. Care engagement in Russia is even lower, including PLHIV who never entered, dropped out, or became lost to care systems. For treatment-as-prevention to achieve its full impact on a public health scale, the large pool of out-of-care PLHIV hidden in the community must be reached to engage in medical treatment, a neglected point on the HIV treatment cascade.

Methodology: As part of a social network intervention trial in St. Petersburg, Russia, online, venue-based, and other strategies were used to recruit HIV+ “seeds” in the community who were out of medical care or reported poor ART adherence. At enrollment, each seed invited his/her HIV+ friends into the study, who – when recruited – in turn were asked to invite their own PLHIV friends, establishing a 2-ring sociocentric network. Assessments confirmed participants’ HIV-positive status and measured their HIV care engagement and ART adherence.

Results: A total of 223 PLHIV, mostly PID, were recruited within 25 networks. The networks sized from 2 to 44 members (mean = 9.04, median = 4). 54% (n = 223) out of 411 named network members were enrolled. 26% (n = 58) of PLHIV network members were not in care (no care appointments >6 months). Among 165 participants in care, 69% (n = 114) were on ART, and 32% of them (n = 36) reported suboptimal ART adherence. Among 31% (n = 51) not on ART, therapy was never offered to 51% (n = 26), 14% (n = 7) were offered but have not started yet, 20% (n = 10) refused ART and 16% (n = 8) stopped ART.

Conclusions: One can reach out-of-care PLHIV hidden in the community by means of their social network connections with other PLHIV. This strategy holds great promise for delivering intervention to increase care engagement, re-engagement, and adherence among a large population segment of PLHIV who are otherwise very difficult to reach.

33 Adherence to Pre-Exposure Prophylaxis (PrEP) Among Gay and Bisexual Men: Prevalence and Predictors of Missed Doses

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Background: In order for PrEP in the form of once-daily Truvada to be effective, adherence to scheduled doses is necessary. Ongoing demonstration projects have found adherence to be suboptimal. The present study seeks to investigate PrEP adherence in a sample of gay and bisexual men (GBM) not involved in a demonstration project.

Methodology: In a US representative sample of 1,071 GBM, 52 (6%) were found to be currently on PrEP. These men provided data on their adherence patterns in the prior 30 and 90 days.

Results: In total, 69% reported not having missed any doses in the prior 30 days. Among those having missed a dose, 92% reported missing 2 doses or fewer. Nearly half (48%) reported not having missed any in the past 90 days; the majority (90%) missed six doses or fewer. A greater proportion of men with a college degree (63.9%) than without (25.0%) had missed a dose ($p = .01$); no significant differences were found for income, race/ethnicity, or relationship status. Forgetting (48%) was the most common reason given, followed by being somewhere other than home without their pills (26%). Only two participants reported HIV transmission risk behavior either the day before or the day of a missed dose.

Conclusions: This study indicates that GBM taking PrEP on their own volition have relatively high adherence. Given the research that 3 doses a week of Truvada has been shown to be effective in the prevention of HIV, participants in this study likely had little potential for exposure in the rare occasion that a dose was missed. Future research should be conducted to explore effective ways to help PrEP users remember to take their medication and plan ahead for times when they may not be home.



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

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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.

Methods: We conducted a randomized, controlled clinical trial of a peer mentor intervention. Eligible adults were recruited while hospitalized, and were either newly diagnosed with HIV infection or were out of care. The intervention was designed to increase information, motivation, and behavioral skills around HIV self-care, and included two in-person sessions with a volunteer peer mentor while hospitalized, followed by 5 phone calls in the 10 weeks after discharge. The attention-control intervention provided didactic sessions on avoiding HIV transmission. The primary outcome was a composite of retention in care (completed HIV primary care visits within 30 days and between 31 and 180 days after discharge) and VL improvement ($\geq 1 \log_{10}$ decline from enrollment VL) 6 months after discharge, with missing values set to failure.

Results: We enrolled 460 participants in 3 years; 417 were in the modified intent-to-treat analysis. The median age was 42 years; 74% male; 67% non-Hispanic black; 65% with enrollment CD4 cell count < 200 cells/mm³; 11% diagnosed with HIV infection while hospitalized. Baseline characteristics did not differ between the randomized groups. Twenty-eight percent of the participants in both arms met the primary outcome ($P = 0.94$). There also were no differences in pre-specified secondary outcomes, including the retention in care and VL change, but post-hoc analyses indicated a significant interaction between the intervention and length of hospitalization, with evidence of a benefit from mentoring in persons with a shorter length of hospitalization (< 7 days).

Conclusions: Although peer mentoring did not increase re-engagement in outpatient HIV care among all hospitalized, out-of-care persons, exploratory analyses suggested the benefit of this program among patients with a short hospital stay. Enhanced or more prolonged interventions warrant further study.

39 Meanings of SMS Reminders for Adherence Support Among Adults Initiating ART in Rural Southwestern Uganda

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Background: SMS text messaging is a promising tool for ART adherence support in Africa. SMS reminders have been associated with improved adherence in randomized controlled trials in Kenya, but the magnitude of impact has been modest. SMS-based interventions could be more effectively designed and implemented if we understood *how* and *why* they work. We address these “how” and “why” questions in the qualitative research reported here.

Methodology: Sixty-three adults initiating ART in rural southwest Uganda were enrolled in a mixed-methods intervention development study to assess the effects of SMS reminders and SMS-triggered social support on adherence, as measured through real-time electronic monitoring with Wisepill. Participants took part in individual qualitative interviews covering: (a) experiences with the Wisepill device, (b) acceptability and use of SMS reminders, and (c) social support received. Transcribed interview data were coded using Atlas.ti qualitative software, then inductively analyzed for content revealing “how reminders work.” Conceptual categories were developed and linked to explain reminders’ *mechanism of effect*.

Results: Participants reported daily SMS reminders helped them “develop the habit” of taking ART at the same time every day. But they also promoted adherence in another way. Reminders were seen as forms of “help,” signifying to recipients that they were not being left alone to cope with ART, but rather they were “cared about.” Interviewees reported being “encouraged” and “strengthened” in their adherence efforts because they felt cared about. This in turn inspired renewed commitment to adherence and a sense of responsibility to “carers” to “take medicine well.”

Conclusions: Receiving SMS adherence reminders has emotional and moral meaning for adults taking ART. This enhances the reminder function to reinforce adherence and improve adherence rates.



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

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Background: Assessing primary care (PCPs) and HIV care providers' (HIVPs) knowledge, experience, attitudes, prescribing capacity, and barriers to pre-exposure prophylaxis (PrEP) provision is critical to the scale-up of this prevention tool.

Methodology: We conducted an online, national survey of 171 PCPs and 210 HIVPs recruited from the 10 US cities with the highest HIV prevalence.

Results: 86% of participants had heard of PrEP, including 74% of PCPs and 98% of HIVPs ($p < 0.01$). More HIVPs (83%) than PCPs (36%) had read the CDC PrEP guidelines ($p < 0.01$) and had discussed PrEP with ≥ 1 patient (89% vs. 40%; $p < 0.01$). Overall, providers reported high, but varying levels of comfort with 8 procedural aspects of providing PrEP (e.g., discussing sexual orientation/activities, STI screening), though PCPs had lower levels of comfort than HIVPs ($p < 0.01$ on 7 items). Providers supported PrEP in general, but were divided on the issues of risk compensation, viral resistance, PrEP adherence and the utility of condoms vs. PrEP. Overall, 48% had prescribed PrEP (21% of PCPs; 67% of HIVPs), among whom, HIVPs had prescribed PrEP to more patients than PCPs (mean = 22 vs. 3 patients). 89% of HIVPs and 57% of PCPs currently prescribing PrEP were willing to have patients referred to them for PrEP. Among never-prescribers of PrEP, most would discuss (96%) or prescribe (81%) PrEP if a patient asked, though 48% of PCPs and 22% of HIVPs preferred to refer patients to another provider ($p < 0.01$). Among providers not currently willing to prescribe PrEP, 71% would take an online educational module, but only 42% would prescribe PrEP after further education.

Conclusions: PrEP familiarity and experience is higher among HIVPs than PCPs. Though current PrEP prescribers report capacity to see additional patients, PrEP availability could also be improved through interventions that address both knowledge and comfort with the procedures required to provide PrEP.

42 Experiences of Wisepill-Facilitated HIV Disclosure in Rural Southwestern Uganda

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Background: Real-time wireless adherence monitoring with Wisepill is promising for promoting adherence to antiretroviral therapy (ART). Research shows generally high rates of device acceptability; however, concerns about risk of HIV disclosure while using Wisepill remain. User experiences and consequences of Wisepill-related disclosure are examined here.

Methodology: Sixty-three HIV-infected adults initiating ART in rural southwest Uganda were enrolled in a mixed-methods intervention development study. The aim was to assess the effects of SMS reminders and SMS-triggered social support, as measured through real-time electronic monitoring with Wisepill. Participants took part in individual qualitative interviews covering: (a) experiences with the Wisepill device, (b) acceptability and use of SMS reminders, and (c) social support received. Transcribed interview data were coded using Atlas.ti software. Review of coded data revealed device-related HIV disclosure to be an emergent theme. Data were subsequently re-examined to understand fears, experiences, and consequences of disclosure for participants.

Results: Some participants hesitated to "be seen" with Wisepill and "asked questions" about the device, as these interactions might put them at risk for disclosure of HIV status. Fearing isolation and discrimination, users avoided disclosure by hiding Wisepill or lying about its purpose when questioned about the device. Despite such efforts, "being seen" with Wisepill at times resulted in undesired disclosure. Alternatively, some participants used the device as a tool to initiate a conversation about their HIV status. Whether deliberate or unintentional, few Wisepill-facilitated disclosures generated the expected negative consequences. Instead, some participants felt disclosure expanded the network of individuals they could rely on for help should their health decline or adherence support be needed.

Conclusion: Although being seen with Wisepill can trigger unwanted disclosure, some users intentionally use Wisepill to disclose HIV status. By facilitating disclosure, Wisepill can increase social resources available to support overall health and ART adherence for HIV-infected individuals.



51 Binge Drinking Decreases Weekend Adherence in an RCT From Low-/ Middle-Income Countries

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Background: Adherence is the cornerstone to Combination Antiretroviral Therapy (cART) efficacy. Understanding different patterns of adherence among HIV-infected individuals is crucial to design tailored interventions. We aimed to evaluate: 1) if there was a difference in weekday vs. weekend adherence, and 2) predictors of this difference.

Methodology: ACTG 5234 was a randomized trial conducted in 8 low/middle income countries (LMIC) which evaluated partner-based directly observed therapy to increase adherence after first-line treatment failure. Adherence data, measured by microelectronic monitors, were summarized in percent of doses taken during weekdays and weekends for each participant over 4 quarters (successive 12-week periods). Baseline characteristics (sex, age, CD4, viral load, years on cART, substance use and binge drinking (≥ 5 alcoholic beverages on a single occasion) in last 30 days, self-perception of health, treatment arm, site) and time on study were evaluated using Generalized Estimating Equations.

Results: Data for 255 (99%) participants were analyzed: 49.8% were male, median age was 37 years. At study entry, 22.3% reported binge drinking at least once in last 30 days. Adherence was higher on weekdays than on weekends (median: 96.0% vs 94.4%; 93.7% vs 91.7%; 92.6% vs 89.7% and 93.7% vs 89.7% in quarters 1-4, respectively, all $p < 0.001$). In multivariable analysis, the difference in percent of doses taken on weekdays and weekends among binge drinkers was on average 3.68 percentage points larger than in non-binge drinkers (CI 95% 1.28-6.07). Longer time on study was associated with greater difference while being at Haiti site and reporting fair/poor health were associated with smaller difference.

Conclusions: Adherence was worse on weekends. This difference was small at treatment initiation, but increased over time and was larger for binge drinkers. Binge drinking is a potentially modifiable determinant of drop-offs in weekend adherence. Screening and new interventions to address it may improve adherence in LMIC.

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

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Background: Brazil has a concentrated HIV epidemic and MSM are disproportionately affected. Yet, no data is available on the HIV care cascade for this population. This study aimed to assess the HIV care cascade among MSM newly diagnosed through innovative testing strategies in Rio de Janeiro.

Methodology: Data from 793 MSM tested for HIV in a LGBT NGO and in a mobile testing unit located in a gay friendly venue were analysed. A 12-month-after-HIV-diagnosis-censored cohort was established using CD4, viral load and antiretroviral therapy (ART) longitudinal data from those diagnosed with HIV. The relative risks (RR) of individuals in the cascade-stages were estimated using generalized linear models (GLM) according to age, self-declared skin-color, education, history of STD, drug use and prior HIV testing.

Results: From Jan-2013 to Jan-2014, 793 MSM were tested, 131 (16.52%) were HIV-infected. As of January 2015, 95 (72.52%) were linked to HIV care, 90 (68.7%) were retained in HIV care, 80 (61.07%) were on ART, and 50 (38.17%) were virologically suppressed. Being non-white (RR[CI95%] = 1.788[1.157;2.761]), having a previous STD (RR[CI95%] = 1.632[0.956;2.785]) and a prior HIV-testing (RR[CI95%] = 1.918[1.253;2.936]) were risk factors associated with a HIV diagnosis. A higher linkage to care among MSM older than 30 year-old (RR[CI95%] = 2.481[1.054;5.838]) was observed. There were no statistically significant predictors of retention, use of ART and viral suppression.

Conclusions: Using out of health-care settings testing strategies we were able to access a high risk MSM population. Despite the universal care coverage and the test-and-treat policy adopted in Brazil, the MSM cascade of care indicates that strategies to increase linkage to care and prompt ART initiation are critically needed. Interventions targeting non-white and young MSM should be prioritized.



68 The Paradox of Retention

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Background: Recent studies demonstrate varying likelihoods of suppression among patients who do not meet the current formal definitions of retention in care. We evaluated the relationship between viral load suppression and continuous retention as measured by clinical visits within established HIV programs in New York State during 2012 and 2013.

Methodology: Retention in care was defined as having had a visit in each 6-month period of the 2-year review period with at least 60 days between the first and last visit of adjacent quarters. A sample of 8658 adult PLWH with varying characteristics was derived through chart review at 173 facilities participating in the New York State Quality of Care Program. The relationship between retention in care and viral load suppression was examined using statistical measures of validity and logistic regression.

Results: Of 8,658 eligible patients, 7,093 (81.9%) achieved viral load suppression while 6,863 (79.3%) were retained in care. The rate of viral load suppression was higher among patients retained (85.0% vs. 70.4%, $p < 0.01$). Continuous engagement in care had high specificity (82.2%) but low sensitivity (21.0%) as an indicator of viral load suppression. Among patients not retained in care, those who were older than 45, Caucasian, and of homosexual transmission risk were more likely to be suppressed. Non-retained patients who used drugs or were unstably housed were at an elevated risk of being unsuppressed ($p < 0.05$).

Conclusion: A large proportion of patients not continually retained in care were suppressed on their final viral load test. Continuous retention in care was more strongly associated with viral load suppression in vulnerable populations. Personalized measures of retention in care may be an appropriate response to the changing nature of HIV medical care.

74 Significant Uptake of Truvada for Pre-Exposure Prophylaxis Utilization in the US in 2014

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Background: TDF/FTC (TVD) was approved in July 2012 by the US FDA for pre-exposure prophylaxis (PrEP) in combination with safer sex practices. This study explores the changing characteristics of US PrEP users.

Methodology: An algorithm was used to identify TVD for PrEP use by excluding use for HIV treatment, post-exposure prophylaxis, and off-label chronic hepatitis B treatment. National electronic patient level data from 39% of all U.S. retail pharmacies between January 1, 2012, and September 31, 2014, was collected. De-identified data including prescription refills, medical claims, and patient demographics were analyzed via logistic regression model.

Results: A total of 5,272 unique individuals who started TVD for PrEP were included in this analysis. New PrEP starts have increased by 319% from 382 in 3Q2012 to 1217 in 3Q2014. The number of new starts for males per quarter has increased significantly (205 to 1064), while the number of females has declined slightly (177 to 153). The proportion of male new starts increased from 53.7% to 87.4%. Mean age was 38.2 ± 11.7 years with 10.5% being under 25 years old. Males were older (38.8 ± 11.3) than females (36.7 ± 12.5). The proportion of males under 25 was 7.5% (95% CI 6.6-8.4); females 17.0% (95% CI 15.2-18.8). Individuals prescribed TVD in 2014 had significantly higher adherence (90.9%, 95% CI 89.1-92.7%) than those in 2013 (69.6%, 95% CI 66.9-72.2%). Median proportion days covered was 78.2% (95% CI 76.9-79.5%).

Conclusion: There has been a sharp increase in the number of people starting TVD for PrEP in 2014 with a corresponding increase in adherence. The population of TVD for PrEP users in the US nationally appears to be shifting with new starts increasing considerably among males in 2014, while the number of new female starts has remained static. Small percentages of people initiating PrEP are under 25.



87 SMS Interventions to Improve Antiretroviral Therapy Adherence: A Pilot Randomized Controlled Trial

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Background: Cellular technology may improve adherence; however, results to date have been mixed. We present preliminary findings from a pilot randomized controlled trial comparing multiple types of SMS adherence support.

Methodology: Sixty-three individuals initiating ART in Uganda were randomized (1:1:1):

- SCHEDULED SMS – (daily for one month, weekly for two months), then triggered SMS (by real-time detection of missed dosing events); SMS to social supporters (if no dosing events for >48 hours) added after three months
- TRIGGERED SMS – starting at enrollment; SMS to social supporters added after three months
- CONTROL – No SMS

Adherence was monitored in real-time (Wisepill). HIV RNA was determined at three and nine months. Percent doses taken each month was compared by linear generalized estimating equations; >48-hour lapses in dosing events were compared by Poisson regression.

Results: Median follow-up in this analysis was 7.9 months, median age was 31 years, and median enrollment CD4 count was 322 cells/ml; 97% of participants were taking once daily tenofovir/emtricitabine/efavirenz. Median (IQR) adherence and number of >48-hour lapses were 94.2% (89.9-98.5%) and 4 (1-9) in the Scheduled SMS arm, 89.8% (77.7-95.8%) and 8 (2-10) in the Triggered SMS arm, and 92.0% (78.2-95.2%) and 4 (2-16) in the Control, respectively. Compared to Control, adherence was 9.0% higher ($p = 0.04$) and >48-hour lapses were less frequent (IRR 0.7, $p = 0.003$) in the Scheduled SMS arm. Differences reached significance at six months. Adherence and >48-hour lapses were similar in the Triggered SMS arm and Control. All but one HIV RNA levels were undetectable (<400 copies/ml) at three months.

Conclusions: Scheduled SMS reminders early in ART may increase adherence, although significant differences did not occur until six months of follow-up. Differences in types of adherence support needed and delivered among study arms should be explored. Larger studies should assess the impact of SMS and real-time adherence monitoring on virologic outcomes.

104 Intentions to Initiate PrEP Among Gay and Bisexual Men are Driven by Demographic Factors, Sexual Risk, and Perceptions of Providers: Results From a Nationally Representative Sample

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Background: Several large PrEP efficacy trials and demonstration projects have been conducted with gay/bisexual men (GBM) and several smaller studies have examined willingness to take PrEP. However, there have been no large, nationally representative studies of GBM focused on intentions to begin PrEP and few that examine various barriers to PrEP uptake, particularly perceptions of PrEP stigma from one's network and providers.

Methodology: We surveyed 800 HIV-negative GBM about PrEP intentions in the nationally representative *One Thousand Strong* panel, which included a modified measure of perceived PrEP barriers. We conducted a multivariable logistic regression examining structural, demographic, and behavioral predictors of PrEP uptake intentions.

Results: More than half (56.5%) were willing to take PrEP, though only 16.2% intended to; among those, 58.0% intended to do so within three months. The barriers scale reduced to three factors – social stigma, health consequences, and provider stigma. In a multivariable model, younger age ($p = .005$), having a primary care provider who knew the participant was GBM ($p = .04$), Black race (versus Latino $p = .04$ and White $p = .08$), less than college education ($p = .001$), being single ($p = .01$), having engaged in condomless anal sex ($p = .003$), perceiving fewer health consequences of PrEP ($p = .02$) were independently associated with intentions to start PrEP. Health insurance status, region of the country, population density of home region, income, recent STI-positive result, and social stigma regarding PrEP were not associated.

Conclusions: Demographically and behaviorally, groups in which the HIV epidemic is most concentrated (e.g., younger, men of color, lower socioeconomic status, engaging in sexual risk) have greater intention to begin PrEP, emphasizing the need for programs improving access. Ironically, having a provider who knew men were MSM and concerns about provider stigma were both positively associated with PrEP intentions, highlighting the complex role perceptions about providers play in PrEP initiation.



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

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Background: Poor mental health, housing instability, and substance use can pose significant barriers to achieving optimal HIV care outcomes, and are difficult to effectively address within an HIV clinical care setting. The New York City Ryan White Part A HIV Care Coordination Program (CCP) utilizes a client-centered, multidisciplinary team approach to address barriers to care and treatment.

Methodology: Using program data and surveillance-based laboratory records, we examined baseline characteristics and pre- and post-enrollment outcomes for 5,941 clients enrolled from December 2009 through March 2013 and diagnosed >1 year before CCP enrollment. We assessed engagement in care (EiC, ≥ 2 tests ≥ 90 days apart, with ≥ 1 in each half-year) and viral load suppression (VLS) (VL ≤ 200 copies/mL on latest test in the second half of the year). We then calculated for those outcomes pre- versus post- enrollment relative risks (RRs) and confidence intervals (CIs) using generalized estimating equations.

Results: A substantial proportion of CCP clients demonstrated unmet needs: unstable housing (23%), recent hard drug use (16%) or poor mental health (30%). Among CCP clients overall, the proportions with EiC and VLS increased from 69.6% to 90.7% ($RR_{EiC} = 1.30$, 95% CI: 1.28-1.33) and from 30.3% to 54.4% ($RR_{VLS} = 1.80$, 95% CI: 1.73-1.87), respectively. Outcomes also significantly improved among subgroups with poor mental health, from 68.5% to 90.3% on EiC and from 30.1% to 53.2% on VLS ($RR_{EiC} = 1.32$, 95% CI: 1.28-1.36; $RR_{VLS} = 1.77$, 95% CI: 1.65-1.90); with unstable housing, from 63.8% to 90.6% on EiC and from 21.8% to 44.3% on VLS ($RR_{EiC} = 1.42$, 95% CI: 1.36-1.48; $RR_{VLS} = 2.03$, 95% CI: 1.83-2.25), and with recent hard drug use, from 74% to 90.5% on EiC and from 18.9% to 40.9% on VLS ($RR_{EiC} = 1.22$, 95% CI: 1.18-1.27; $RR_{VLS} = 2.17$, 95% CI: 1.90-2.48).

Conclusions: Client-centered, multidisciplinary HIV care coordination shows promise, including among persons with key psychosocial barriers to engagement in HIV care and treatment adherence.

114 Familiarity With and Preferences for Oral Versus Long-Acting Injectable PrEP in a Nationally Representative US Sample of Gay and Bisexual Men

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Background: PrEP has been shown to be efficacious in the prevention of HIV in the forms of once-daily Truvada and, in emerging research, as a long-acting injectable (LAI). Adherence to once-daily Truvada has been suboptimal in demonstration projects, thus LAI PrEP may provide even greater protection, particularly among groups who are likely to have lower adherence, though it is presently unclear whether individuals have a preference for oral versus LAI PrEP.

Methodology: We recruited a nationally representative sample of 857 gay and bisexual men (GBM) and asked about both willingness to take and preferences for oral and LAI-PrEP.

Results: A majority of GBM (84%) had never heard of LAI PrEP. More than half (56.5%) expressed willingness to take daily PrEP and a similar proportion (53.4%) expressed willingness to take LAI PrEP. Given the choice between daily and LAI PrEP, nearly half (46.6%) preferred LAI PrEP and another 10.0% said they would prefer whichever was more effective, while only 14.2% preferred daily oral PrEP. Asked to choose between daily, intermittent, and LAI PrEP, participant preferences were 22.4%, 14.0%, and 63.6%, respectively. Asked about the barriers to taking PrEP, the two most salient were the potential long-lasting effects on health and the potential side effects, which each received the same average rating (3.1 of 4) for both daily and LAI-PrEP, $p = .94$, $p = .20$, respectively.

Conclusions: Somewhat unsurprisingly, this nationally representative sample of GBM was largely unaware of LAI PrEP, though once told about it, willingness to LAI PrEP was comparable to that of oral PrEP. In fact, LAI PrEP was more strongly preferred than daily or intermittent oral PrEP. These results suggest that GBM not only prefer LAI PrEP but also perceive its potential health consequences similarly, suggesting the availability of LAI PrEP may increase uptake of biomedical prevention.



116 The Role of Neurocognitive Functioning in the Day-Level Association Between Substance Use and Medication Adherence Among HIV-Positive Gay and Bisexual Men

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Background: Medication adherence is critical to the health of HIV-positive individuals as well as to the reduction in transmission risk to sex partners. Though research has looked at substance use and neurocognitive functioning in their role on adherence, less research has been conducted utilizing day-level data and looking at the interaction of substance use and neurocognitive functioning.

Methodology: We enrolled diverse sample of 167 HIV-positive gay and bisexual men (GBM) who reported recent crystal methamphetamine use and HIV medication non-adherence and administered a 14-day timeline follow-back (TLFB) interview of substance use and medication adherence as well as the computerized Iowa Gambling Task (IGT). We utilized multilevel modeling to predict daily medication non-adherence by daily club drug, marijuana, and heavy drinking use as well as individual-level IGT performance and examined the interaction of IGT performance with each substance.

Results: A latent growth curve model was utilized to extract an intercept and quadratic slope for IGT performance and had strong fit, $\chi^2(6) = 6.47$, RMSEA = 0.02, CFI = .99, SRMR = .04. The quadratic slope was utilized as an indicator of performance in multilevel models adjusted for the intercept as well as age, race, and education. Both club drug use (AOR = 3.15, $p = 0.005$) and heavy drinking (AOR = 2.54, $p < 0.001$) predicted medication non-adherence; marijuana did not. There was no main effect of IGT performance on non-adherence, though better performance reduced the odds of non-adherence on days when club drugs were used (AOR = 0.80, $p = 0.005$).

Conclusions: Overall these findings suggest that decision-making deficits do not directly impact medication adherence but rather may further sensitize the brain to the negative effects of drug use. The assessment of neurocognitive functioning using brief, mobile (e.g., on a tablet) assessments – including the IGT – may provide novel information to inform HIV treatment and care that is tailored to substance users.

118 All Science is Local: Engaging Communities to Enable Successful Implementation of Antiretroviral Prevention Strategies

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Introduction: HIV prevention science is dynamic. Successful implementation of antiretroviral-based (ARV) prevention, including PrEP and treatment, requires consideration of local political, economic, sociocultural and technological contexts and meaningful involvement of diverse stakeholders.

Description: The AIDS Foundation of Chicago (AFC) and RAND Europe developed and facilitated an interactive scenario planning process and toolkit to support local jurisdictions' engagement around ARV-based prevention. AFC and RAND convened 26 individuals representing governmental and community-based organizations from 13 US cities with the highest HIV burden to: 1) learn the Mapping Pathways process of analyzing political, economic, sociocultural, and technological factors to develop future scenarios focusing on ARV-based prevention; 2) discuss opportunities and challenges particular to their jurisdictions; 4) explore strategies to capitalize on opportunities and mitigate challenges. This train-the-trainer approach provides an evidence-informed method for these cities to address ARV-based prevention strategies with a local lens and determine their own policies, programs and pathways for implementation.

Lessons Learned: Affording participants' the opportunity to offer feedback and recommendations for the toolkit and workshop exercises engendered ownership of the process and expressed commitment to implement it in their own jurisdictions. Participants found scenario planning process to be: 1) engaging and useful way to mobilize communities to consider ARV-based prevention options) adaptable and accommodating to various timeframes; and 4) creative way to approach difficult challenges.

Recommendations: AFC and RAND will integrate toolkit revisions and lessons learned from participants' local implementation efforts. The toolkit will be made available online so that community stakeholders in any jurisdiction can use the scenario planning exercises to engage their communities around the implementation of ARV-based prevention strategies in their local contexts.



132 Delivery of Antiretroviral Therapy Adherence Support Services by HIV Care Providers in the United States

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Background: IAPAC and several federal agencies recently updated recommendations for clinical providers to support sustained, high adherence to antiretroviral therapy (ART). However, little is known about delivery of these services by HIV care providers.

Methodology: During 2013-2014, we surveyed a probability sample of HIV care providers in the United States. We estimated the percentage of HIV providers who performed at least two of three ART support activities to most or all patients. We used the Rao-Scott chi-square test to assess associations of this outcome with provider characteristics. We included variables associated with the outcome at $p < 0.05$ in a multivariable model to identify significant ($p < 0.05$) predictors and their adjusted prevalence ratios (aPR) for providing at least two ART support activities.

Results: In all, 1231 providers participated (adjusted response rate of 64%). Almost all providers (96%) discussed adherence at every visit, 60% offered advice about tools to increase adherence, 54% referred non-adherent patients for supportive services, and 70% provided at least two of these three services. Provider characteristics independently associated with providing at least two ART support activities were being a nurse practitioner (aPR 1.33, $p < 0.01$), providing primary care (aPR 1.45, $p = 0.02$), practicing in a Ryan White HIV/AIDS Program (RWHAP)-funded facility (aPR 1.34, $p = 0.03$), and reporting always or usually having enough time to provide all needed care to established HIV patients (aPR 1.22, $p < 0.01$).

Conclusions: Most providers report following guidelines for regular adherence assessment but providers less frequently report offering services to non-adherent patients. Providers who do not provide primary care and those who do not practice in RWHAP-funded facilities may need assistance to ensure that their non-adherent patients receive appropriate support. Structural changes that would allow providers more time for patient care may increase the provision of ART adherence support.

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

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Introduction: San Francisco Department of Public Health's LINC navigation program provides short-term navigation to HIV-infected patients who are out of care. Whether patients who are re-linked to care achieve HIV viral load suppression is unclear.

Description: Patients who were lost to follow-up from HIV care (no visit in >6 months) or who did not link to care within 90 days of HIV diagnosis are eligible for referral to the LINC program. Patients who are located and agreed to services are provided assistance in re-linking to HIV care over a 90-day enrollment period. We used surveillance data to compare HIV RNA viral suppression (VL < 200) at LINC enrollment and 3-12 months after case closure for patients referred in 2012 and 2013. Patients without a viral load were considered not suppressed.

Lessons Learned: Among 315 patients who were referred to LINC, 66 (21%) were ineligible (in-care elsewhere, deceased, moved, or incarcerated), 8 (2%) refused services, 125 (40%) could not be located and 116 (37%) were located and enrolled. The majority of enrolled patients were male (88%). Mean age was 41 years (SD = 11 years), 46% were White, 25% were Black, and 21% were Hispanic. Eighty percent of patients were virally suppressed at least once prior to LINC enrollment; however, only 23% were suppressed in the year prior to referral. A total of 74% of enrolled patients were successfully re-linked to care. The median time from enrollment to re-linkage was 3 months (IQR: 3-4 months.) Only 17% of all enrolled patients were virally suppressed during the course of LINC services, however, 43% were suppressed 3-12 months after case closure (51% of those who were re-linked and 23% of those were not re-linked; $p = 0.007$).

Recommendation: Short-term navigation services that re-linked patients to HIV care doubled the rate of viral suppression 12 months after the completion of the intervention.



170 Project Accept: Acceptability of a Behavioral Intervention to Promote Engagement in Care for Youth Newly Diagnosed With HIV

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Background: Youth newly diagnosed with HIV are among those least likely to be engaged in medical care. Interventions should promote improved engagement as well as medication adherence. This presentation examines youth acceptability data for one such intervention.

Methods: ACCEPT is a gender-specific behavioral intervention, based on promising pilot data, delivered through a combination of individual and group sessions co-facilitated by a mental health professional and an HIV-positive peer. ACCEPT is being evaluated through a randomized controlled trial in four cities. Acceptability is measured via session evaluation forms using a 4-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree), and open-ended questions.

Results: Of the 57 participants (males = 45; females = 12; ages 16-24) randomized to ACCEPT, overall attendance ranged from 67% to 100%. Across sessions, youth reported that they learned a lot ($M = 3.79$, $SD = .33$; males $M = 3.83$, $SD = .42$ vs. females $M = 3.63$, $SD = .49$, $p = .000$), that the topics were relevant to their lives ($M = 3.75$, $SD = .57$; males $M = 3.81$, $SD = .48$ vs. females $M = 3.51$, $SD = .84$, $p = .000$), and that they felt comfortable participating ($M = 3.79$; $SD = .51$ males $M = 3.83$, $SD = .48$ vs. females $M = 3.66$, $SD = .51$, $p = .004$), but significant gender differences were found. The topics most frequently identified as helpful were: serostatus disclosure, HIV/AIDS education, and medical provider question/answer opportunities. Participants also liked the overall sense of support gained from the group sessions. Participants raised concerns regarding the length of some scripted facilitator text and challenging group dynamics between participants.

Conclusions: Gender-specific interventions to assist newly diagnosed youth must address a variety of topics related to the behavioral, emotional and health challenges they face. Group-based interventions are feasible and acceptable to HIV-positive youth but need to consider delivery and group dynamics to enhance support. Despite the efficacy of ARV treatment, behavioral interventions are still needed to promote engagement in care as well as medication adherence.

171 Engagement is Key to Effectiveness of Individualized Texting for Adherence Building (iTAB) Among HIV-Positive Methamphetamine Users

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Background: HIV infection and methamphetamine use disorders (HIV/MA) are highly comorbid, and MA use is associated with poor adherence to antiretroviral (ARV) therapy. The present study assessed the association between engagement (i.e., responsiveness to text message prompts) and electronically-monitored ARV adherence among HIV/MA persons who participated in a randomized controlled trial of an individualized texting for adherence building (iTAB) intervention.

Methodology: Fifty HIV-positive recent MA-using participants were randomized to iTAB ($n = 35$ per protocol) and 25 to an active comparison intervention (CTRL; $n = 19$ per protocol). A single "sentinel" ARV medication was tracked using the Medication Event Monitoring System (MEMS) and the proportion of correctly taken doses (i.e., doses taken within a \pm two-hour window of the target does time) over 30 days was used as the primary adherence outcome. Participants in the iTAB group received personalized ARV medication reminder texts, and both groups received daily text messages assessing mood and MA use.

Results: The treatment groups did not differ in mean MEMS adherence rates nor in engagement level (# responses / # of text prompts) (p 's $> .05$). A multivariable model including treatment arm (iTAB vs. CTRL), engagement level, and the interaction between these factors accounted for 23% of the variance in the per-protocol analyses ($p = .52$).

Conclusions: Engagement, in the context of personalized medication reminder texts, appears to be predictive of ARV adherence among HIV-infected substance users and may be a useful proxy for differentiating between persons who are effectively adhering to medications and those who are not. Interventions that optimize treatment engagement, and have triggered escalations for care among those who are not engaged, may improve ARV adherence in the context of active substance use.



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

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Background: While PrEP is a promising HIV prevention strategy, questions remain about its potential as a sustained intervention for high-risk individuals. This study examined the extent to which effectiveness in a demonstration project could extend beyond study participation and positively impact the health of former participants.

Methodology: Data are drawn from SPARK, an NYC-based PrEP Demonstration project conducted in collaboration with a community-based health center (R01AA022067). This analysis includes the first 200 patients to be enrolled and accept PrEP (01/14-03/15). We focus on both their experience in the trial, and on their transition from the demonstration project to continued PrEP care at the health center.

Results: Analysis of DBS data demonstrated high levels of adherence (92% >700fmol), and only 6% of participants (n = 11) discontinued PrEP. At study completion, staff worked with patients to create transition plans for sustained PrEP use. Almost 90% chose to continue PrEP at the health center. Of these, 29% had no previous primary care and 100% were newly linked to care at the health center. Over 31% were uninsured; 68% of these obtained access to insurance through referrals to a facilitated enrollment program and 23% were successfully enrolled in a medication assistance program. All were successfully linked to sustained PrEP. Longitudinal analyses indicate significant impact of PrEP use on mental health, including reductions in anxiety (p <.01), depression (p <.05), perceived stress (p <.01), and sexual compulsivity (p <.05).

Conclusions: PrEP demonstration projects and implementation programs can serve as gateways to both primary care and insurance for individuals who may not have seen the need for such services in the past. PrEP programs may be best situated within community health centers where such comprehensive services are available. PrEP has the potential not only to reduce HIV risk, but also to improve mental health outcomes.

175 Quantifying Variability in Missed Pharmacy Visits Among HIV-Infected Patients After Initiation of Antiretroviral Therapy in Zambia

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Background: The public health impact of antiretroviral therapy in Africa depends on high adherence to scheduled medication pick-up appointments. Although many studies document a high prevalence of missed visits, the differential contribution of individuals to the overall burden of missed visits has not been well described. We sought to evaluate the extent to which missed visits are distributed or concentrated among a population of adults on ART in network of clinic sites in Zambia.

Methodology: We examined adults who initiated ART between January 1, 2012 and December 31, 2014. Pharmacy visit dates, appointment dates, and other clinical information were obtained through the electronic medical record system used in routine clinical care. We plotted the cumulative fraction of missed visits against the cumulative proportion of patients using a Lorenz curve. These findings were also stratified by time since ART initiation.

Results: Overall, among 105,579 patients (38% male, median age 35 (IQR 30-42), median enrollment CD4 count 254 cells/mm³ (IQR 132-394), median time on ART 345 days (IQR 150-638)), 16.5% of patients accounted for 50% of missed pharmacy visits, while 34.7% missed no pharmacy visits during this time period. The proportion of patients missing one or more pharmacy visits increased substantially with time since ART initiation: 46.6% at 3 months, 66.2% at 6 months, and 83.7% at 12 months. A similar trend appears when stratified by time on ART: 23.8% of those on ART 0-6 months have missed ≥1 visit versus 65.8% for 6 months-1 year, 87.5% for 1-2 years, and 95.8% for 2-3 years.

Conclusions: Missed visits are not equally distributed in the clinic population with a relatively small fraction of patients contributing the majority of missed visits. Interventions to increase retention in the first six months of ART may need to target a small group to be optimally effective and efficient, whereas over the longer term, a larger proportion of patients may benefit from retention support.



176 Personal Outreach by a Trained Social Worker is an Effective Intervention to Re-Engage Patients With HIV in Care

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Background: Retention in care is a large problem in our population. The purpose of this project was to see if outreach by a social worker could re-engage patients who had fallen out of care.

Methodology: Patients who had attended our clinic in the past five years and did not meet the HRSA definition of retention in care in 2014 were identified. Patients were categorized as fallen out of care, transferred care, deceased, or incarcerated using record review and personal communication. Patients who had fallen out of care were contacted by phone to schedule an appointment. If this was unsuccessful, a letter was mailed. If both interventions failed and as time allowed, a home visit was made.

Results: A total of 195 patients out of our clinic of over a 1,000 were not retained in care. 77 (39.5%) had transferred their care, 13 (6.7%) had died, 13 (6.7%) were incarcerated, and the remaining 92 (47.2%) had fallen out of care. The patients who had fallen out of care had a mean age of 41 (range of 22 to 72), 78% African American, 8% Hispanic, and 72% male. They had a median CD4 count of 327 (range 1 to 1,516). Fifteen (16%) were contacted by a phone call and of those 93% (14) scheduled with 60% (9) attending the visit. 69 (75%) were unable to be contacted by phone and a letter was sent, 33% (23) scheduled with 23% (16) attending the visit. Six (6.5%) received a phone call, letter, and home visit, 33% (2) scheduled with 17% (1) attending the visit.

Conclusions: Many of the patients identified had not actually fallen out of care. Telephone contact was an effective intervention, reengaging patients at a high rate (60%). The next level of contact did reengage patients but at lower rates likely reflecting the difficulty of locating patients who failed the first intervention.

177 Social Support Through Observational Trial Participation Among HIV Patients in Southwest Uganda

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Background: Social support, defined as delivery of psychological and material resources from one's social network, facilitates antiretroviral therapy adherence. Little attention has been paid to social support that research participants gain through study participation, and its potential ethical and practical implications.

Methodology: The Uganda AIDS Rural Treatment Outcomes (UARTO) study is a longitudinal, observational cohort study of ART adherence in southwest Uganda using real-time electronic adherence monitors. Twenty UARTO participants were enrolled in a qualitative study of perceptions of research participation. Participants were asked about 1) likes and dislikes of participation in UARTO, 2) support received from study staff, and 3) ways that study participation affects adherence. Transcribed interviews were inductively coded for themes related to "social support through research" using NVIVO 10. Conceptual categories were iteratively developed from these themes to describe the nature of support that participants gained from study participation.

Results: Most participants described gaining social support from other participants and research staff. Two main types of support—instrumental and emotional—were identified. Instrumental support included economic support (e.g. compensation for study-related transport costs, not intended to be) and medical/adherence support (typically, impromptu advice from research staff and other participants). Emotional support included feeling 'cared for,' a sense of belonging to the research community, and feeling 'hope' for the future. Emotional support was partly due to a perception of real-time adherence monitoring as a source of attention and encouragement. Social support from study participation was not intended.

Conclusions: Through involvement in a longitudinal cohort study of HIV adherence, participants can gain social support that fulfills instrumental and emotional needs. This creates benefits for participants but also potential complications. Social support may influence participants' adherence behavior and confound observational assessments, or create ethical challenges like dependence. Investigators should consider these potential complications in longitudinal study design.



179 Co-Calibration of Two Validated, Self-Reported Measures of ART Adherence in the CFAR Network of Integrated Clinical Systems (CNICS) Research Network and STTR Consortium

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Background: Antiretroviral adherence is an important determinant of clinical success assessed in many HIV studies. Harmonizing antiretroviral self-reported adherence data from several studies that use different measures is difficult without a co-calibration equation to convert between validated scales. Two commonly used validated ART adherence measures are the AIDS Clinical Trials Group (ACTG) questionnaire and the Visual Analog Scale (VAS).

Methodology: A robust linear regression co-calibration equation was developed in a clinical care cohort (N = 1,045) representing six U.S. sites. The outcome was the 30-day VAS percentage of ART taken and the predictors were multiple 14-day ACTG sub-questions. We evaluated the equation's goodness-of-fit in four separate STTR (Seek, Test, Treat, Retain) consortium studies with both measures.

Results: We developed a three-phase decision rule to convert ACTG to VAS. When the last missed dose on the ACTG was reported as more than thirty days ago the VAS was set to 100%. If "doses missed" was zero for all measures, VAS was 100%. Otherwise the regression equation was used on the remaining 359 participants. Among participants missing one or more doses, VAS was estimated as 96.8% minus 2.9% times the number of missed doses ("doses per day" was non-significant). There were four STTR convenience samples of ART users: 2 criminal justice (n = 441); 1 international (n = 79); and 1 domestic high-risk (n = 29). Correlation was $r = 0.81$ in the criminal justice group, $r = 0.39$ in the international group, $r = 0.49$ in the high-risk group, and $r = 0.71$ overall. When outliers due to inversion of the VAS scale were excluded (n = 15), these correlations were 0.89, 0.81, 0.86, and 0.87, respectively.

Conclusions: A simple decision rule allowed us to co-calibrate between these two measures of adherence by converting the ACTG estimates to the VAS scale ($r^2 = 0.76$), allowing changes in instruments without loss of legacy data and combining data from studies with different instruments.

182 Depressive Symptoms Mediate HIV-Related Physical Symptoms on Adherence to Antiretroviral Medications

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Background: Low levels of adherence to antiretroviral medications have been associated with detrimental health outcomes in persons living with HIV/AIDS (PLWHA). Despite its critical importance, many PLWHA struggle with adherence. HIV-related physical symptoms have been considered as one of the main predictors of poor medication adherence, yet the underlying mechanisms of this relationship remain uncertain. The purpose of this study was to evaluate depression as a potential mechanism by which HIV-related symptoms influence antiretroviral medication adherence and to identify if particular clusters of HIV symptoms are susceptible to this mechanism.

Methodology: 124 PLWHA who completed a baseline questionnaire from a larger multi-visit intervention study were evaluated. Study variables included HIV-related symptoms (HIV Symptom Index), depression (CESD in the AIDS Clinical Trial Group's Baseline Adherence Questionnaire), and medication adherence (Medication Event Monitoring System; MEMS). Demographic variables that were significantly associated with adherence ($p < 0.10$), crystallized and fluid cognitive abilities, and long-term verbal memory were included as covariates.

Results: Study participants were mostly men (71%) and African American (61%) or white/non-Hispanic (35.5%). The average age was 47 years (SD = 8.69). Bifactor model showed two clusters of HIV-related symptoms: general HIV-related symptoms and gastrointestinal (GI) symptoms. Structural equation modeling was used to explore relations among HIV-related symptoms, depression, and medication adherence. Both general HIV-related symptoms and GI symptoms were related to higher levels of depressive symptoms ($p < 0.001$ and $p = 0.003$ respectively), and higher levels of depressive symptoms were related to lower levels of medication adherence ($p = 0.017$). General HIV-related symptoms were not directly related to adherence. The indirect effect of general HIV-related symptoms on adherence, as mediated by depression, however, was statistically significant ($p = 0.04$).

Conclusions: Findings show the effect of depression on the association between HIV-related symptoms and medication adherence and highlight the importance of early recognition and evaluation of symptoms of depression to improve medication adherence.



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

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Background: Primary care providers (PCPs) are likely to encounter persons at risk for HIV acquisition and could be pivotal in implementing HIV pre-exposure prophylaxis (PrEP). However, few studies have assessed PCP attitudes towards and experiences with prescribing PrEP.

Methods: During September 2013 to August 2014, in-depth qualitative interviews were conducted with PCPs at an academic medical center ("generalists"; n = 19) and a community health center specializing in the care of lesbian, gay, bisexual, and transgender patients ("LGBT-specialists"; n = 12). Interview topics regarding PrEP included knowledge, attitudes, prescribing experiences and decision-making. Analyses utilized inductive methodology.

Results: Participants' median age was 39; 45% were female, 77% were white. Many generalists were unfamiliar with PrEP ("not at all on the radar"), whereas LGBT-specialists had detailed knowledge and prescribing experiences. Providers indicated initial skepticism regarding PrEP. Over time, however, LGBT-specialists have become comfortable recommending PrEP, given positive early prescribing experiences, limited evidence of individual or societal harms, and beliefs that HIV remains a high-morbidity infection. Although inexperienced with PrEP, generalists considered preventive medicine to exist within their purview and expressed interest in becoming proficient with PrEP. They believed competency could be attained with brief trainings, clear-cut prescribing protocols, and minimal prescribing experience (e.g. see one, do one), analogous to other preventive medications (Plan B). However, both physician groups highlighted major areas of uncertainty with decision-making. Dilemmas included whether to prescribe (or refill) for persons who: (1) have psychosocial conditions predictive of risky behaviors and medication non-adherence (e.g. methamphetamine abuse); (2) report low-risk behaviors but request PrEP; or (3) disregard monitoring recommendations while using PrEP. When uncertain, providers generally deferred to patient preferences.

Conclusions: Boston-area LGBT health specialists are early adopters of PrEP provision. Diffusion of PrEP into generalist practices could occur if effective trainings and decision-support tools are developed and disseminated, particularly if they incorporate guidance for complex prescribing scenarios.

184 "Kiki With Your Doctor?!?" Developing a Novel Social-Media Based Linkage-to-Care Intervention for Men Who Have Sex With Men (MSM) and Transgender (TG) Individuals in New York City

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Introduction: Addressing HIV disparities with biobehavioral interventions (e.g. PrEP and treatment-as-prevention) require individuals at risk and with HIV to have access to care. Therefore, we sought to develop a social media-based linkage-to-care intervention for HIV-negative and infected Black and Latino MSM and TG in the Bronx, NY using a community-based participatory research (CBPR) approach.

Description: To develop 'Engage-NYC,' we recruited MSM peer leaders and formed an interdisciplinary team including the peer leaders, clinical providers and staff, and a social media marketing firm. We then conducted focus groups with MSM/TG to explore barriers to and facilitators of care engagement using the Information-Motivation-Behavioral (IMB) model as an analytic framework. Peers used findings to develop messages addressing identified barriers and facilitators to be disseminated online. We also developed a project website, to which the online messages would link, which provided information about clinical services and ways to contact a patient navigator. The outreach messages were then displayed over two 24-hour periods on three social media sites. We measured engagement via number of click-through rates, webpage visits, number of contacts, and appointments made. We then used this information and incorporated ongoing feedback from peers (who solicited feedback from their online and offline networks) to further refine intervention components (e.g., outreach messages, graphics, webpage, and patient navigator work-flows). Engage-NYC is now being pilot tested via multiple social media platforms.

Lessons Learned: We found that certain messages (e.g., PrEP-related) engaged more online users to come in for appointments than others (e.g., general health-related). Incorporating ongoing feedback via the peers and their networks strengthened the design of Engage-NYC by uncovering novel barriers and facilitators. Lastly, we found continuous monitoring of technical aspects of online components is needed to prevent drop-offs or 'missed opportunities' for engagement.

Recommendations: Integrate a 'bottom-up' approach using CBPR and diverse stakeholders from the outset and incorporate novel technologies with wide reach to more effectively link and retain MSM and TG to care.



188 Low Adherence in Vaginal Microbicide Gel Trials? Opinions of Former Trial Participants on Improving Adherence

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Background: Poor adherence continues to be a major challenge in vaginal microbicide trials, with data showing a large discrepancy between reported and actual use among trial participants. Tens of thousands of women have participated in late-stage microbicide trials worldwide. The insights of former trial participants can be utilized to help improve gel use and adherence reporting for future microbicide trials.

Methods: This study engaged former vaginal microbicide gel trial participants in focus group discussions and participatory activities, including an opportunity to design aspects of future hypothetical microbicide trials to improve adherence and adherence reporting. Eight focus group discussion workshops (3-5 hours each) were conducted in Durban, South Africa and Mwanza, Tanzania with former VOICE (1% tenofovir gel) and MDP 301 (PRO 2000 gel) participants. Forty-five trial participants participated (Durban n = 19; Mwanza n = 26).

Results: Former participants emphasized that male partners have an important role in influencing gel adherence, thus trials should integrate male involvement from the beginning. Improving education about how trials compare results from randomized groups using simple diagrams and group discussions could help improve adherence because participants reported they didn't necessarily understand why adherence was critical. When asked to design aspects of future hypothetical microbicide trials, participants made the following suggestions: 1. microbicide gel volume should be reduced and gels have a warming sensation; 2. all applicators should be returned to sites, dye-stain tests used to identify used applicators, and adherence results given to participants in real time to improve adherence during trials; 3. appropriate participants should be chosen as peer educators to share experiences and dispel rumours; 4. trial staff should treat participants with warmth, honest respect, and as equals.

Conclusion: Adherence and adherence reporting may be improved if researchers have a deeper understanding of the circumstances of women in trial communities and take account of these realities in future trial designs.

189 Impact of Option B on Mother-to-Child HIV Transmission in Rwanda: An Interrupted Time Series Analysis

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Background: In 2010, the World Health Organization (WHO) revised guidelines for prevention of mother-to-child transmission (PMTCT) of (Human Immunodeficiency Virus) HIV programs, but little is known about the effectiveness of these protocols in reducing national transmission rates. Rwanda adopted "Option B" in November 2010, consisting of antiretroviral therapy (ART) for pregnant women from 14 weeks gestation to cessation of the 18-month breastfeeding period for those not already receiving ART for their own health and 6 weeks of nevirapine for infant prophylaxis. We evaluate the impact of this policy on mother-to-child HIV transmission rates in Rwanda.

Methodology: We employed a quasi-experimental design and interrupted time series analysis to assess the impact of the guideline change. Our study population included HIV-exposed children attending 356/489 (72%) of facilities that reported on PMTCT outcomes to Rwanda's national HIV tracking system (TRACNET) from August 2010 to July 2014. We analyzed the rate of positive HIV tests at 18 months per 100 children and compared the level and trend of HIV transmission rates before and after May 2012 (18 months after the PMTCT guideline change).

Results: The trend of mother-to-child HIV transmission at 18 months of age increased throughout the period prior to May 2012 (baseline trend 0.04/100, 95% CI: [0.00012, 0.08]). Following the change in PMTCT guidelines, we found a reduction in both the level (-0.94/100, 95% CI: [-1.64, -0.25]) and the trend (-0.059/100, 95% CI: [-0.112, -0.007]) in the 18-month transmission rate.

Conclusion: Implementation of WHO PMTCT guideline Option B was associated with a decrease in 18-month transmission rates from HIV infected mother to infants in Rwanda. The scale-up of PMTCT and ART care and treatment programs as well as other strategies, including improved adherence and earlier initiation of ART, could also have contributed to the decline in transmission.



193 The Effect of Antidepressant Treatment on HIV and Depression Outcomes: Results From the Slam Dunc Randomized Controlled Trial

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Background: Depression is a major barrier to HIV care and outcomes. Prior studies offer conflicting evidence on whether depression treatment can improve HIV-related outcomes.

Methodology: The 4-site SLAM DUNC randomized controlled trial tested whether evidence-based antidepressant management would improve antiretroviral adherence among HIV-infected US adults with major depressive disorder. In the Measurement-Based Care (MBC) intervention arm, depression care managers made standardized evidence-based treatment recommendations to treating HIV primary-care clinicians. In usual care, clinicians could follow any depression treatment approach but received no recommendations. Antiretroviral adherence was measured monthly for 12 months via telephone-based pill counts. Depressive severity was measured quarterly with the Hamilton Rating Scale for Depression (HRSD).

Results: From 2010-2013, 149 participants were randomized to intervention and 155 to usual care. A majority of participants were male (71%), Black non-Hispanic (62%), unemployed (73%), and virally suppressed (68%) and had high baseline self-reported antiretroviral adherence (mean 87%) and HRSD depressive severity (mean 20). At 6 months, HRSD depressive severity was lower among intervention participants relative to usual care (mean difference -3.7 [95% CI: -5.6, -1.7]), probability of depression remission was higher (risk difference [RD] 13% [1%, 25%]), and suicidal ideation was lower (RD -18% [-30%, -6%]). By 12 months the arms had comparable mental health outcomes. Intervention arm participants experienced an average of 29 (95% CI: 1, 57) more depression-free days over 12 months. No differences between arms in antiretroviral adherence, virologic suppression, HIV symptoms, or appointment adherence were apparent at 6 or 12 months.

Conclusion: In the largest trial of its kind among HIV-infected adults, MBC achieved clinically significant depression improvements at 6 months and increased depression-free days but did not impact HIV outcomes, possibly because of high baseline adherence and viral suppression. MBC may be an effective, resource-efficient approach to addressing HIV patients' mental health needs.

199 Age Matters: Inconsistent HIV Care Among Adolescents and Young Adults in Nigeria

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Background: Youth with chronic medical conditions are at risk for poor adherence to care and clinical outcomes. Our objectives were to compare the risk of inconsistent HIV care in adolescents and young adults to older adults initiated on ART in Nigeria, and to determine virologic outcomes of those who remained in care.

Methodology: We conducted a retrospective cohort study of adolescents, young adults, and adults (14-20, 21-29, and >29 years) who initiated ART between 1/2009 and 12/2011 at a university clinic. Patients had monthly ART pick-up and 3- monthly clinical visits. We defined patients with *consistent* care if the time between any two consecutive visits was ≤ 3 months; and *inconsistent* care if the time between any two consecutive visits was > 3 months. We used multivariate logistic regression to assess the odds of inconsistent care and ANOVA to compare rates of viremia (HIV RNA $> 1,000$ copies/mL) at 12 months among those who remained in care.

Results: The cohort included 2,494 patients. Median baseline CD4 was 251/uL [IQR: 153-408] in adolescents (n = 80), 241/uL [IQR: 127-378] in young adults (n = 893) and 189/uL [IQR: 86-322] in adults (n = 1,523), (p < 0.001). After the first year on ART, 71% of adolescents, 62% of YA, and 57% of adults had inconsistent care (p = 0.003). In analysis adjusting for sex and baseline CD4, adolescents (OR 1.90, p = 0.001) and YA (OR 1.41, p = 0.001) had a greater risk of inconsistent care than adults. Among those with consistent care, viremia was more common in adolescents (48%) and young adults (32%) than adults (26%), p = 0.003.

Conclusions: In a Nigerian cohort, adolescents and young adults were at increased risk for inconsistent HIV care with clinic absences > 3 months. Even among those with consistent care, 50% of the youngest patients had substantial viremia at 1 year. Youth-friendly models of HIV care are needed to optimize health during this vulnerable period.



201 Client Perspectives on the HRSA/ SPNS Systems Linkage and Access to Care Initiative Interventions: “People are Better Off Having Services Like That Available”

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Background: In 2011, the Health Resources and Services Administration Special Projects of National Significance launched the Systems Linkage and Access to Care Initiative. Six states received funding to implement interventions to improve HIV care continuum outcomes. Most of the chosen interventions focused on linking, re-engaging and retaining patients through patient navigator-type services. We conducted a qualitative study to understand how these services met clients’ needs.

Methodology: From January-December 2014, we conducted 75 in-depth interviews with clients enrolled in interventions that used professionals or peers to help navigate HIV-related healthcare systems (mean age = 40; 68% men, 63% African American). All interviews were audio-recorded, transcribed verbatim and analyzed following the framework analysis approach.

Results: Intervention impact differed by clients’ HIV history and desire for personalized attention. Newly diagnosed clients had consistent, well-defined needs. Navigators helped them cope with new diagnoses and set expectations for HIV care. By contrast, there were less well-defined needs among clients with established diagnoses who had previously been out of care. One subset preferred frequent contact. These clients responded best when navigators delivered services with compassion, trust, and reliability. A second subset desired only infrequent contact. These clients were pre-disposed to engage in care, needed only limited help to navigate the healthcare system, and primarily benefited from reminders or brief interactions that motivated them to return to care. A final subset did not respond well to the interventions. These clients were often self-managing or did not perceive a need for assistance.

Conclusions: Overall, the interventions helped to link and re-engage patients in care. This was particularly true for people newly diagnosed with HIV. For previously “out of care” patients, the benefits of navigation ranged from the provision of simple reminders to the development of highly trusted relationships that helped guide clients through the health system.

204 The Impact of Disclosure on Adherence in HIV-Infected Adolescents in Botswana: A Longitudinal Study

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Background: Qualitative and cross sectional quantitative studies suggest disclosure of status to HIV positive adolescents improves HIV medication adherence. However, longitudinal studies are needed to answer the question.

Methodology: Over 24 months, adherence was monitored in 300 adolescents (age 10-19) in Botswana using Medication Event Monitoring System (MEMS) caps. Status disclosure was assessed at quarterly study visits and the disclosure time was defined as the quarter during which disclosure occurred. Using segmented generalized linear mixed effects models, we explored whether adherence changed during the disclosure interval and whether adherence changed during the pre- and post-disclosure periods. Since adherence worsens with age during adolescence, models were adjusted for age.

Results: At baseline, the disclosure prevalence was 64.7% (median age 14.6 years (IQR 13.2-16.6)). 74 (24.7%) adolescents had incident disclosure (median age 12.2 years (IQR 11.6-12.9), 50% female). Pre-disclosure, median adherence declined by 0.4% per quarter. A statistically significant, but clinically minimal, increase in adherence occurred during the disclosure time from 97.3% (IQR 82.4 – 99.5) to 97.9% (IQR 88.5-99.5), $p = 0.04$ which remained significant after adjusting for age. Post-disclosure, median adherence declined by 1.2% per quarter.

Conclusions: Disclosure of HIV status to young adolescents resulted in a very small improvement in adherence which was declining prior to disclosure. Long term after disclosure, the rates of decline increased. This suggests that disclosure, as performed in this setting, does not have the hypothesized desirable impact on adherence.



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

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Background: Challenges to antiretroviral therapy (ART) acquisition and uninterrupted receipt are well documented at the individual level and include transportation issues, rural residence, distance, and stigma. While client-level interventions exist to address individual barriers to ART adherence, few programs aim to address these challenges in ART persistence at the system level. With patient level adherence support and refill automation with home-delivered ART, mailed medications with enhanced pharmacy services programming may alleviate medication access barriers at the individual and systems level. Accordingly, we aimed to assess ART persistence and adherence via observed changes in viral load following enrollment in Curant Health, a Mailed Medications and Enhanced Pharmacy Services program.

Methodology: For this analysis, we included patients (N = 652) referred to the program between November 2011 and January 2015 at an academically affiliated HIV/AIDS Clinical site in Alabama. Using paired analysis, we compared viral load (VL) suppression (<200 c/mL) using laboratory values at baseline (closest value prior to enrollment) and follow-up, ranging from 6 weeks to one year after program enrollment.

Results: Mean age was 47 years, with 23% Female, 58% Black, 57% Private insurance, and 73% virally suppressed at baseline. For persons with available laboratory data at follow-up (n = 590), the proportion with a suppressed VL increased significantly, from 73% to 88% overall (p < 0.001). Of the 157 patients who were not suppressed (VL ≥ 200) at enrollment, 103 (66%) were virally suppressed at follow up.

Conclusions: Despite a high rate of baseline viral suppression, these findings indicate significantly improved virologic control following enrollment in a Mailed Medications program with Enhanced Pharmacy Services. More widespread implementation of such programs may have meaningful impact in reducing individual and community viral load with implications for individual health outcomes and HIV prevention.

206 Association Between Alcohol and Substance Use Severity and Antiretroviral Therapy (ART) Adherence Over Time in a Nationally Distributed Cohort of Patients in Care Across the United States

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Background: An association between substance use and poor ART adherence is known; however, many studies were small, cross-sectional, and did not examine drug use severity or polysubstance use. We hypothesized that longitudinal associations of substance use with adherence would vary by drug class and severity of use.

Methodology: CNICS patients in care from 6 sites completed tablet-based assessments including drug use (ASSIST), alcohol use (AUDIT-C) and ART adherence (30-day VAS). For each drug class (cocaine/crack, methamphetamines/crystal, illicit opioids, and marijuana), severity of use was defined by ASSIST score (0-39 points) and alcohol severity was defined by AUDIT-C score (0-12 points). A visual analogue scale measured adherence. We used mixed effects models to examine associations between baseline alcohol and substance use and longitudinal adherence adjusted for age, race/ethnicity, sex, site, baseline CD4 and viral load, and follow-up duration. Sensitivity analyses included time-updated substance use severity.

Results: There were 8,672 patients who completed 25,234 assessments. Among current users, median severity scores ranged from 7 (marijuana) to 15 (methamphetamines). Female sex, Black race, and Hispanic ethnicity were associated with lower adherence. Baseline severity of use for all drugs and alcohol use were associated with significantly poorer adherence over time (p < 0.05). However, the impact of baseline alcohol, methamphetamine, and cocaine/crack was approximately double (0.20-0.23%/point) that of opioid and marijuana use (0.09-0.12%/point). In mixed models that included time-updated substance use, findings were similar although the impact of severity of use was greater (0.13-0.31%/point, p < 0.001).

Conclusion: Severity of substance use is associated with adherence over time and these associations differ across drug classes. This highlights the importance of examining adherence by individual drug class and the severity of their use. Given these results, harm reduction strategies focused on decreasing severity may improve ART adherence even without complete cessation.



210 Feasibility and Acceptability of Hair- and Dried Blood Spot-Derived ARV Biomarkers as Objective Measures of Treatment Adherence in South Africa

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Background: Drug metabolite levels in dried blood spot (DBS) and hair may provide convenient, objective measures of ART adherence for busy HIV clinics. We examined the feasibility and acceptability of monthly DBS and hair samples among 30 HIV-positive individuals in a South African health clinic who had recently commenced once daily ART containing tenofovir and emtricitabine.

Methodology: A nurse collected hair and finger-stick (FS) DBS samples at five monthly clinic visits. Participants reported on their experiences and concerns including pain, potential to collect samples themselves, collection venues, and fate of samples.

Results: Twenty-eight participants completed 5 visits; 2 completed 4. Of 148 collections, 47% had no reported pain from FS; of those with reported pain, 94% indicated "a little" to "some" (on a 5-point scale). At first visit, 10% of participants reported willingness to do FS themselves at home compared to 53% at last visit. At first visit, 10% of participants reported feeling at least "somewhat confident" (on a 5-point scale) to do FS themselves compared to 47% at last visit. At first visit, 87% of participants reported willingness to have FS and 43% to give hair at regular clinic visits compared to 63% and 3% respectively at last visit. Throughout all visits, ≥90% of participants reported willingness to have a health worker come to their home to do FS. No patients at any visit reported concerns about long-term storage and future use of their hair or blood samples.

Conclusions: DBS and hair sample collection for ART adherence measurement are acceptable to most patients and may be feasible in resource-limited settings. Repeated exposure to procedures increased willingness and confidence for once-off but not regular DBS sample collection by the patient her/himself. Further studies might examine the setting of sampling, and potential barriers to more widespread use in clinical practice.

214 Multi-Level Barriers to Antiretroviral Treatment (ART) Adherence Among Hijra-/Thirunangai-Identified Trans Women in India: A Qualitative Investigation

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Background: ART adherence is critical for prolonging life and preventing HIV transmission (treatment as prevention). This qualitative study examined barriers to ART adherence among HIV-positive trans women, a population with a high HIV prevalence (8.8-16.4%).

Methodology: Between December 2014 and January 2015, we conducted 22 in-depth interviews (IDIs) in Chennai and New Delhi, India: 16 IDIs with HIV-positive trans women (thirunangai = 50%; hijras or 'transgender' = 50%); and six IDIs with key-informants (service providers = 4; community leaders = 2). Data were analyzed using the framework approach.

Results: Trans participants were of low socioeconomic status (sex work = 44%; begging = 25%). We identified interlinked barriers to ART adherence at social-structural, healthcare system, and individual levels. A key barrier was the fear of rejection and loss of social, emotional, and financial support among HIV-positive trans women if their status was revealed to other trans women peers, partners, or family members. This non-disclosure of HIV status becomes taxing for study participants – e.g., taking extra precautions to hide antiretrovirals. Other barriers were fear of serious and visible side-effects such as characteristic fat depositions on stomach and back of neck from long-term ART adherence and fear of harmful interactions between alcohol, female hormonal treatment, and ART. Negative experiences in government ART centers – procedural delays, covert discrimination, inadequate counseling time, lack of privacy/confidentiality, and ART stock-outs (necessitating frequent visits) – demotivated trans participants from collecting their ART medication regularly.

Conclusions: Promoting ART adherence among trans women requires multi-faceted interventions: promoting acceptance of HIV-positive trans women among trans communities, assisting trans women in adopting tailored adherence strategies, providing a comprehensive ART education, improving sensitivity training among providers, and increasing access to mental health support services.



216 Feasibility of Using HIV Care Continuum Outcomes to Identify Geographic Areas for HIV Testing

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Background: In high HIV prevalence areas such as Washington, DC, new HIV transmissions may be attributed to persons with poor HIV care continuum outcomes. We sought to determine if targeted HIV testing in geographic areas, defined by care continuum parameters, would be a feasible strategy to identify HIV-positive persons needing linkage or re-engagement in care.

Methodology: We used routinely reported HIV surveillance and laboratory data from Washington, DC and identified 55 census tracts (CTs) with HIV prevalence $\geq 1\%$. We developed a statistical algorithm to identify CTs that were either above (higher risk areas, HRAs) or below (lower risk areas, LRAs) the median for three indicators: monitored viral load, and proportion of persons out of care (OOC) and never in care. Twenty CTs were identified; twelve HRAs and eight LRAs. Community-based HIV rapid testing was performed in each area and participant data among those tested in each area compared.

Results: A total of 1,471 persons (870 in HRAs; 601 in LRAs) were tested. Overall, 28 persons (1.9%) tested HIV+; 2.1% in HRA vs. 1.7% in LRAs ($p = 0.57$). Testing HIV seropositivity ranged from 0-9.7% in HRAs and 0-2.8% in LRAs. Among HIV-positive participants, 54% were new diagnoses ($n = 9$) or OOC ($n = 6$); 46% ($n = 13$) were in care. All HIV-positive participants were black, 64% were male, and median age was 51 years. A higher proportion of males (63.9% vs. 56.9%, $p = 0.007$) and fewer blacks (91.0% vs. 94.6%, $p = 0.008$) were tested in LRAs versus HRAs; no differences were observed in risk behaviors between HRAs and LRAs.

Conclusions: Although no significant difference in HIV seropositivity was observed in the two testing areas, identifying targeted HIV testing locations informed by care continuum outcomes was feasible and enabled identification of newly diagnosed infections and OOC HIV-positive persons. Comparisons to other testing schemes are needed to assess the efficiency of this testing paradigm.

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

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Background: Research suggests that release from incarceration is a critical intersection for re-engagement in HIV medical care for HIV-positive individuals. This study aims to assess HIV care outcomes among individuals enrolled in a transitional care coordination program intended to provide access to HIV medical care and medications following release.

Methodology: Participants ($N = 168$) received care coordination services post-release between January 1, 2012 and December 31, 2014. Eighty-three persons received care coordination services only, and 85 received care coordination and support services through the Comprehensive HIV/AIDS Resources and Linkages for Inmates (CHARLI) program. Re-engagement in HIV medical care was analyzed based on evidence of a CD4 or viral load lab draw, HIV medical care visit, or antiretroviral prescription within 90 days following release; continuous engagement (retention) was based on two or more of these markers for care within the 12-month post-release time period that were at least 60 days apart, and virologic suppression was measured as the last viral load within the 12-month post-release time period that was <200 copies/mL.

Results: Among 168 HIV-infected individuals, 76.8% were re-engaged in HIV medical care within 90 days post-release. Seventy-seven percent were retained in care 12-months post-release, and 60.7% of participants were virologically suppressed. Among the 83 participants enrolled in care coordination only, 67.5% were retained in HIV care and 54.2% were virologically suppressed; these outcomes increased for the 85 participants receiving both care coordination and CHARLI, to 87.1% for retention in care and 67.1% for virologic suppression.

Conclusions: Findings suggest that care coordination services contribute to more successful HIV care engagement among individuals released from incarceration. Care coordination supplemented with local support services targeting other immediate needs, such as housing and financial assistance, offer a more holistic approach to improving health outcomes along the HIV care continuum for formerly incarcerated individuals.



241 Utility of Dried Blood Spot-Derived ARV Biomarkers as an Objective Measure of Treatment Adherence in South Africa

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Background: Existing ARV adherence measures have disadvantages including subjectivity and patient/provider burden; none measures drug ingestion. We explored using assays of tenofovir-diphosphate (TFV-DP) in DBS as a convenient, objective measure of ARV adherence reflecting drug ingestion.

Methodology: In 5 monthly visits, 29 HIV-positive South African adults who, at the time of enrollment, had initiated ARVs containing TFV and were being monitored by Wisepill gave DBS samples and were interviewed on self-reported adherence. TFV-DP was quantified by LC-MS/MS. We examined Pearson correlations between TFV-DP levels and adherence by WisePill in the 4 weeks prior to sampling.

Results: Participants were 30 years old ($SD \pm 5.25$) and 90% women. Adherence over the past 4 weeks measured by Wisepill averaged 74% ($SD \pm 34\%$). Mean TFV-DP level was 917 fmol/punch (range, 1-2441; $SD \pm 424$). We restricted subsequent analyses to those who had been on their ARV regimen for at least 10 weeks at the time of sampling (88 data points). There was only a weak correlation of TFV-DP with WP adherence ($r = .361$, $p = .001$), which strengthened ($r = .556$, $p < .001$) if we removed from the analyses those who had not opened the WP device, but had detectable TFV-DP levels. With one exception, participants self-reported excellent or very good adherence with no missed doses in the past month.

Conclusions: DBS levels of TFV-DP demonstrated only a weak, but significant, association with Wisepill, and self-reported adherence was not correlated with either measure. Our findings also reveal instances in which Wisepill may not reflect dose ingestion, possibly explaining the weak correlation with DBS TFV-DP. We report elsewhere that DBS procedures were highly acceptable to patients in South Africa. Results demonstrate the potential of using DBS-derived biomarkers as an objective "real-world" ARV adherence measure and an alternative to electronic monitoring in low-resource settings.

244 "I Am Not a Man": Trans-Specific Barriers and Facilitators to PrEP Acceptability Among Transgender Women

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Background: Transgender women ("transwomen") are at disproportionate risk of acquiring HIV. Pre-exposure prophylaxis (PrEP) represents the first efficacious biomedical HIV prevention approach. However, a subanalysis of the iPrEx data revealed zero efficacy among transwomen in the trial. Furthermore, transwomen are excluded or underrepresented in PrEP research, often aggregated with MSM without consideration for their unique positions within sociocultural contexts. This study examined culturally specific facilitators and barriers to PrEP acceptability among urban transwomen at risk for HIV.

Methodology: We conducted 3 focus groups and 9 individual interviews with transwomen (total $N = 30$) in San Francisco focused on their knowledge of, interest in, and concerns about PrEP for HIV prevention. Transcripts were analyzed for common themes; a team of researchers applied analytic codes using Atlas.ti.

Results: Due to negative experiences with healthcare providers and healthcare settings, ability to obtain PrEP from a trans-friendly provider (particularly the same trusted provider that prescribes their hormones) was cited as essential to PrEP uptake and adherence. While knowledge of PrEP was low, interest was relatively high. Participants noted that use of PrEP could address several aspects of transwomen's lives that increase their HIV risk, including sex work and low power to negotiate safer sex. Barriers to PrEP use included concerns about interactions with hormones, managing multiple medications, potential side effects, and avoidance of medical settings.

Conclusions: Findings underscore an urgent need to disaggregate transwomen from MSM in HIV prevention strategies, emphasizing several trans-specific facilitators and concerns to inform dissemination of PrEP among urban transwomen. Ongoing failure to consider positions of transwomen's bodies and sexualities within fraught sociocultural contexts, including medical settings, has limited the effectiveness of HIV prevention efforts to mitigate disparate risk among this highly vulnerable and unique group.



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

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Background: Recent reports from individual HIV primary care clinics in the United States suggest high rates of viral suppression, possibly higher than seen previously. It is important to confirm whether this is generalizable for clinics across the United States. If confirmed, we can examine factors potentially associated with decreases in viral load (VL), such as improved adherence, changing socio-demographics of antiretroviral therapy (ART) initiates, and modified guidelines for treatment initiation.

Methodology: Data derive from the 29,467 participants in the CFAR Network of Integrated Clinical Systems (CNICS) cohort with viral load values between 1997 and 2014. Descriptive statistics examined the percentage of undetectable VL tests (<400 copies/mL) overall and by individual clinic over time.

Results: The number of VL tests analyzed per year ranged from 9,180 (in 1997) to 39,540 (in 2010). The percentage of undetectable VL tests increased from 1997 (30%) to 2000 (47%). Over the next two years, the percentage of undetectable VL tests held steady with 47% undetectable in 2001 and 48% undetectable in 2002. From 2003 on, there was an increase of undetectable VL of ~3% per year, culminating in 87% in 2014. All of the individual sites showed a similar increasing percentage trend over time with site-to-site variability smaller than the overall change in undetectable VL over this time period. Further analyses will focus on identifying adherence and socio-demographic changes associated with VL levels over time (with results available for presentation at the conference).

Conclusions: Findings of diminishing “clinic VL” in the United States bode well for HIV prevention efforts. Moreover, they should catalyze efforts to enhance linkage to and engagement in care. Future work might identify groups most at risk for poor virologic outcomes, who would most benefit from the many empirically supported adherence-promotion strategies now available.

269 Providing Technical Assistance to Health Departments on the use of HIV Surveillance Data to Improve Health and Prevention

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Introduction: According to a recent US study, persons living with HIV who are retained in care and are virally suppressed are 94% less likely to transmit HIV compared to persons unaware of their infection. Thus, linkage to and re-engagement in HIV care are critical steps to attain along the continuum of care. Using HIV surveillance data to identify persons not in care is a promising tool health departments can use to facilitate HIV care.

Description: In 2014, the Centers for Disease Control and Prevention launched a toolkit – *Data to Care (DtC): A Public Health Strategy Using HIV Surveillance Data to Support the HIV Care Continuum*. In conjunction with the toolkit launch, seven health departments received six to nine months of intensive technical assistance (TA) on using HIV surveillance data to identify persons living with HIV not in care who need to be linked or re-engaged in care. Mandatory confidential name-based reporting of all CD4 T-lymphocyte and HIV viral load tests by laboratories to health departments’ HIV surveillance was required to be eligible to receive TA.

Lessons Learned: We learned there is no one size fits all DtC program. Jurisdictions were at different stages in strategy design and implementation. Our TA approach varied greatly among each health department. We had to consider organizational factors, jurisdiction laws/policies around data confidentiality and data sharing, morbidity, and history of the surveillance program. Participation in this project facilitated, in most cases for the first time, the coming together of staff across HIV surveillance, prevention and care programs.

Recommendations: While providing technical assistance to health departments is critical to supporting and guiding DtC activities, TA needs to be flexible and should address all Data to Care activities from community engagement to data sharing. Additionally, TA should facilitate collaboration among surveillance, prevention and care programs, which is essential to DtC success.



274 Treatment Refusal in South Africa in an Era of Expanded Antiretroviral Therapy Availability – A Prospective Multi-Site Cohort Study

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Background: Global HIV treatment initiatives have focused on increasing access to antiretroviral therapy (ART), with the goal of creating an "AIDS-free generation." There is growing evidence, however, that treatment availability alone is insufficient to stop the spread of the disease, particularly in countries where HIV is hyperendemic, such as South Africa. Our goal was to understand ART-refusal among adults presenting for voluntary counseling and testing (VCT) at two urban testing centers in South Africa.

Methodology: We prospectively surveyed a total of 300 HIV-positive, ART-eligible adults who presented for VCT between July, 2014-March, 2105 at two townships in South Africa (Soweto and Gugulethu). We assessed rates of attrition in the pre-ART period, and used a detailed structured questionnaire to assess psycho-social factors associated with ART refusal.

Results: We enrolled 200 participants at each site. The median age was 35 years old, of whom 63% were women. Fifty percent were unemployed, and 55% had not completed high school. Median CD4 count was 238 cells/mm³ (202.5 in Soweto vs. 265.5 in Gugulethu). Of all ART-eligible adults who presented for VCT across sites, 32.9% did not return for their CD4+ results within six weeks of testing (43.3% in Soweto, 22.5% in Gugulethu). An additional 7.0% who returned refused treatment upon learning their ART eligibility (10.0% "initial refusers" in Soweto and 4.0% in Gugulethu). Univariate analyses show that among eligible adults, initial refusal is associated with use of denial as a coping strategy (OR = 1.19, 95%CI: 0.99-1.44, $p = 0.06$), fear of stigma (OR = 1.28, 95%CI: 1.04-1.58, $p = 0.02$), and fatalism (OR = 1.16, 95%CI: 1.02-1.32, $p = 0.02$).

Conclusions: Our data suggest that HIV-positive adults are presenting for VCT with CD4 counts well below the threshold for initiation. In addition, up to 40% of ART-eligible individuals are lost after testing, or refuse to initiate ART. Future interventions should be designed to optimize coping and decrease HIV-associated stigma.

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276 Predictors of Adherence in Youth With HIV Enrolled in a Prospective Longitudinal Follow-Up Study of a Randomized Advance Care Planning Intervention

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Background: Antiretroviral adherence was assessed within a prospective, longitudinal, randomized controlled study of Family-Centered (FACE) advance care planning intervention in youth living with HIV/AIDS (YLWHA).

Methodology: YLWHA age 14 through 20 years enrolled as a dyad with a parent/guardian (if youth >18 years at one of five urban hospital-based clinics for screening, baseline, 3 intervention/control sessions, and 4 follow-up visits. Youth with severe depression were excluded. Youth baseline depression, anxiety, emotional functioning, and decisional conflict examined as predictors of adherence (visual analogue scale) are presented here. HIV health-status data were abstracted from medical records. Analyses included linear and logistic regression.

Results: N = 94 YLWHA on antiretroviral medications included in analyses were mean age 17.7 years, 54% male, 95% black, 8% Hispanic, 72% heterosexual, 26% gay/bisexual, 77% perinatally infected, 21% behaviourally infected, 39% history of opportunistic infection, 29% CDC Class C. Mean adherence was 76.1% (SD = 29); 51% self-reported past month adherence $\geq 90\%$; 62% had undetectable viral load (UVL; $>90\%$ adherence (OR = 0.34, CI₉₅[0.12,0.95], $p = .040$). Youth with UVL had higher odds of $\geq 90\%$ adherence (OR = 9.5, CI₉₅[3.3,27.3], $p < 0.001$).

Conclusion: Contrary to expectation, emotional functioning, including depression, did not relate to adherence, likely due to restricted range in depression scores. The strongest predictor of adherence was UVL. Older youth and male YLWHA had greater difficulties with adherence. Gay/bisexual youth demonstrated better adherence than heterosexual youth, for reasons unknown that should be further examined. Suboptimal antiretroviral adherence, and too few youth with UVL, remains problematic for YLWHA and potential partners, demanding further investigation.



280 The HIV Care Continuum for Housing Program Clients and Persons Living With HIV/AIDS Overall, New York City, 2013

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Background: The New York City (NYC) health department administers over \$50 million of federal Housing Opportunities for Persons with AIDS (HOPWA) funding to provide several models of housing and support services and promote HIV care for low-income persons living with HIV/AIDS (PLWHA). The HIV care continuum can be used to monitor engagement in care for housing program clients.

Methodology: Data on 2013 NYC HOPWA enrollees were matched to the NYC HIV surveillance registry to obtain HIV diagnosis dates, and dates and results of HIV-related laboratory tests (CD4 count and HIV viral load [VL]). HIV-related laboratory tests were proxies for care linkage (any test since 2001, at least 8 days after date of HIV diagnosis) and engagement (any test in 2013), and also indicated antiretroviral therapy (ART) initiation (viral suppression ≤ 200 copies/mL) at any point since 2001 and viral suppression in 2013 (per last VL). The health department created a care continuum from diagnosis to suppression for NYC HOPWA clients and 2013 NYC PLWHA overall, and calculated the proportion of persons engaged in care who were suppressed.

Results: Of the 35,168 HOPWA enrollees, 100% had been linked to care, 96% were engaged in care, 91% appeared to have started ART, and 71% were suppressed; among HOPWA enrollees engaged in care, 74% were suppressed. Of the 117,618 PLWHA overall, 86% had been linked to care, 63% were engaged in care, 60% appeared to have started ART, and 50% were suppressed; among PLWHA engaged in care, 79% were suppressed.

Conclusions: Rates of viral suppression were much higher among HOPWA clients than PLWHA overall; rates of viral suppression between the two groups were more similar when limited to the subsets of persons engaged in care. Results warrant further exploration of the impact of housing service models on HIV care and viral suppression.

281 Treatment to Improve Adherence and Depression Among People Living With HIV in Zimbabwe

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Introduction: Evidence from the US shows that cognitive-behavioral interventions improve adherence to antiretroviral therapy (ART). They can improve both adherence and mental health for people on ART with co-morbid mental disorders. However, there is a lack of research on adapting such interventions for use in Sub-Saharan Africa, where the prevalence of HIV is highest and where mental disorders such as depression are common.

Description: We used a systematic approach to adapting the Life-Steps cognitive behavioral intervention (CBI) for adherence in a major ART clinic in Harare, Zimbabwe, including qualitative methods and expert consultation. We trained local adherence counselors to deliver the CBI. After 5 days training and supervised practice with 10 clients each their mean fidelity on a therapist rating guide was 17/18. We then tested the CBI in 15 participants (9 female) who had depression and also clinical indicators of poor adherence. Mean age was 39 years. We measured adherence electronically using WisePill, and depression using the 9-item Patient Health Questionnaire, with a 3-month follow-up.

Lessons Learned: The culturally-adapted CBI for adherence is called "Nzira Itsva" which translates as 'New Direction'. Compared to the original Life-Steps the main differences are language, more emphasis on visual aids for education and on problem-solving therapy for depression, and the addition of culturally competent probes to elicit possible solutions for adherence barriers and for depression problems. Adherence, defined as $\geq 90\%$ in the past 2 weeks, had improved from 47% to 100% at follow-up. Mean PHQ-9 pre-CBI was 13.5 (SD 2.6), dropping to 3.4 (SD 3.3).

Recommendations: A culturally-adapted evidence-based problem-solving approach to improve ART adherence and depression is feasible and acceptable for adherence counselors to deliver in a low-resource setting in Sub-Saharan Africa. Robust evaluation is needed to evaluate the efficacy of this intervention in public ART facilities in Zimbabwe.



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

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Introduction: The Los Angeles County (LAC) Department of Public Health implemented the Medical Care Coordination (MCC) program in 2012 to improve the LAC HIV care continuum and incorporate principles of the patient centered medical home into HIV care delivery. The MCC program is funded at Ryan White HIV clinics in that serve predominantly low-income, minority patient populations. Outcome data is presented for the first year of the MCC program.

Description: The MCC program uses multidisciplinary teams to assess medical and psychosocial need and deliver targeted brief interventions to improve health outcomes and reduce risk behaviors. Patients at risk for poor health outcomes were targeted for enrollment. Baseline assessment, laboratory and MCC service data were collected. The median number of MCC hours is reported with interquartile range (IQR). Medical visits were estimated using HIV laboratory test dates. A quasi-experimental pre-test post-test design was used to evaluate differences in 12-month outcomes. The main outcomes were VL 90 days apart in past 12 months). Differences in the main outcomes at 12 months were compared using McNemar's test for paired data.

Results: Between 1/2013-12/2013, 1,204 patients were enrolled MCC at 25 HIV clinics (49% Latino, 26% Black; 85% male; 76% \leq federal poverty level; 51% \geq 40 years; 23% STD diagnosis \leq 6 months; 10% incarcerated $<$ 6 months; and 73% on ART). At 12 months, patients had received 17.3 median hours of MCC services (range: 0-147.5). From 12m pre-MCC to 12m post-MCC, the proportion of patients with VL $<$ 200 copies/mL increased from 52% to 84% ($p < 0.0001$) and those retained in care increased from 45% to 72% ($p < 0.0001$).

Conclusions: Promising results from the first year of MCC suggest that has the potential to improve retention in HIV care and viral suppression among persons living with HIV and to positively impact engagement in these key HIV care continuum components in LAC.

287 Difference in Self-Reported Adherence on Different Recall Intervals Over Time Between Males and Females in MACH14 Study

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Background: A variety of recall time frames have been used in the literature to evaluate self-reported adherence. Three-day recall is commonly used to capture the clinical important variation and accuracy of the adherence measure. However little is known how males and females respond differently on different recall intervals. Item response theory (IRT) uses probability based model to describe how people respond differently to questions or items.

Methodology: We use the newly developed two-tier item factor analysis in IRT modeling to estimate the latent adherence at the baseline and exit interview in the MACH14 study, a Multi-site Adherence Collaboration in HIV among 14 sites in United States. Three different (one-, two- and three-day) recall intervals are being used to assess the adherence level over study period. The analysis also takes the cluster effect among sites into consideration.

Results: There are 1,108 men and 484 women in the sample who have all three different recall intervals at baseline. The overall estimation in the longitudinal two-tier item factor analysis indicates that two-day recall is more difficult than one- or three-day recall, and the variance of the parameter "difficulty" is much larger for two-day recall than one- or three-day recall. The model stratified by gender indicates that there is some variation for the three-day recall among males and one- or two-days recall among females.

Conclusion: The response pattern is different between male and female on different recall periods. The one-day might be more appropriate for males and three-day recall for females on evaluating latent adherence through three different recall intervals. The variation of self-reported adherence between males and females is worth further investigation. The methods used in this study to compare self-reported adherence can be applied to create harmonized adherence measures over time.



289 Multilevel Factors Contributing to Women's Entry, Engagement, and Adherence to HIV Treatment and Care

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Background: Southern women living with HIV face unique challenges to reach HIV continuum of care (CC) outcomes. This study explored the obstacles to women's HIV care to improve understanding of multilevel factors affecting CC successes and challenges.

Methods: We conducted interviews with 34 women who experienced challenges at different CC milestones prior to enrollment in the Atlanta Women's Interagency HIV Study (WIHS). We performed constant comparative analyses linking sociobehavioral/biomedical data that resulted in a 3-group behavioral typology of treatment and care engagement. Illustrative quotes present unique themes.

Results: Preliminary analyses with a subsample (N = 21) included a majority Black/African American/non-Hispanic (95%) women who were ≥46 years (75%). "Care-Engaged" women (N = 10) described positive healthcare experience, prompt linkage to care, strong social and healthcare provider relationships, and high CD4 count (≥800 cells/mm³) and suppressed viral load value post-diagnosis as care facilitators. "Care-Inconsistent" women (N = 7) described challenges related to housing, unsupportive healthcare institutions, and perceived HIV stigma as barriers to care. Supportive healthcare providers and institutions, social and emotional support, and viral suppression within 6 months of treatment were cited as care facilitators, with healthcare provider insistence as a frequently cited intervention for entering treatment. "Care-Detached" women (N = 4) described unstable housing, unsupportive healthcare institutions, and drug and alcohol abuse as challenges to care. Supportive social groups and healthcare providers, community-based programs, support groups and mental health services, and knowledge of HIV and HIV treatment were cited as care facilitators.

Conclusions: This study identified unique factors that influence women's HIV treatment and care; however, each group still faces multilevel factors that threaten HIV CC. Findings enhance the ability of providers, case managers, and community-based services to develop targeted interventions to more effectively address unique factors contributing to women's HIV continuum of care.



4 Telephone Health Service to Improve the Quality of Life of the People Living With AIDS in Eastern Nepal

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Background: Quality of Life (QOL) is an important component in the evaluation of the well-being of People Living with AIDS (PLWA); especially with the appreciable rise in longevity of PLWA. Moreover, limited studies have been conducted in Nepal on how PLWA perceive their life with the WHO Quality of Life Brief Scale instruments. This study assessed the effectiveness of education intervention programme in improving the QOL of PLWA on ART attaining the anti-retroviral clinic at B. P. Koirala Institute of Health Sciences (BPKIHS), Nepal.

Methodology: A pre-experimental research design was used to conduct the study among the PLWA on ART at BPKIHS from June to August 2013 involving 60 PLWA on pre-test randomly. Using WHO QOL-Brief instrument base line QOL of the PLWA was assessed and then planned education intervention programme was conducted for three months. Telephone consultation was provided. After three months, post-test was conducted using the same instruments among the same subjects. Four focus group discussions were arranged. The collected data was analyzed using SPSS-16 Version software.

Results: The mean age of the respondents was 36.70 ± 9.92 , and majority of them (80%) were of age group of 25-50 years, Male (56.7%) and Hindu (95%). After education intervention programme there is significant change in the QOL in all the four domains i.e. Physical ($p = 0.008$), Psychological ($p = 0.019$), Social ($p = 0.046$) and Environmental ($p = 0.032$) using student t-test at 0.05 level of significance. There is significant ($p = 0.016$) difference in the mean QOL scores of pre-test and post-test.

Conclusions: Changes in QOL scores in post-test after education intervention programme in the Physical, Psychological, Social and Environmental domains may reflective of the effectiveness of planned education interventions programme. Relatively low social and environmental domain scores may suggest ineffective social support networks, because PLWA are still exposed to stigmatization and discrimination. An improvement in social support for PLWA, therefore will improve their quality of life further.

7 Off to a Positive Start: Continuous Quality Improvement (CQI) Initiatives to Facilitate Entry Into HIV Care

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Background/Purpose: The goals of the HIV New Patient Intake (NPI) process are to provide a positive, patient centered atmosphere in which to welcome new patients; to establish a working relationship between patients and health care team members; to perform a thorough assessment of new patients' health status and needs; and to begin HIV care coordination accordingly. Increased number of new referrals—both newly diagnosed and transfers from other providers—prompted a review of NPI procedures and restructuring the intake process.

Methods/Practice: Efforts to improve NPI goal achievement resulted in identifying strategies to better engage referred patients, beginning with the initial/referral phone contact, through the NPI visit, and continuing to the first appointment with the Infectious Disease physician. CQI initiatives included employing "patient navigators" rather than voice messaging systems to receive initial phone contacts and to provide basic information about the medical center and the NPI visit. An advanced practice RN performs intake history and physical exams; obtains base-line laboratory studies and mental health screening; provides "HIV 101" education; and remains available for follow up contact until completion of the initial physician visit. In addition, a "decision tree" was developed to standardize scheduling prioritization for cases involving pregnancy, mental health concerns, and transferring patients who are running short on anti-retroviral medications.

Conclusions/Implications For Practice: A reduction in missed visits from 30% to 21% has been observed and physicians report improved documentation of patient history at intake and an increase in patients' basic understanding of HIV disease and treatment. Ongoing PDSA cycles, a core component of CQI, further guide development of strategies to engage and retain HIV-infected persons in care and will be discussed as part of this presentation.



While we value all Adherence 2015 poster abstract contributions, IAPAC and the Abstract Review Committee wish to recognize the authors of the highest scored posters with the Double Palm Tree designation.



11 Barriers to Linkage to HIV Care in Ugandan Fisherfolk Communities: A Qualitative Analysis

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Background: In Ugandan Lake Victoria fisherfolk communities (which include fishermen and their families, people who support the fish trade, and sex workers), HIV prevalence is estimated to be 15-40%—much higher than in the general population (at 7.3%). One reason for the high prevalence may be the relatively low percentage of fisherfolk who are aware of their serostatus, and low use of antiretroviral treatment.

Methodology: We conducted semi-structured interviews on psychosocial, structural, and provider-related barriers to care with 26 fisherfolk (11 women, 15 men) within 1-2 months of their testing HIV-positive at clinic outreach events in Ugandan Lake Victoria lakeside and island communities in 2014. We also interviewed 10 key stakeholders, including 4 healthcare providers and 6 community members (e.g., in administrative roles in fisherfolk communities). Interviews were conducted in Luganda and were recorded, transcribed, translated, and coded using standard qualitative analysis methods.

Results: Participants cited structural barriers, including relatively few healthcare facilities, high population mobility intertwined with transport issues (e.g., inconvenient ferry schedules to clinic sites), and competing needs for work during clinic hours and outreach events. Psychosocial barriers included high stigma (leading to avoidance of clinics and outreach events for testing and treatment), low social support, fatalism, and medical mistrust. Further, we found <10% HIV prevalence at clinic testing outreach events over a 6-month period—much lower than in population surveys.

Conclusion: Linkage to care among fisherfolk is challenging, primarily due to systemic clinic barriers (e.g., relatively low or inconvenient access to healthcare), high population mobility, and stigma. Linkage to care issues may begin with the failure to attract large numbers of high-risk fisherfolk to clinic outreach testing events. New, flexible models of outreach for HIV testing and treatment delivery are needed to reach fisherfolk at highest risk.

13 Modeling Implementation of Early Infant Male Circumcision in Rwanda: Lessons Learnt

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Background: Medical male circumcision (MMC) has been proven to reduce the risk of HIV infection in men. Rwanda does not traditionally circumcise, after sensitization campaigns through community people were interested in MMC, to meet this demand adult MMC is provided since 2008, in addition Rwanda is modeling Newborn male circumcision (performed between births to 2 months) as long term strategy.

Methodology: A steering committee was established to oversee implementation and to review progress regularly. Steps in establishing the services followed the classical program cycle of assessment, planning, implementation and monitoring. Medical Staff from maternity and surgical department were trained on Mogen device use for 3 days, sites were selected, supplies were procured, and clients were sensitized and enrolled. Data and adverse events was collected routinely and reviewed for uptake improvement.

Results: A total of 85 circumcisions were performed, 6% of these consented at the ANC, 35% after delivery and 59% during routine child welfare clinic visits. The average birth weight was 3.3 kilos and age was 41 days. Majority (n/N) did not experience any adverse events (AE), five experienced AE such as bleeding and 8 had incomplete removal of the foreskin.

Lessons learned and next steps: Integration of newborn male circumcision in MNCH setting is feasible. Mogen clamp is simple to use. Selection of health care workers with surgical experience, extended and adequate training using infant penis models and supervision on the job are critical to minimize AE and to achieve better outcome of Newborn male circumcision procedures.



14 Lessons Learned From Perinatal HIV to Inform Prevention of Sexual HIV Transmission

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Introduction: Widely heralded as one of the greatest public health successes in the United States, perinatal HIV transmissions have declined 90% since 1991 and a framework to eliminate perinatal HIV has been proposed. Though sexual HIV transmission rates in certain demographics have decreased, the overall HIV transmission rate in the U.S. remains unchanged at 50,000 new infections yearly. The perinatal HIV prevention field has come a long way with hard won lessons to share.

Description: The Perinatal HIV Prevention Cascade first proposed by the Institutes of Medicine in 1998 is an integrated treatment and prevention paradigm that iterated as new research and technologies became available. This cascade guided perinatal HIV stakeholders nationally, regionally and locally to implement best practices. The successful elimination of sexual HIV transmission will most likely occur at the crossroads of treatment and prevention.

Lessons learned: Themes from perinatal HIV prevention that could apply to ending sexual HIV transmission are: the central role for HIV testing, the benefits of normative practice guidance, integration of treatment and prevention activities, embracing multiple approaches, the importance of systematic and interdisciplinary review of every infection to identify missed opportunities and corrective action, the importance of supporting champions for change wherever they appear, an appreciation for the whole person, and creating a compelling narrative around sexual goals and human connection.

Recommendations: The collective successes of perinatal HIV has much to offer to those committed to ending sexual HIV transmission. Perinatal HIV stakeholders can provide expertise on whole person, consumer focused approaches and scale up of proven interventions. Supporting champions, where ever they are found, embracing multiple approaches will allow increased opportunities to connect with consumers. To realize the end of sexual HIV transmission, a community-driven, adaptive, and integrated treatment and prevention roadmap is needed to guide individuals, providers and community organizations.

15 Reaching Women Through Their HIV-Positive Male Partners: The Pro Men Initiative

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Introduction: PRO Men (Positive Reproductive Outcomes for Men) is an initiative of BAPAC (Bay Area Perinatal AIDS Center) and based at San Francisco General Hospital's (SFGH) Ward 86 HIV Clinic. PRO Men is aimed at the approximately 500 HIV-positive men who have sex with women receiving care at Ward 86 HIV Clinic. PRO Men aims to help men determine their reproductive health intentions and to support clinicians integrating reproductive health care into the primary care setting.

Methodology: During the PRO MEN pilot year, focus groups helped to determine men's experiences and beliefs about HIV prevention and transmission, family planning and safer conception options. Additionally, thought leader interviews on safer conception, family planning, HIV transmission, adherence and disclosure were conducted. Calls to UCSF's National Perinatal HIV Hotline highlighted clinicians' questions and consultation needs. These findings informed a video script as well as patient and provider tools on contraception, safer conception options and lowering HIV sexual transmission. Monthly PRO Men support groups launched in 2013, additional videos were produced and a three-hour provider education event was held.

Results: During 2014, 44 men sought a one-on-one visit with the PRO Men nurse yielding 73 total visits. Additionally, seven men brought their HIV-negative female partner for a couple visit. Another seven women attended clinic for a one-on-one partner visit with the PRO Men nurse. A total of 13 women were referred for HIV-testing and screening for pre-exposure prophylaxis. Forty providers sought 54 consultations.

Conclusions: Supporting men living with HIV in achieving their sexual and reproductive health goals is an integrated treatment and prevention strategy. The PRO Men approach provides a unique opportunity to reach HIV-uninfected partners of HIV-positive men and an opportunity to reframe the story from one of risk reduction and permission to a story of possibility and hope.



18 Pill Aversion in HIV-Infected Pregnant Women: Theory to Practice

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Introduction: In our perinatal HIV cohort we have observed difficulty swallowing pills as a frequent and significant barrier to adherence to highly active antiretroviral therapy. We refer to this problem as “pill aversion” and are defining it as difficulty swallowing pills with no persistent medical or structural cause as well as the anxiety and physical symptoms associated with pill swallowing. We propose steps for characterizing these behaviors and testing theories and interventions. By applying cognitive behavioral theory to behavioral patterns we identify within our pregnant HIV-infected population, we seek to better understand the development and reinforcement of pill aversion behavior.

Description: Based upon this theory, our experience, and the pediatric pill aversion literature, we propose a conceptual framework for understanding the multiple causes of pill aversion and applying therapeutic interventions to a perinatal population. In a theoretical discussion we address the roles of classical conditioning and cognitive theory in the development and experience of pill aversion in an HIV-infected pregnant population.

Lessons Learned: Pill aversion is a significant barrier to medication adherence in our clinical experience. From our observations of 140 pregnant and perinatal women, 17 (12%) have shown evidence of pill aversion. We observed patterns to describe the different causes and components of pill aversion. We distinguish between classically conditioned aversions due to pregnancy symptoms and aversions developed by negative cognitions or images. We propose interventions based upon cognitive behavioral theory including counterconditioning, extinction, visualization, and cognitive restructuring.

Recommendations: Areas of future investigation include developing screening tools, further characterizing this heterogeneous problem, and assessing interventions longitudinally. Specifically, we propose that development of an assessment tool to capture the nuances of pill aversion will be critical to helping patients. Such a tool would ideally identify, classify, and manage the problem early and in a standardized manner, while allowing exploration of specific issues that underlie each person's difficulty. Finally, pill aversion affects women of all ages, men, and children in addition to the perinatal women's cohort. Future research will assess for the problem of HIV pill aversion in other populations as well as evaluate the impact of the proposed interventions.

22 Non-Persistence to Antiretroviral Therapy and Viral Suppression Among HIV-Infected Adults in the United States

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Background: Patient-initiated non-persistence to antiretroviral therapy (ART) has been found to be associated with HIV viral load and may have a greater effect on HIV viral load than non-adherence. National data on patterns of non-persistence and non-adherence among HIV patients in the United States, and their association with viral load, are lacking.

Methodology: The Medical Monitoring Project conducts clinical and behavioral surveillance among a representative sample of HIV-infected adults receiving medical care in the United States. We analyzed weighted data collected between 6/2009–5/2011 from 11,844 patients currently taking ART. Non-persistence was defined as purposely not taking ART for at least two days at any time in the past 12 months. Non-adherence was defined as missing an ART dose during the past 3 days. We categorized patients into four groups: non-persistent and non-adherent (“non-persistent/non-adherent”), non-persistent but adherent (“non-persistent/adherent”), persistent but non-adherent (“persistent/non-adherent”), and persistent and adherent (“persistent/adherent”). Chi-square tests were used to compare durable viral suppression (defined as all viral loads undetectable or <200 copies/mL during the past 12 months) and reasons for non-persistence among groups.

Results: Overall, 3.5% were non-persistent/non-adherent, 5.7% non-persistent/adherent, 10.5% persistent/non-adherent and 80.3% persistent/adherent. Rates of durable viral suppression were 35.1%, 44.8%, 53.6% and 69.0%, respectively ($p < 0.001$). Common reasons for non-persistence were “got tired of taking medications or needed a break” (30%) and “medicine has side effects or makes me feel bad” (18%). There were no significant differences among reported reasons for non-persistence between the non-persistent/non-adherent patients and non-persistent/adherent patients.

Conclusions: Durable viral suppression was low among patients reporting non-persistence. Those who were non-persistent/adherent were less likely to be virally suppressed than the persistent/non-adherent, supporting the importance of maintaining persistence for viral suppression. In addition to assessing non-adherence, routine screening for non-persistence at HIV-clinical appointments may be beneficial.



23 Using Machine Learning to Examine Disparities in HIV Clinical Outcome

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Background: Viral load suppression through effective antiretroviral therapy (ART) reduces the risk of morbidity and mortality for people living with HIV and is a pillar of the US National HIV/AIDS strategy. Many patients remain unsuppressed and thus interventions are needed to realize the potential of ART. Routine measurement of population-level viral load data can identify patient groups with low rates of suppression to guide targeted interventions. Classification tree analysis allows a more precise modeling of disparities in HIV clinical outcomes than traditional regression approaches. Results are provided visually in an intuitive format and are easily interpretable by multidisciplinary care teams of providers.

Methodology: We derived a retrospective sample of 11,419 adult PLWH from 180 established HIV primary care programs in New York State. Data were abstracted from medical records for the purpose of performance measurement and analyzed using classification tree analysis, a data-mining technique.

Results: The algorithm classified the study cohort into 8 groups with varying rates of viral load suppression, including 5 groups significantly less likely to achieve viral load suppression. Predictors of viral load suppression included age, housing status, drug use, and race/ethnicity. Patients who abused substances and were unstably housed had the lowest rate of viral load suppression (56.2%). Confirmatory analysis indicated that the likelihood of suppression varied significantly among risk profiles ($p < 0.01$), with relative risks ranging from 0.7 to 2.0.

Conclusion: The CaRT algorithm identified several patient groups with elevated risks of failure to achieve suppression. This easily implemented technique can analyze data from electronic medical records to drive quality improvement and help target resources to populations in greatest need.

24 Study on Benzodiazepine (BZD) use, Mental Health Factors and Adherence to Antiretroviral Therapy (ART) Among Methadone Maintenance Treatment (MMT) Clients From Lalitpur District Nepal

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Background: Using of BZD orally or intravenously to intensify the effects of methadone has become a common practice among MMT clients. This study estimates the prevalence of BZD use, mental health factors and adherence to ART.

Methodology: A cohort 20 active MMT clients (1 female) under ART received monthly urine tests by Assay type: Immuno Chromatography. Structured questionnaires were used to collect behavioral data relating to mental health, BZD use and ART adherence and the qualitative data collected through results of the urine analysis, serological results on hepatitis B and C were taken from client's MMT medical charts. Quantitative data was analyzed via SPSS 13.0 using descriptive and inferential statistics and Qualitative data was manually analyzed through thematic, content and narrative analysis. The study was done from December 2013 to December 2014.

Results: Among the 20 cohorts, 10% ($n = 2$) had HBV co-infection and 18% ($n = 17$) had HCV co-infection. Median age was 32 years, Median daily methadone dose was 25 mg. 17 clients (1 female) tested positive for regular BZD use ($n = 17$) 85% without a prescription and also showed higher ASI scores ($p = 0.04$ for composite scores and 0.005 for severity ratings), suffered severe anxiety or tension ($p < 0.0005$) and treatment need for psychological or emotional problems ($p = 0.005$) and also showed that the cohorts were also less likely to be adherent to ART (OR = 0.43; $p < .01$; CI = 0.25 - 0.72). Only 15% ($n=3$) were adherent to ART (OR = 1.81; $p = <.05$; CI = 1.01 - 3.24).

Conclusion: The study shows the need to redesign MMT to address co-occurring anxiety or psychological problems as well as need to study and investigate on prescribing long half-life slow absorbing therapeutic doses of BZD and enhance ART adherence among methadone clients.



25 Implementation of a Patient-Centered HIV Care Model to Optimize HIV Outcomes Through Improved Communication Between Pharmacists and Providers

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Introduction: Antiretroviral therapy (ART) reduces mortality among HIV-infected individuals who remain engaged in care and adherent to therapy; yet, only 30% of those diagnosed with HIV are virologically suppressed. By integrating care and improving communication between pharmacists and HIV clinical providers, the Patient-Centered HIV Care Model (PCHCM) project aims to increase retention in care and adherence to ART, thereby improving HIV clinical outcomes.

Description: The PCHCM project, which began in September 2013, will enroll 1,000 HIV-infected clients, emphasizing minority enrollment. Clinical providers share complete medical history with partnered pharmacists in preparation for Medication Therapy Management (MTM) services; monitoring of communication and collaboration between the provider, pharmacist, and patient continue throughout the project period. As part of implementation, the project team has identified partner clinic-pharmacy sites, developed and delivered site training, and is providing ongoing project oversight, data management and analysis. This includes individual and all site meetings to discuss early challenges and successes to project implementation. Data collection includes clinical outcomes gathered from medical and pharmacy record abstraction.

Lessons Learned: As of January 2015, seven sites are participating and have initiated recruitment. Overall, 114 patients were scheduled for the initial MTM visit, of which 63 (55%) have been completed and 51 are pending. Current reported challenges include recruitment (clients unable or unwilling to switch pharmacies) and enrollment (delay in scheduling MTM visit, missed MTM visits) barriers. Early successes cited by project sites include corrected timing of medication administration, improved understanding of complex medication regimens, more meaningful communication between pharmacists and providers and more organized HIV-specific communication between pharmacists and clients.

Recommendations: To construct best practices, the project team will continue to assess challenges and successes with the PCHCM. Data analysis will be conducted to evaluate pharmacist-provider communication patterns and the impact of the PCHCM on HIV clinical outcomes.

27 When Medical Providers Identify Potentially Lost-to-Care, HIV-Positive Individuals: A Comparison of Lost-to-Care and in-Care Populations

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Background: Identifying and linking HIV-infected persons to medical care is a key component of the National HIV/AIDS Strategy. However, care status is dynamic and patients often enter and exit care over time. Partnerships between medical providers and health departments can help distinguish potentially lost-to-care persons from those with current evidence of care due to 1) patient movement to different providers or 2) the individuals returned to care without public health intervention.

Methodology: Potentially lost-to-care patients were referred by HIV medical providers to the Houston Department of Health and Human Services (HDHHS) for possible re-linkage intervention (N = 271). Record searches among multiple care and surveillance systems determined if provider referrals had evidence of care within the previous six months (n = 133) or appeared to be out of care (n = 138). These populations were compared by age, sex, race, ethnicity, duration of HIV diagnosis, and proximity of patients' most current residential address to the nearest provider clinic using univariate and multivariable logistic regression.

Results: Univariate analyses were not significant for age (OR = 0.981, [CI 0.962-1.001]), sex (OR = 0.965, [CI 0.589-1.579]), race (OR = 1.334, [CI 0.794-2.242]), ethnicity (OR = 1.536, [CI 0.834-2.829]), duration of HIV diagnosis (OR = 0.999, [CI 0.982-1.016]), and proximity (OR = 1.027, [CI 0.973-1.084]). Multivariable analysis showed no significant effects.

Conclusions: Among this sample, results suggest that provider referrals of potentially lost-to-care persons lack a distinguishing predictor for care status. A previous Houston study demonstrated that predictors of returning to care dissipate as the length of time out of care increases, suggesting that this factor should be a consideration for future studies. Despite that limitation, our analyses queried multiple characteristics, including residential proximity to major HIV providers, an important consideration for a widespread metropolitan area. Given the importance of the physical environment and access to care, additional studies might still consider this measure.



28 Prescription of *Pneumocystis jirovecii* Pneumonia Prophylaxis Associated With Viral Suppression Among HIV-Infected Patients

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Background: *Pneumocystis pneumonia* (PCP) caused by *Pneumocystis jirovecii* is a life-threatening infection. United States treatment guidelines recommend PCP prophylaxis for all HIV-infected persons with a CD4+ T-lymphocyte count <200 cells/mm³ (CD4 <200). Recent data suggest that PCP prophylaxis may not be necessary for patients who are virally suppressed because PCP incidence is low in these individuals. Few recent studies have examined PCP prophylaxis prescription practices and whether they vary by viral suppression status.

Methodology: The Medical Monitoring Project (MMP) conducts behavioral and clinical surveillance among a representative sample of HIV-infected adults receiving medical care in the United States. Using MMP data collected between 6/2009–5/2012, we assessed the weighted percentage of HIV-infected patients with a CD4 <200 who had documentation of PCP prophylaxis prescription in the medical record by durable viral suppression status. We also assessed the independent association between PCP prophylaxis prescription and durable viral suppression using multivariable logistic regression.

Results: Among HIV-infected adults with a CD4 < 200 (n = 1,655), 19% (95% confidence interval [CI], 16–22) did not receive PCP prophylaxis. Among those who were virally suppressed, 28% (95% CI, 23–33) did not receive PCP prophylaxis and among those who were not virally suppressed, 14% (95% CI, 11–17) did not receive PCP prophylaxis. Patients who were virally suppressed were significantly more likely to have not received PCP prophylaxis after adjusting for confounders including race/ethnicity and number of CD4 <200 tests (adjusted prevalence ratio, 1.63; 95% CI, 1.30–2.05).

Conclusions: Almost one in five HIV-infected patients with a CD4 <200 did not receive PCP prophylaxis despite current guidelines. The majority of patients who did not receive prophylaxis were virally suppressed. Providers may be taking viral suppression status into account when deciding whether or not to initiate PCP prophylaxis.

29 Understanding Barriers and Facilitators Experienced by HIV Care Providers When Engaging Patients in Care

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Background: In the US, many persons living with HIV are not successfully engaged in HIV care and treatment. Research has focused on the expansion of HIV testing services and linking people to HIV care after initial diagnosis. However, little research has been conducted on engagement and retention of patients in HIV care. Understanding the barriers and facilitators experienced by HIV care providers who strive to engage and retain their patients in care is key to achieving higher levels of viral suppression and thus reducing the number of new HIV infections.

Methodology: Qualitative data were collected in 2014 from 30 HIV care providers in three major metropolitan areas with high HIV prevalence (Atlanta, GA; Baltimore, MD; Washington, DC). Interviewees included physicians, nurse practitioners, physician's assistants, registered nurses, and case managers/social workers. The interviews explored barriers and facilitators to patient engagement and retention experienced by providers of HIV care and treatment.

Results: Data were analyzed for emerging themes across all facility and provider types. Key facilitators of patient engagement in care included the availability of a broad range of providers and support services (ideally in one location), the flexibility of clinic procedures and providers, and reputation and trust between providers and patients. Key barriers included challenges in connecting patients to needed support services, difficulties navigating insurance- and medication-related policies, patient and provider challenges in managing appointments, and persistent stigmatizing of HIV-positive patients by other clinicians.

Conclusions: Our findings suggest that an orientation toward understanding and treating patients holistically, while improving support systems and patients' abilities to navigate them may enhance patient engagement in care. These data support ongoing efforts to improve patient engagement at each point in the HIV continuum of care and illustrate the importance of providers in effectively reducing the gap in continuous and consistent HIV care and treatment.



32 Inclusion of HIV-Diagnosed Persons not Receiving HIV Care in the Medical Monitoring Project

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Introduction: The Medical Monitoring Project (MMP) is an HIV surveillance system that collects clinical and behavioral data on persons receiving HIV care. MMP data are used to make nationally representative estimates of HIV-related care utilization, clinical outcomes, and transmission risk behaviors. The Institute of Medicine has recommended that MMP broaden its target population to include persons not receiving HIV care, who have elevated mortality and risk of HIV transmission.

Description: The Case-Surveillance-Based Sampling (CSBS) demonstration project is a pilot of a new sampling method for MMP to include HIV-diagnosed persons both receiving and not receiving care by sampling from HIV case surveillance registries rather than facility-based sampling frames. From July, 2013–June, 2014, we attempted to locate, recruit, interview, and perform medical record abstractions on 1,200 sampled adults living with a diagnosis of HIV in five US state and metropolitan areas. We collected data on persons who had moved to another state after establishing agreements with health departments in jurisdictions of residence.

Lessons Learned: We located 751 sampled persons (63%). Of these, 681 (91%) resided in the project area conducting data collection, of whom we interviewed 490 (72%); among located out-of-state migrants, we interviewed 23 (33%). Adjusted for eligibility, the overall response rate was 46% compared to 51% for facility-based MMP in the same year. Among CSBS respondents, 26% would not have been eligible to be included in facility-based MMP, because they were not receiving care. Compared to facility-based sampling, CSBS methods yield a similar response rate while including a new population of public health importance.

Recommendations: In mid-2015, MMP will broaden its population of inference using CSBS methods to include HIV-diagnosed persons both receiving and not receiving care. MMP will continue to strengthen methods for locating and recruiting sampled persons, including out-of-state migrants, to improve data quality.

35 Connections to HIV Care Using a Modified ARTAS Program and a Statewide Team

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Introduction: Many barriers exist to timely linkage and engagement in care for persons living with HIV (PLWH). Improved system coordination is important to meeting linkage and retention goals. We explored patient navigation using a statewide team of public health officers (State Bridge Counselors, SBC), specifically trained to assist with increasing access to care for PLWH in North Carolina.

Description: Program implementation began in January 2013. SBCs were tasked with accepting referrals for PLWH not in care (newly diagnosed or lost to care), and attempting to link or re-engage them in care. SBCs completed Anti-Retroviral Treatment and Access to Services (ARTAS) training offered by the CDC, and utilized an ARTAS-informed strengths-based case management approach while providing patient assistance (e.g. system navigation, transportation).

Lessons Learned: Patient trust was paramount to achieving the goals of linkage and re-engagement in care. Differentiating retention in care from disease control roles was critical for gaining patient and provider trust; the ARTAS-informed approach facilitated this differentiation. A coordinated effort between public health and local agencies resulted in development of standardized communication methods and process standards, data collection, classification of outcomes, monitoring and evaluation and communications logistics. CAREWare software facilitated these processes. Field work performed by SBCs complemented clinic linkage and retention efforts, and encouraged development of policies and procedures to address broken appointments. Turnover in the SBC workforce occasionally limited effectiveness of the team and necessitated frequent ARTAS refreshers. A statewide team management structure with statewide meetings and calls facilitated uniform training and performance expectations.

Recommendations: A statewide team of public health officers provided linkage and retention in care services for PLWH in NC. Patient trust was enhanced by distinguishing between linkage and retention efforts and disease control efforts. Integrating field work and service delivery using a modified ARTAS program was critical to improving HIV care coordination.



36 Harnessing Technology for Health: Can Social Media Enhance the Reach and Effectiveness of a Photo-Stories Project to Promote HIV Medication Adherence?

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Background: Increasing evidence supports social media as a cost effective and engaging way to deliver educational HIV messages. Although growing numbers of people with HIV (PWH) report using computers, mobile phones, and social network sites, few adherence interventions use social media. We explored the feasibility and acceptability of conducting Snapshots of Adherence (Snapshots), a photo-stories adherence education and motivation intervention, via social media.

Methodology: 16 PWH created medication adherence educational posters using photo-stories, personal images and narratives of their own HIV and adherence experiences. We conducted post project interviews with a sample of participants who made (N = 10) and viewed (N = 15) the materials and assessed the feasibility and acceptability of a social media version of the project in semi-structured interviews. We analyzed interview transcripts for key concepts using strategies of theme analysis.

Results: Many interviewees were enthusiastic about both sharing their photo-stories of adherence and being educated by others' stories through social media. They commended social media's ability to connect people with HIV to each other, disseminate adherence photo-stories widely, educate people without HIV about the virus and medicines to decrease stigma, and reach younger PWH who report high computer use. Although they were a minority of participants, a few PWH did report notable barriers to conducting Snapshots via social media, including computer illiteracy and disclosure fears.

Discussion and Conclusion: The pros to conducting Snapshots via social media outweighed the barriers. Participants were enthusiastic about the ways social media could enhance the reach of the intervention. Barriers such as lack of computer knowledge and privacy concerns could be addressed by computer tutorials and computer access in clinics; and helping patients to navigate social media without disclosing their identity. Social media is particularly well suited to photo-stories. Further research is warranted to develop Snapshots and other adherence intervention strategies online.

37 HIV Prevention: Case-Based Education Improves Clinical Decision-Making

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Background: With approximately 50,000 new HIV infections in the United States every year, prevention remains a critical public health priority. Both patient behavior modification and biomedical prevention strategies are integral to stemming HIV transmission.

Methods: This study evaluated whether an online continuing medical education (CME) activity can improve ID/HIV specialists' and PCPs' skills with respect to identifying individuals at risk for HIV acquisition and appropriately incorporating pre-exposure prophylaxis (PrEP) into clinical practice. The activity launched online on 5/13/2014 and comprised 2 cases in an interactive, text-based format. Educational effect was evaluated through a case-based linked pre- vs post-assessment study design, with learners serving as their own controls. A paired 2-tailed t-test evaluated whether the mean pre- and post-assessment scores significantly differed from one another and Pearson's χ^2 statistic measured changes in responses to individual questions. Cohen's D was used to calculate the effect size of the intervention. Data were collected through 6/9/2014.

Results: Overall, 7,285 healthcare providers participated in the activity. This analysis includes 73 ID/HIV specialists and 279 PCPs who completed all pre/post questions. Among HIV/ID specialists, correct responses were between 20% and 49% higher on the post-assessment after CME completion ($P < .05$; $d = 1.37$). Among PCPs, correct responses were between 30% and 55% higher on the post-assessment after CME completion ($P < .05$; $d = 1.355$). More specifically, following significant ($P < .05$) improvements were observed:

- Identification of candidates for PrEP (ID/HIV specialists: 68% vs 92% (pre- vs post-assessment); PCPs: 29% vs 72%)
- Providing ongoing monitoring among patients receiving PrEP (ID/HIV specialists: 15% vs 86%; PCPs: 10% vs 64)
- Providing appropriate PrEP care in the context of pregnancy (ID/HIV specialists: 66% vs 92%; PCPs: 53% vs 75%)

Conclusions: This online, case-based CME activity, modeled after the interactive grand rounds approach, resulted in significant gains in provider ability to appropriately use PrEP.



38 Maximizing Adherence: A Personalized Learning Approach in HIV Care

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Background: Advances in antiretroviral therapy (ART) have dramatically reduced HIV-related morbidity and mortality and transformed HIV into a chronic condition. However, only ~25% of individuals living with HIV are virologically suppressed. Physicians who care for these individuals have the opportunity to proactively identify barriers and foster adherence among their patients. This study evaluated the impact of an online continuing medical education (CME) initiative on provider ability to appropriately assess and encourage ART adherence.

Methods: Personalized Learning (PL) is a needs-driven educational solution that directs learners to educational programming based on individual practice gaps. A case-based self-assessment (SA) was used to identify participating physicians' individual practice gaps in assessing and fostering ART adherence. Each SA question was aligned with 1 of 3 practice gaps and 1 of 6 interactive, CME-certified, multimedia education modules. Each physician was directed to one or more modules based on individual educational needs identified through the SA. The SA and all 6 CME modules launched simultaneously on 6/8/2012. Education effectiveness was measured through statistical comparison between the SA and post-assessment data.

Results: A total of 4,947 healthcare providers, including 2,561 physicians, have participated in the PL curriculum. These results focus on the 175 physicians who actively treat HIV infection and completed both pre- and post-assessment questions. Comparison between SA and post-assessment data revealed that physicians who participated in the PL curriculum were significantly more likely to:

- Proactively recognize factors that may negatively impact adherence ($P < .001$)
- Recognize the limitations of patients' ability to recall adherence ($P < .001$)
- Utilize communication skills that avoid judgment ($P < .001$) and encourage empathy ($P < .001$)
- Incorporate strategies, such as text messages, to improve adherence ($P < .001$)

Conclusions: This PL curriculum, which guided physicians through a defined sequence of CME modules, significantly improved physician ability to identify barriers and develop strategies to improve adherence to ART.

40 Trends in HIV Viral Load Suppression During and After Pregnancy — United States, January 1996– March 2014

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Background: HIV plasma RNA viral load (VL) suppression with antiretroviral therapy (ART) reduces the risk of mother-to-child HIV transmission, protects women's health, and supports the U.S. National HIV/AIDS Strategy. We examined patterns of VL during and after pregnancy in the last 20 years, during which PMTCT and HIV treatment have evolved.

Methodology: Using data from 9 HIV specialty clinics participating in the HIV Outpatient Study (HOPS), we examined \log_{10} VL (copies/mL), percentage with VL suppression (<200 copies/mL), and ART status at pregnancy start, end, and 6 months postpartum among pregnancies occurring during 1996–2014. Differences in medians and percentages were assessed by using Kruskal-Wallis and chi-square tests, respectively.

Results: Percentages of pregnancies (202 among 140 women), by race/ethnicity, were 65% (black), 15% (white), 13% (Hispanic/Latino), and 7% (other). Median age at pregnancy was 29 years (interquartile range [IQR]: 24–34), and median time from HIV diagnosis to pregnancy was 4 years (IQR: 2–7). ART prescription was documented at pregnancy start (56%), end (79%), and postpartum (66%). Regardless of ART status, median \log_{10} VLs were 2.8 (IQR: 1.4–3.8) at pregnancy start, 2.1 (IQR: 1.4–2.9) end, and 2.5 (IQR: 1.4–3.9) postpartum ($P = .002$). Similarly, percentages with VL suppression were 36% at pregnancy start, 55% end, and 41% postpartum ($P = .002$). During 1996–2004 ($n = 118$), the percentages with VL suppression were 35% (pregnancy start), 49% (pregnancy end), and 39% (postpartum) ($P = .017$); during 2005–2014 ($n = 84$), the corresponding percentages were 67%, 74%, and 76% ($P = .022$).

Conclusions: In a sample of HIV-infected pregnant women, VL suppression increased during pregnancy but was suboptimal postpartum, even during the past decade, when ART to attain an undetectable viral load was recommended for pregnant women. Postpartum women may require additional interventions to support ART initiation and adherence.



43 Changes in Familiarity and Willingness to Take PrEP, and the Perceived Influence of PrEP on Engaging in and Temptation for- Condomless Anal Sex: Results From a Longitudinal Study of Gay and Bisexual Men, 2011-2014

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Background: Once-daily Truvada for pre-exposure prophylaxis (PrEP) is a promising strategy to eliminate HIV transmission; however, uptake among gay and bisexual men (GBM) has been slow amidst concern in popular/social media that PrEP will increase in condomless anal sex (CAS).

Methodology: We analyzed baseline (BL) and 12-month (12M) follow-up data for 162 HIV-negative highly sexually active GBM who participated between 2011-2014. We conducted multilevel modeling examining the effect of between-person enrollment month (0 through 27) and within-person visit type (BL vs. 12M) on PrEP familiarity, willingness to take PrEP, and perceived influence of PrEP on likelihood- and temptation- to engage in CAS.

Results: At BL, 23.5% knew a fair amount or a lot about PrEP, 46.9% expressed willingness to take PrEP, 25.3% believed PrEP would increase their likelihood to engage in CAS, and 58.0% believed PrEP would increase their temptation to engage in CAS. By 12M, these proportions were 33.3%, 46.3%, 28.4%, and 51.9%, respectively. PrEP familiarity increased significantly across time both between participants by enrollment month (AOR = 1.08, $p = .01$) and within participants from BL to 12M (AOR = 1.34, $p = .03$). Willingness to take PrEP and perceived influence of PrEP on likelihood to engage in CAS did not change over time. Perceived influence of PrEP on temptation to engage in CAS increased marginally within participants from BL to 12M (AOR = 1.05, $p = .07$).

Conclusions: This study highlights the need to identify barriers to PrEP uptake amidst increasing familiarity. Few believed taking PrEP would cause their CAS to increase and this did not change over time. However, a majority believed PrEP would increase temptation for CAS and data trended toward this percentage increasing over time. Findings highlight the need to investigate the role that dissonance between temptation and likelihood may exert on actual changes in CAS among men before and after they start PrEP.

44 Feeling Watched: Emotional and Moral Effects of Wisepill Use Promote Adherence for Adults Taking Antiretroviral Therapy (ART) in Rural Southwestern Uganda

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Background: Real-time electronic adherence monitoring devices, such as Wisepill, enable researchers and clinicians to assess pill-taking behavior and detect potential adherence problems as they occur. Although Wisepill use has been shown to be feasible in resource-limited settings, a better understanding of user experiences is needed to inform Wisepill-based adherence interventions.

Methodology: Sixty-three HIV-infected adults initiating ART in rural southwestern Uganda participated in a mixed-methods intervention development study. The aim was to assess the effects of SMS reminders and SMS-triggered social support on adherence, as measured through real-time electronic monitoring with Wisepill. Participants took part in individual qualitative interviews covering: (a) experiences with the Wisepill device, (b) acceptability and use of SMS reminders, and (c) social support received. Transcribed interview data were coded using Atlas.ti software. Using themes identified across the data, conceptual categories were formed to represent the experience and meaning of using the Wisepill device.

Results: Participants experienced real-time adherence monitoring through Wisepill as a subjective sense of feeling "watched." Feeling watched had a positive meaning for most participants, who reported it helped to promote adherence to ART in three ways. First, it strengthened a sense of accountability; participants reported taking their pills because they expected to be contacted if the device was not opened on time. Second, participants felt cared about, motivating them to take ART in an effort to avoid disappointing those "watching." Finally, participants wanted to demonstrate that they understood the purpose of Wisepill and ART and were taking their pills as prescribed.

Conclusion: The use of Wisepill creates a positive feeling of being watched in users, which reinforces a sense of responsibility to others to take ART as prescribed. Besides assessing adherence, the emotional and moral meanings of Wisepill use can also promote adherence through a combination of multi-level effects.



45 Barriers and Facilitators to Accessing HIV Care in Kumasi, Ghana

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Background: Retention to care poses a problem in resource-limited settings such as sub-Saharan Africa where patients continue to face a myriad of obstacles including financial, social, and health systems barriers. The goal of this project was to identify barriers to care for the adult HIV clinic population at Komfo Anokye Teaching Hospital (KATH) in Kumasi, Ghana in order to improve access and retention to care.

Methodology: We conducted a cross-sectional survey of a sample from the adult HIV clinic patient population at KATH. Over six weeks, 390 surveys were administered verbally in English or Twi with the help of clinic staff translators. Patients attending clinic on these days were randomly selected to participate. Information collected included patient demographics, HIV disclosure status, and 'yes' or 'no' answers to 20 possible barriers.

Results: Our study population had an average age of 43.6 years, with 74% female, and 91% on antiretroviral therapy. Significant social barriers included confidentiality concerns (55%), HIV non-disclosure status (51%), and fear of discrimination (36%). Significant economic and systems barriers included cost of transportation (57%), cost of labs/ medication (56%), clinic distance (42%), clinic wait time (35%), and medication stockouts (31%). Gender distribution for barriers were similar with the exception of HIV non-disclosure status which 38% of males reported as being a barrier vs. 56% of females.

Conclusions: The most significant barriers are financial or systems based, with patients traveling long distances and paying a fee to receive medication and labs. Medication stockouts are also a significant problem due to the potential risk of viral resistance with treatment interruption. Further investigation is needed to determine if these barriers have a negative impact on individual health with objective measurements of HIV viral loads and resistance testing.

46 An Implementation Science Framework to Examine Multilevel Barriers to Operationalizing a Woman-Focused HIV Intervention in Usual Care in South Africa

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Background: The Women's Health CoOp (WHC) is an efficacious, women-focused, HIV-risk harm reduction intervention. However, efficacious interventions often languish for years before being incorporated into usual care settings. This NIAAA study uses an implementation science framework, developed through the NIH Implementation Science Initiative, to examine potential barriers and facilitators associated with the WHC's implementation for women living with HIV in two usual care settings in South Africa: health care centers and drug rehab clinics.

Methodology: Focus groups and in-depth interviews were conducted with governmental officials, clinical providers, and substance using women who were living with or at-risk for HIV in order to identify potential implementation barriers and facilitators and suggested intervention adaptations. We also used stakeholder feedback to refine our existing WHC marketing plan.

Results: Perceived appropriateness of the WHC reached saturation with few suggested adaptations. Identified barriers to implementation and full participation of those who could benefit from the WHC included stigma and shame and a lack of childcare and transportation. Among those in the target population, substance use, community violence and fear in relationships were identified as major reasons not to seek treatment. Overall, this formative stage identified strong acceptability of the WHC across stakeholder groups and highlighted potential barriers to the effective implementation of the intervention.

Conclusions: The WHC addresses not only substance use, sex risk, and relationship power, gender-based violence, violence prevention but understanding HIV and the importance of ARV adherence. It has shown efficacy in South Africa in several studies and is ready to be implemented and tested in usual care settings. The objective from the formative to the randomized phase will be to address the identified barriers, then conduct a series of iterative pilot studies in a stepped-wedge design to evaluate implementation, service, and patient outcomes.



48 HIV/AIDS: An Assessment of Medical Student Knowledge, Attitudes and Comfort

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Background: Despite the 2006 CDC revised HIV testing guidelines, little information has been given on how physicians will develop the needed skills to successfully fill this mandate. The limited data on HIV training drives our focus on HIV/AIDS education during medical school, a critical stage in physician development.

Methods: Using a voluntary 74-question survey, data were collected from 1,026 medical students at nine US medical schools. All survey participants were asked to document participation in a variety of extracurricular programs and were assigned to one of three study arms based on their level of involvement in HIV/AIDS-centered extracurriculars. ANOVA analysis was used to analyze the medical students' HIV/AIDS education associations with their knowledge, attitude and comfort levels regarding HIV/AIDS healthcare and their demographic characteristics. Multivariate analyses by the ordinal logistic regression were conducted to assess the contribution of students' knowledge, attitude and comfort levels in addition to other covariates.

Results: After adjusting significant confounders (sexual orientation, work with people living with HIV and experience with the sexual history interview, medical school attending and medical school year) higher average attitude score ($p = 0.0208$, OR 1.605) and average comfort score ($p = 0.0006$, OR, 1.689) were significantly associated with participants who engaged in the HIV/AIDS-centered extracurricular program arm. Medical student knowledge of HIV testing and care was not significantly associated with HIV/AIDS-centered education groups. No differences were found between male and female respondents.

Conclusion: Medical students are equipped with knowledge of HIV/AIDS but students' comfort and attitudes towards HIV care are significantly shaped by outside experiences with HIV testing. Data suggests that in order to achieve compliance with the CDC recommendations, formal training, preferably beginning in medical school, is an important consideration for medical school curriculum committees.

49 Improving Treatment Adherence Advice and Support for 50,000 People Living With HIV in Zambia Through the Use of the Electronic End AIDS Portal

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Introduction: The End AIDS Portal is an accessible and anonymous resource run for and by people living with HIV. It uses text messages and to reach people with HIV who are marginalised and lack safe access to support and services such as sex workers or Men who have Sex with Men.

Description: End AIDS Portal uses Short Messaging System (SMS) to allow people to ask HIV related questions. Messages are received by health agents who are HIV-positive and are on treatment. Messages are sent to a group of phone numbers (to a short code linked to a hub centre) via bulk messaging. The Portal comprises a computer server with 4 working stations and provides advice and feedback to people accessing the service (adaptable to local languages). The Portal is an innovative approach that experiments the usage of anonymous SMS in the management of HIV treatment.

The End AIDS portal targets:

- Rural areas populations
- High stigma groups such as men having sex with men and sex workers
- Bulk messaging dissemination with clear information on HIV prevention, care, and treatment sent to a minimum of 10,000 people with every text
- Usage of information for policy advocacy

Lessons Learned: Health agents have identified the number of beneficiaries contacted and segregated by gender, age and location. Sexual and Gender minorities and sex workers – key populations have been included through the Portal and have found an interactive safe space to discuss access to HIV services, groups that have been persistently excluded and marginalised in health/HIV care due to unaccommodating legal and policy environment in Zambia.

Recommendations: This innovation complements Zambia government's efforts of addressing the key drivers of new HIV infections: high rates of multiple concurrent sexual partners; low and inconsistent use of condoms; low rates of male circumcision; mobility; vulnerable groups with high risk behaviours and Mother-To-Child Transmission. The project will utilize findings through linkages with Health centres; Policy makers and Ministry of Health officials at district, provincial and national levels and other cooperating partners to promote universal access to HIV care services including key populations.



50 A High Number of Days in Pain is Associated With Missed Visits Among HIV-Positive Women With Drug Use

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Background: Our prior research found that, among HIV-positive women, a high number of days in pain was positively associated with missed visits, a commonly used measure of retention in care. However, little is known about how pain and drug use may interact to affect missed visits among this demographic group. Therefore, we sought to examine the association between pain and missed visits, stratifying by drug use.

Methodology: From 2010-2013, a longitudinal multisite initiative was conducted which obtained socio-demographic, risk behavior and clinical characteristics from a cohort of HIV-positive women. Pain was measured as number of days in the previous month that pain caused difficulties with activity and was categorized as: none, low (below median) and high (above median). Missed visits during the one-year follow-up period were dichotomized as ≤ 1 vs. ≥ 2 . Current drug use included cocaine, heroin, methamphetamine, or any injection drug use in the last 3 months. We conducted multivariate logistic regression stratifying by drug use.

Results: Among 921 HIV-positive women, median age was 42.3 years; 26.1% were Hispanic and 67.3% non-Hispanic Black; and 13.8% reported current drug use. For days in pain, 51.2% reported none, 24.2% a low number and 25.6% a high number. Current drug users were more likely to report a high number of pain days than non-drug users (31.2% vs. 23.8%, $p = 0.005$). Among current drug users, those with a high number of pain days were more likely to miss ≥ 2 visits than those with none ($aOR = 4.64$, 95% CI: 1.50-14.36). There was no significant association between pain and missed visits among non-drug users ($aOR = 0.77$, 95% CI: 0.51-1.17).

Conclusion: A high number of pain days was associated with missed visits among HIV-positive drug-using women. A better understanding of how the intersection of drug use and pain may impact retention could guide efforts to improve medical care for this vulnerable group.

52 Improving Depression Among HIV-Infected Adults: Generalizing Trial Results to Routine Care

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Background: Randomized controlled trials (RCTs) have demonstrated the efficacy of depression management interventions for HIV-infected adults. Whether these results generalize to depressed adults in routine HIV care is unknown. Generalizability weights are a recently proposed method to quantitatively extrapolate RCT findings to broader clinic populations, accounting for possible selection bias in RCT participants.

Methodology: We generalized effect estimates from participants with 6-month outcomes in SLAM DUNC (RCT of a measurement-based depression treatment intervention relative to usual care among depressed HIV-infected adults, $n = 190$) to the CNICS cohort (HIV patients in routine care at 8 US sites). In CNICS, 1,474 adults met modified SLAM DUNC inclusion criteria (likely major depression; no bipolar/psychotic disorders). Generalizability weights were calculated as the inverse odds of being in SLAM DUNC (vs CNICS, in a pooled dataset) conditional on predictors, and stabilized by the marginal odds. Intervention effect was estimated as the mean difference between arms in 6-month Hamilton Rating Scale for Depression (HAM-D) score. We compared trial results to generalizability-weighted results.

Results: SLAM DUNC participants were more likely female, African American, and men who have sex with men (MSM); more likely to be on antiretroviral therapy (ART); and less likely to have panic disorder or problematic alcohol/drug use than CNICS patients. In the trial, the intervention led to a 3.3-point relative HAM-D improvement (95% CI: 0.9, 5.6). The generalizability-weighted estimate indicated an attenuated effect in CNICS (1.7 points; 95% CI: -2.1, 5.5). Demographic and HIV clinical differences influenced the attenuation, while psychosocial differences had little impact.

Conclusions: The trial may have had an over-representation of participants, such as women, MSM, or those on ART, for whom the intervention was more effective. The impact of measurement-based depression care may be less pronounced in general HIV care, than observed in the trial.



53 Reliability of a Picture Pill Count Scoring Instrument

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Background: In the Music for Health Project (MFHP), an app-based HIV self-management mHealth intervention, participants report ART adherence by conducting monthly picture pill counts (PPC) using a smartphone camera function and multimedia message services. A 12-item 3-point Likert scale picture pill count scoring instrument (PPCSI) was developed to examine two key dimensions of texted pill count photographs: picture quality (the ease with which images within the photograph are visualized) and picture content (critical elements necessary to conduct the pill count). The purpose of this abstract is to report the reliability of the PPCSI.

Methodology: MFHP participants were given one-on-one instructions on taking pictures of their pills/bottle labels at baseline. They then repeated a reliability picture pill count the next day without assistance. We collected these PPC reliability surveys to analyze the PPCSI internal consistency, inter-rater reliability, and item analysis. Three raters independently completed the PPCSI for each participant using a rating protocol that was developed in tandem with instrument.

Results: 30 MFHP participants completed the reliability picture pill count. These individuals were predominantly African American (n = 22; 71%) and male (n = 25; 81%), aged between 18 and 56 years (mean = 36). Based on item analysis, the original 17-item instrument was reduced to 12 by eliminating redundancy. The PPCSI has good internal consistency, with a Cronbach alpha of .70 and a high inter-rater reliability with a Cronbach alpha of .850. Overall ICC coefficient reported of .850 (CI = .725-.924).

Conclusion: The PPCSI is a promising assessment of texted picture pill counts. There is an acceptable inter-rater reliability. The evaluation of picture quality and content may lend insight into alternative forms of electronic medication adherence methods. Further investigation into the usefulness of the PPCSI is recommended.

54 Reproductive Health Counseling Offered to Women Receiving HIV Care in the United States — National HIV Provider Survey, 2013

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Background: Comprehensive reproductive health counseling (CRHC) is recommended as an important component of care provided to women living with HIV, given the potential for transmission to partners and infants. Few women report discussing reproductive health with their HIV care provider, but national data describing provider CRHC practices are lacking.

Methodology: We estimated the weighted percentage of HIV care providers who offered CRHC to female patients. Data were collected in 2013–2014 from 1,234 HIV care providers in facilities sampled for the Medical Monitoring Project (MMP), a national probability survey of HIV-infected adults in care. Offering CRHC was defined as “almost always” or “always” offering five components of CRHC. To assess associations between provider characteristics and offering CRHC, we used chi-square tests and multivariate logistic regression analysis to estimate adjusted prevalence ratios (aPR).

Results: Of 1,144 providers caring for female patients, 49% (95% confidence interval [CI], 42–55%) reported delivering all components of CRHC: 71% assessed reproductive intentions, 78% explained perinatal transmission risk, 87% discussed antiretroviral therapy for preventing perinatal transmission, 76% provided contraception as appropriate, and 64% provided referrals for preconception care. Of providers delivering primary care as part of HIV care (83% of providers) 52% offered CRHC; of providers not delivering primary care, 33% offered CRHC (P < .01). After adjustment for gender, years of HIV care experience, and number of patients, providing primary care remained independently associated with offering CRHC (aPR: 1.48, CI 1.02–2.16).

Conclusions: Current guidelines recommend discussing reproductive health, including contraception and pregnancy, with all women of reproductive age living with HIV; however, only half of providers reported consistently offering CRHC. Increased awareness by providers of the recommendations to provide CRHC and tools facilitating provision of CRHC may increase the likelihood that women living with HIV in the United States will receive these services.



55 HIV Screening and Provider Fiscal Incentives: A Successful Process Improvement Endeavor at a Federally Qualified Health Center

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Background: CommUnityCare is the largest Federally Qualified Health Center (FQHC) that provides family and internal medicine, pediatrics, and obstetrical and gynecology care to the underserved population of Travis County, Texas. One of the 25 clinic sites within our FQHC is a dedicated HIV clinic, but there are many barriers to care. It is estimated that ~20% of patients living with HIV in the United States are undiagnosed, either because they were never tested for HIV or they never received the results of their HIV test. Increasing rates of HIV diagnosis will improve linkage to care which will hopefully result in patients getting on antiretroviral treatment thus improving overall health and decreasing transmission of HIV in the community. As an effort to increase rates of HIV diagnosis our organization recently implemented a fiscal incentive to providers (MD/DO, PA, NP) for a variety of metrics, one of which was screening patients for HIV. This incentive was that providers would get 2.5% to 5% of their salary based on 1 of 3 quality metrics beginning in January, 2014.

Methodology: We looked at monthly HIV screening rates among all providers in our organization and compared rates prior to and after the implementation of this fiscal incentive for HIV screening.

Results: For the 6-month period prior to the incentive introduction the average screening rate was 40%. After the incentive period began, the average screening rate over 11 months was 42%. When comparing 6 months pre-implementation of incentives to 11 months post-implementation, statistical significance is found with a Z-score -3.716 and P-value 0.0002. When comparing the 2 separate time points of December, 2013 to December, 2014, statistical significance is also found with Z-score -6.4963 and P value 0. Looking at these 2 different analyses of pre- and post-implementation of provider incentives both show an increase in screening that is statistically significant at $P < 0.05$.

Conclusions: The authors present the successful introduction, integration, and maintenance of a fiscally tied provider incentive program to improve patient care by increasing HIV screening and diagnosis thereby bridging the gap in linkage to care.

56 Relationship Dynamics and Partner Knowledge of Viral Suppression: A Longitudinal Study on Male Couples Living With HIV/AIDS (The Duo Project)

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Background: Accurate knowledge of whether a partner is virally suppressed has important implications for HIV prevention and care. This study examined associations between partners' perceptions of viral suppression and objective HIV RNA viral load tests, and whether relationship dynamics were associated with accurate knowledge of partner's viral load over time.

Methodology: Male couples ($N = 266$ couples; 532 men) with at least one HIV-positive partner on an acknowledged antiretroviral therapy (ART) regimen completed five assessments over a two-year period. At each assessment, participants were asked about relationship dynamics (e.g., commitment, satisfaction, closeness) and perceptions of their partner's viral load. HIV-positive participants had blood drawn to confirm viral load at baseline, 12 months, and 24 months. A dichotomous variable was used to capture accurate knowledge of partners' viral suppression using partner perceptions and viral load tests. Couple-level sum and difference scores were created for all relationship dynamics. We fit multi-level mixed effects logistic regression models, controlling for cohabitation, relationship duration, and couple HIV status.

Results: Among 407 men on ART at baseline, 50% were virally suppressed. Approximately 60% of partners had accurate knowledge of their partner's viral load. Of those who were inaccurate, 80% assumed their partner was suppressed and 20% assumed their partner was not suppressed. We found a significant fixed effect for time such that the odds of accurate knowledge of partner's viral load decreased over time ($aOR = 0.91$; 95% CI: 0.83-0.99). Within-couple differences in commitment ($aOR = 0.83$, 95% CI: 0.71-0.96) and satisfaction ($aOR = 0.93$, 95% CI: 0.89-0.98) were negatively associated with accurate knowledge of a partner's viral load over time.

Conclusions: When partners were incorrect, they were more likely to assume their partners were virally suppressed and this may factor into sexual risk decision-making and the provision of ART social support. Couple-based interventions are warranted to increase disclosure of viral load, while addressing partner discrepancies in commitment and satisfaction.



59 The Music for Health Project: Using a Music-Based-Messaging App to Promote ART Adherence Self-Management in Rural Georgia

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Introduction: Research suggests antiretroviral adherence may be suboptimal in rural dwelling persons living with HIV (PLWH) compared to their urban counterparts. Yet few adherence interventions have been tested in this group. The Music for Health (MFH) Project is a randomized controlled trial testing the efficacy of a music-based messaging smart phone app compared to an educational app for promoting adherence in PLWH at five rural health clinics.

Description: MFH participants receive a smartphone with the multicomponent app pre-loaded. The intervention app is a simulated DJ talk show with 12 songs and 11 videos that help educate and motivate PLWH to deal with issues that affect medication-taking. It includes a manual with web links and a pill count survey. Participants are assessed at baseline, 3, 6, and 9 months using computer interviews, hair samples for ARV drug levels, and provide monthly picture-pill counts conducted via text messaging. Text messaging reminders and trivia game questions encourage app use. Real-time app use is monitored remotely using Flurry Analytics.

Lessons Learned: Implementation of a technology-based adherence intervention in rural communities is feasible. However, several challenges must be addressed, including solving the technical complexities of app development; identifying qualified research coordinators in rural areas; engaging full participation of health department partners; and overcoming participant recruitment and phone and app use challenges (e.g., limited transportation, privacy concerns, reluctance to provide hair samples, connectivity issues, variability in skill and use of app).

Recommendations: Team with an experienced app developer and utilize local site coordinators. Develop creative ways to keep the app 'fresh' and encourage use. Educate participants on hair sample collection and explain that it will not alter hair style appearance. With high need for adherence interventions for PLWH in rural communities, knowledge of the concerns and challenges these individuals encounter is critical to successful intervention implementation.

61 Impact of Functional, Communicative, and Critical Health Literacy on HIV Medication Adherence

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Background: HIV/AIDS patients with limited health literacy had lower levels of HIV knowledge, are less likely to understand the meaning and importance of HIV viral load and CD4 cell count, and are less likely to be adherent to HIV/AIDS treatment.

Methodology: A cross-sectional study was used to examine the impact of the three dimensions of health literacy in HIV/AIDS medication adherence in a sample of 100 Puerto Ricans living with HIV/AIDS.

Results: Most participants 63% were men ($n = 63$), the mean age of 52.04 ± 11.58 years, the mean time since the diagnosis of HIV/AIDS of 11.39 ± 6.78 years, 42% completed high school education, 47% had a diagnosis of AIDS during lifetime, the mean HIV viral load was $160,255 \pm 1,047,525$ copies, and 18% had CD4 cell count equal or less than 200 cells/ μ l. Approximately, 66.3% had adequate health literacy as measured by BEHKA-HIV. Self-report medication adherence were found to be significantly related with BEHKA-HIV adequate health literacy ($p = .000$). Statistically significant differences were found among higher health literacy scores and CD4 cell count knowledge ($p = .001$), HIV viral load knowledge ($p = .000$), and correct identification of HAART ($p = .000$). An independent-sample t-test was significant for medication adherence and communicative health literacy ($p = .048$).

Conclusions: On average adherent participants had higher functional, communicative ($p = .048$), and critical health literacy than non-adherent participants.

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62 Implementation of a Pharmacist-Driven, Student-Supported Medication Reconciliation Program in an Ambulatory Care HIV/AIDS Setting

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Introduction: A clinical pharmacist-driven, student-supported medication reconciliation service was implemented to identify and reduce medication-related problems (MRPs) within an HIV/AIDS ambulatory care setting.

Description: Medication reconciliation encounters were scheduled in the half-hour preceding each patient's existing appointment. Electronic health record (EHR) data and pharmacy records were utilized to verify current medications, to discuss adherence, and to discuss any reported MRP. Data from the patient encounter was collected and analyzed to determine which HIV patients would benefit from medication reconciliation before routine visits.

Lessons Learned: 124 medication reconciliation encounters were performed. Sixty percent of patients (n = 74) had an inaccurate/incomplete medication history in the EHR. The pharmacy team resolved these issues by generating one accurate medication list for our providers that includes over-the-counter medications and prescriptions from other providers. In addition, notes or flags were sent to the provider regarding any MRP issues identified during our encounter.

Fifty-seven MRPs were identified. The most common MRPs were medication underuse, medication misuse/overuse, and adverse drug reaction. Of the patients with MRPs, 65% (n = 81) were prescribed greater than 5 medications. Our pharmacy staff worked with the medical providers to discuss MRP regarding dose change recommendations, drug substitution or new drug recommendations, or drug discontinuation suggestions. Pharmacy staff interventions to correct some MRPs included patient education and adherence counseling.

Recommendations: Pharmacists can assist providers in the meaningful use of EHR technology to improve patient care. A routine targeted medication reconciliation program can be very effective at identifying and addressing MRPs. Utilizing pharmacists to work with the medical team to ensure the proper use of medications may increase patient engagement and adherence in HIV/AIDS population. Patients with more than 5 prescription medications may be at higher-risk of having MRPs and should be prioritized when selecting patients for this program.

63 The Review of PMTCT in Nigeria; Lagos State as a Case Study

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Purpose of Study: Nigeria contributes up to 30% of the total global burden of Mother to Child Transmission of HIV (MTCT). In antenatal clinic survey (ANCS) there is prevalence rate of 4.1% and only 12% of pregnant women who require ARV to prevent MTCT receiving the drugs. There is need for improving PMTCT service in the country to join the world in pursuing the goal of eliminating Mother to Child Transmission of HIV (eMTCT) to reduce MTCT to less than 5% and reduce pediatric infections by 90% from baseline. However, this study focuses on PMTCT reports between 2004 and 2010 in Nigeria.

Methodology: Nurses, community health workers and traditional birth attendants TBAs were trained in Lagos State of Nigeria using modified PMTCT modules including HIV counseling and testing. These trained health workers were posted to primary health care centres in order to increase pregnant women's access to PMTCT. Integration, linkages and decentralization to public health care centres with effective coordination were also created. Sites offering PMTCT services was increased from 67 to 718 in 2010.

Summary of Results: There are increases in the numbers of pregnant women who access the services. Reports showed that 907,387 pregnant women were counseled and tested in 2010 compared to 18,554 in 2004. Numbers of HIV-positive pregnant women receiving prophylaxis also increased from 645 in 2004 to 26,133 in 2010. Also HIV exposed infants receiving ARV prophylaxis increased from 516 in 2004 to 14,573 in 2010.

Conclusions: The strengthening of primary health care will contribute more to the prevention of MTCT. By 2020 at least 90% of all HIV-positive pregnant women and breastfeeding infants will have access to more efficacious ARV prophylaxis in Nigeria and 30% of the world global burden of MTCT will be reduced.



65 Domains of Meaning and ARV Adherence

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Background: Many maintain that adherence to medical advice is enhanced by concordance between physician and patient explanatory models of disease. Research in explanatory models typically explores people's mechanistic understanding, and emphasizes differences between patient and provider models. However, for people living with chronic disease realms of meaning other than biological explanation are often most salient.

Methodology: Formatively, we conducted semi-structured interviews with demographically diverse people living with HIV. Their conceptual models of HIV disease and treatment were often not mechanistic. When asked, for example, to explain what HIV is, people often responded with "lifeworld" meanings such as "it's nothing to be ashamed of" or "it means I made a mistake." Taking medications also could have positive or negative associations. We translated a taxonomy of responses into a structured assessment of scientific understanding, and of these personal meanings, both positive and negative, plus self-report of ARV adherence and "need for cognition" (NFC). After cognitive interviews, we piloted the instrument with a convenience sample of 100 people living with HIV.

Results: Most respondents had limited understanding of the science of HIV disease and treatment. In particular, few had accurate understanding of viral replication or drug resistance. NFC correlated with accurate answers to questions about ARV treatment, but not other dimensions of HIV-related science. A scale representing negative meanings of living with HIV (e.g., anger, fear, shame) had high internal consistency (alpha .84). Scale scores were significantly associated with non-adherence ($r = .27, p = .008$); while scores on knowledge about ARV treatment were positively associated with adherence ($r = .25, p = .02$). Other areas of knowledge were not associated with adherence.

Conclusions: In this preliminary study, health beliefs and scientific knowledge are less important for ARV adherence than is psychological adaptation and acceptance of HIV status. Our instrument assesses personal meanings which may be obstacles to effective self-management.

66 The Role of Technology in Tracking Adherence to ART in Limited-Resource Settings: Preliminary Findings From a Randomized Controlled Trial in Southern Uganda

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Background: Despite the provision of antiretroviral therapy (ART) in many developing countries, multiple barriers persist for people living with HIV in their access to treatment and care. These barriers, largely economic, contribute to sub-optimal adherence rates and attrition in clinical care, which may lead to virological failure and/or drug resistance. In light of these compounding issues, researchers have developed both intervention-based and tracking-based studies to understand the factors, causes, and effects of low adherence rates among people prescribed ART in developing countries. One such study from Uganda involves monitoring ART adherence among HIV-positive adolescents in real-time using Wisepill Technology.

Methodology: We examine data from an ongoing study, Suubi+Adherence, which measures ART adherence among adolescents in southern Uganda (PI: Ssewamala; NICHD 1R01HD074949-01). Two groups of participants will be compared in this 5-year longitudinal cluster randomized controlled trial. One group will receive an economic empowerment intervention with proven success among a comparable demographic in the same region (Ssewamala et al., 2008-2014) and a package of bolstered standard of care for youth living with HIV, which includes counseling sessions on the importance of adhering to ART. The other group will receive only the bolstered standard of care. A total of 702 HIV-positive adolescents from 39 healthcare centers in southern Uganda, prescribed ART, between 10-16 years, are enrolled in the study. Study participants receive a Wisepill device that monitors participant intake of medication in real-time, using cellular satellite technology. Analyses on average adherence levels of participants are conducted.

Conclusions: We hypothesize that the group receiving the evidence-based economic empowerment intervention will show improved adherence over time, and better overall health outcomes. Wisepill Technology, providing real-time and accurate adherence data, can contribute to our understanding of the economic barriers and facilitators to ART adherence among HIV-positive adolescents in limited-resource settings.



70 The Legal Landscape of HIV Prevention With Persons With HIV in the United States – Essential Considerations for Healthcare Providers

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Introduction: A 2014 guideline from CDC, HRSA, NIH, IAPAC and other organizations recommends that healthcare providers become familiar with benefits and risks of HIV disclosure and encourage disclosure methods that minimize negative consequences for patients and partners.

Description: This guideline highlights three legal issues that influence disclosure of HIV infection. (1) Several states have “duty-to-inform” laws that obligate patients and providers to notify persons exposed to HIV. (2) As of 2011, 33 states had enacted HIV-specific laws that may impose criminal charges for behaviors that result in knowingly exposing others to HIV. Most of these laws can criminalize behaviors that pose high transmission risk (sex, blood and tissue donation) and no/negligible transmission risk (spitting, biting). Most were passed before antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP) were recommended to reduce HIV transmission. Few laws allow use of evidence-based prevention methods (e.g., ART and condoms) as a defense against criminal liability. Studies show that many persons are unaware of these laws and that these laws may not deter risk behaviors. (3) All states have laws that protect the confidentiality of HIV-related information. However, some persons defer HIV testing or ART use if they fear violations of confidentiality that would reveal behaviors that might provoke legal action.

Lessons Learned: Most states have laws about HIV disclosure or criminalization for intentional HIV exposure. Providers who understand these laws are better equipped to fulfill their legal obligations, encourage patient self-disclosure and partner notification, and affirm their patients’ rights and responsibilities.

Recommendations: Providers can learn more about the relevant legal requirements from their state health department and resource materials (<http://www.cdc.gov/hiv/prevention/programs/pwp/resources.html>) and can collaborate with legislators to determine if criminalization laws are consistent with current knowledge about strategies to prevent transmission.

71 A Qualitative Study on Retention in HIV Care for HIV-Infected Foreign-Born Hispanics in Metropolitan Boston

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Background: While foreign-born comprise one-half of the HIV incidence in Hispanics, little is known regarding factors influencing their retention in HIV care. We evaluated barriers to retention in HIV care for this population.

Methodology: We collected qualitative data from 31 HIV-infected Hispanic foreign-born in metropolitan Boston. Individuals were eligible if they were HIV-infected, aged ≥ 18 years, and born in Puerto Rico or other Latin American Spanish-speaking countries. Bilingual research staff assessed barriers to HIV care and health beliefs through semi-structured interviews. Retention in HIV care was defined as self-reported attendance at ≥ 1 routine visit with an HIV provider in the past 6 months or medical record review indicating ≥ 1 HIV visit every 6 months in the 12 months prior to the interview (the latter consistent with national guidelines). We also measured missed routine HIV visits from the medical record.

Results: Half (48%, N = 15) of the cohort either was not retained in HIV care, defined above, or had missed ≥ 1 HIV medical visit in the past year. HIV-related stigma in the Hispanic community was frequently reported as a significant barrier to retention in HIV care by inhibiting disclosure of HIV status. Men who reported sex with men cited strict cultural beliefs in masculinity (machismo) as contributing to HIV-related stigma. Other key barriers to keeping HIV care appointments were mental health-related (e.g. episodes of substance abuse or severe depression) and structural (e.g. transportation costs and inconvenient clinic location or hours). Trust and respect in the HIV provider as well as family support facilitated retention in care.

Conclusions: HIV-infected foreign-born Hispanics in this sample experienced significant barriers to retention in care linked to HIV-related stigma, cultural norms, and logistical constraints in accessing HIV care. These barriers suggest the need for interventions at the level of the individual, health system, and community.



72 HIV Treatment and Mental Health Outcomes of People Living Longer With HIV in the Asia Pacific Region: Lessons for Treatment as Prevention (TasP)

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Background: Effective treatment as prevention (TasP) hinges on treatment access and adherence for viral suppression. To underscore the challenges of TasP and suggest ways forward, this community-based research presents the HIV treatment and mental health outcomes of people living longer with HIV in the Asia-Pacific region.

Methodology: Between November 2013 and February 2014, 360 individuals from 21 countries participated in an online survey via modified snowball sampling. Participants had to be living 10 or more years with HIV, were born and currently lived in the Asia Pacific. To assess the predictors of HIV treatment and mental health outcomes, multivariable logistic regressions were performed back-step by maximizing likelihood ratio.

Results: Participants were aged 18–75. The majority was male (65.5%), heterosexual (72.5%), married (60.4%), had children (63.7%), 10 or more years of education (73.1%), and was working (77.6%). In this cohort only 61% (n = 194) were currently on HIV treatment and of whom 23.8% had previously stopped treatment. 47.1% (n = 89) of those currently on treatment had undetectable viral loads and 56.2% (n = 100) had CD4 counts above 500 cells μL^{-1} . Being currently on treatment was significantly socially determined by having 10 or more years of education (AOR = 7.03), being younger than 35 years (AOR = 2.24), single (AOR = 1.92), and not being female (AOR = .39). 43.3% (n = 78) of participants reported a history of depression. Not currently on treatment (AOR = 2.02) and living the third decade with HIV (AOR = 2.19) were significant predictors of depression. Living the third decade with HIV also significantly predicted previously stopping treatment (AOR = 3.28).

Conclusions: The study highlights the need for equitable treatment access and addressing mental health as key barriers for TasP in this region, and reminds of the challenges inherent in living with HIV.

73 Factors Associated With Adherence to ART Among PLHIV in Seven South Asian Countries

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Background: Adherence to antiretroviral therapy (ART) is a principal determinant of virologic suppression and should be carefully monitored. This study was designed with an objective of understanding issues that People Living with HIV (PLHIV) face as part of different risk-based communities, and to use this information to advocate for improvement of HIV care in Asia and the Pacific region. This paper examines different determinates associated with adherence to ART among PLHIVs.

Methodology: A modified targeted snowball sampling technique was used to enroll 7,843 PLHIV from 56 sites in Bangladesh, Indonesia, Lao, Nepal, Pakistan, Philippines and Vietnam. Semi-structured questionnaires were used to measure self-reported antiretroviral intake behavior with 95% as a cut-off point. Univariate logistic regression was used to assess the association and the significant variables were included in multivariate logistic regression model.

Results: Several of the factors, such as health status, use of illicit drugs, smoking and alcohol use, duration on ARVs, HIV status of spouse and children, ARV regimen change, duration on ARVs, and missing appointment with the health care professional were significantly associated with poor adherence. People living with HIV in Bangladesh, despite late initiation of treatment were good adherers. Social support factors were significant in all countries for better adherence except in Pakistan. Common factor for higher likelihood of poor adherence was being international migrant workers reported for Nepal and the Philippines. In Indonesia if the spouse was HIV-positive then self-reported adherence was poor.

Conclusions: Respondents in the study that were linked to care and had high adherence levels. There is a need of better understanding outlier behavior specific a population of a country to address issues with poor adherence. HIV program should also focus on preparing a PLHIV prior to treatment initiation and incorporating adherence support measures in overall HIV care.



75 Adherence Fails to Predict HIV Viral Suppression in a Home-Based AIDS Care Program in Rural Uganda

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Background: The World Health Organization recommendation for monitoring of HIV viral load is not yet met by many HIV care providers in resource limited settings and alternative approaches to predicting HIV virologic response in such settings are needed.

Methodology: Data for a cohort of 1,158 HIV-infected patients receiving home-based antiretroviral therapy (ART) in rural Uganda were analyzed to assess how well various factors predicted pill count adherence (PCA) of less than 95%, medication possession ratio (MPR) of less than 95%, and HIV viral load ≥ 50 copies per mL at 12 months and 54 months of follow-up. Receiver Operating Characteristic curves were used to determine if adherence as measured by these estimates can be used to discriminate between patients with HIV viral suppression and those where suppression is not present.

Results: The mean group adherence over 54 months measured by PCA was 97.4% and the MPR was 96.9%. There was a downward trend in adherence over time, despite the high level over the five years. There was no difference in adherence between participants who knew only their CD4 cell count and patients who knew both their CD4 cell count and their HIV viral load. Being widowed, having a high Karnofsky Performance score, having no evidence of opportunistic infection and having an initial haemoglobin level above 9g/dl are strongly associated with good adherence. The area under the ROC curve was 0.61; 95% (CI 0.56-0.67), making adherence by PCA a poor predictor of viral suppression.

Conclusion: High levels of adherence with ART can be achieved in rural resource-limited communities in sub-Saharan Africa, even over a prolonged period of care. Better adherence may be achieved and sustained if patients are started on ART early. Adherence with ART, as measured by PCA and MPR failed to discriminate individuals with and without HIV viral suppression.

76 Electronic Systems for Effective Health Programs Monitoring and Sustainable of Quality of Health Care Services in Rwanda: An Example of TRACnet System

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Background: Since 2003, the Government of Rwanda embarked on an ambitious national program to support people living with HIV/AIDS the TRACnet system which is a new form of information technologies aimed at improving the quality of health care services at various health system levels. Since 2003 up to May 2014, PLHIVs on ART are 133,574 adults and children, respectively. Participation of different health partners has been instrumental to make it possible for effective planning, implementation, scale up and monitoring of the HIV/AIDS services successfully. Comprehensive full package Care and treatment services, 2013 VCT sites and 653, 5517 providing only PMTCT services are reported.

Description: The TRACnet system enables national level monitoring and reporting of HIV and integrated services data by telephone/ internet which contribute to effective transmission and tracking of data in real time even from the remotest areas of the country that are hard to reach. All H.C across the country transmit key selected program data on HIV services. Healthcare providers, program managers from central level program staff, policy makers, health partners and funders have the access to the TRACnet data for valuable program planning, monitoring, reporting, feedback and decisions taking: Using the TRACnet data, program supervisors at the primary, secondary and tertiary health care system levels to routinely keep an eye on key program indicators; generate needed reports and graphs; monitor drugs and take quick intervention if needed.

Expansion: The TRACnet system expanded from a single module that captured and maintained only key indicators on patients initiated on ART drugs to including; early infant diagnosis module 2013, indicators were revised and included ART indicators and new voluntary counseling and testing and prevention of mother to child transmission since August 2014. Government of Rwanda in collaboration with its partners is committed to further expand the TRACnet system with new other health program modules in the reporting, monitoring and response of potential epidemic and diseases across the country.

Conclusion: Since the implementation of the TRACnet system, key HIV services programme indicators have been increasingly transmitted and accessed at all health system levels. Data captured in the TRACnet system helped to improve program planning, reporting, monitoring and results based decisions for efficient patient and program management. Decentralization and guided involvement of different health partners and stakeholders are essential to enable implementation and scale up of new health care initiatives. Setting harmonized standards for H.S. tools, accurate, timely reporting, data analysis and information dissemination, feedback to implementers and informed decisions to progressive quality improvements and therefore a basis for real and sustainable health system strengthening.



77 Psychological Distress and Adherence to Anti-Retroviral Therapy Among Ugandan Adolescents Living With HIV

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Background: Psychological distress is common among adolescent living with HIV (ALHIV) worldwide, and has been associated with non-adherence to anti-retroviral therapy (ART), leading to poor virologic suppression, drug resistance, and increased risk for AIDS morbidity and mortality. However, only a few studies have explored the relationship between psychological distress and ART adherence among adolescents in sub-Saharan Africa. The paper examines the relationship between psychological distress and ART adherence, highlighting psychosocial resources that mediate the relationship between psychological distress and ART adherence.

Methodology: A cross-sectional survey of 464 ALHIV (aged 12 – 19; 53% female) seeking HIV care at a large HIV treatment center in Kampala, Uganda was conducted. ALHIV were recruited during routine clinic visits. Adherence was assessed using a self-report on missed pills in the past 3 days; adherence to medical regimen and self-rated adherence using a visual analogue scale (VAS).

Results: In logistic regression analyses adjusting for respondents' socio-demographic characteristics and psychosocial resources, psychological distress was associated with greater odds of non-adherence for missed pills (OR = 1.75; CI: 1.04 – 2.95), following medical regimen (OR = 1.63; CI: 1.08 – 2.46), and VAS (OR = 1.79; CI: 1.19 – 2.69) respectively.

Conclusion: Study findings underscore the need to strengthen psychosocial aspects of adolescent HIV care. Interventions to identify and address psychological distress are particularly needed.

78 New Recommendations for HIV Prevention With Persons With HIV: A Tour of Implementation Resources for Clinicians in the United States

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Introduction: In December 2014, the U.S. Centers for Disease Control and Prevention (CDC), the Health Resources and Services Administration (HRSA), the National Institutes of Health (NIH), the International Association of Providers of AIDS Care (IAPAC), and four other nongovernmental organizations issued comprehensive, evidence-based recommendations about HIV prevention with persons with HIV in the United States. The guideline includes many recommendations for clinicians to promote early and regular HIV care, early antiretroviral treatment (ART), adherence support, and other interventions that reduce their patients' risk of transmitting HIV to others.

Description: CDC, HRSA, IAPAC, and other organizations have disseminated many free or low-cost resources for clinicians that encourage prompt and regular HIV care and high ART adherence. These include patient and provider fact sheets, brochures, posters, and audiovisual materials, clinician talking points, tools to track retention in care and ART adherence measures using electronic medical records, methods to bill for retention and adherence support, sample agreements and contracts to engage linkage and retention support from nonclinical providers, and examples of staffing models that promote regular HIV care and high ART adherence.

Lessons Learned: We believe that wide range of resources can help clinicians implement these new recommendations in public- and private-sector settings. Most focus on patient education, clinician skill building, expanding the scope of clinical services, and new collaborations with nonclinical providers.

Recommendations: Clinicians who are familiar with these resources are better equipped to implement these new recommendations, offer high quality care, and serve as well-informed practice leaders that will help prevent new HIV infections.



79 Breaking Chains of Transmission: Adapting Emerging Technologies for HIV and STD Partner Services in the U.S.

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Introduction: Partner services, the process of identifying and notifying partners of possible HIV and STD exposure, is critical for reducing transmission. However, many healthcare providers do not advise patients obtain health department (HD) partner notification assistance, inform patients about effective strategies to self-notify partners, or directly serve partners.

Description: In many states, electronic reporting of cases of highly infectious, acute HIV infection and integrating or matching HIV and STD surveillance data now allow HDs to expedite interviewing of patients with acute HIV infection or STD co-infection who are at high risk for transmission. New staffing models post (or assign "on-call" duty) HD partner services specialists in high-volume HIV testing sites, STD clinics, and HIV clinics to expedite interviewing of persons with HIV or STD. Some HDs use web-sites, chat rooms, texts, social media, and smart-device apps to contact infected persons, partners, and their social networks. HDs have collaborated with HIV and STD testing providers to reach users of new technologies, including MSM, youth, and persons who find partners through electronic media, and to disseminate information about pre-exposure prophylaxis for HIV-uninfected persons. Recent federal guidelines have advised HDs to consider novel partner services methods to complement traditional strategies.

Lessons Learned: New electronic technologies have the potential to be more effective, efficient, acceptable, and cost-effective for persons with HIV and STD, particularly those who use web and mobile applications to communicate or find partners. Some methods have been shown to improve partner services outcomes, but more training and evaluation are needed to elucidate strengths and weaknesses of various methods.

Recommendations: HDs and HIV and STD testing providers should explore new partner services methods to speed notification of more partners; screening for HIV, syphilis, gonorrhea, and hepatitis; and referrals to other medical and social services.

80 Development and Application of a Novel Measure of Access to HIV Care in Atlanta, Georgia

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Background: Most existing measures of access to HIV care do not consider both spatial proximity and provider-related characteristics in a single measure. Characteristics influencing choice of provider may vary by factors related to travel mode, such as poverty. We developed and applied a tool to comprehensively quantify access to services (supply) and identify underserved areas with respect to HIV cases (demand), by mode of travel, in Atlanta.

Methods: We compiled major HIV primary care providers from multiple resources, and collected information on available provider-hours, patient eligibility, and services offered from each provider. We obtained HIV case counts by zip code from AIDSVu.org. We used data from an existing dataset on HIV care engagement in a discrete choice model to estimate (1) which characteristics are important in defining access, and (2) the weight of each variable. Characteristics used in the model include: travel distance, number of available provider hours, availability of ancillary services, and whether Ryan White CARE patients were accepted. Supply of services was conceptualized separately for two modes of travel: by car and by public transportation. Scores were calculated for each zip code, and underserved areas, defined as having low supply (lowest two quintiles) and high HIV case count (highest two quintiles), were identified for each travel mode.

Results: Supply was higher in urban versus suburban/rural areas for both travel modes, with lower overall scores if traveling by public transportation. Underserved areas were identified in urban areas in south and east Atlanta if traveling by public transportation, which coincided with many areas of high poverty. Approximately 1.8%, if traveling by car, and 52.5%, if traveling by public transportation, of HIV cases live in underserved areas.

Conclusion: Conceptualizing access spatially and by travel mode may be useful in bridging mismatches between patient needs and service availability, and improving HIV care engagement and clinical outcomes.



81 Missed Medical Visits Predict Virologic Failure in a Peruvian MSM Population in a Community HIV Clinic

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Background: Retention in HIV care is crucial to achieving good clinical outcomes, yet there is scant data on retention in care of Latin American MSM populations. The purpose of this study was to determine the relation between missed medical visits (MMV) and virologic failure (VF) in MSM patients starting HAART at a community based clinic in Lima, Peru.

Methodology: We reviewed medical records of MSM patients who started HAART between November 2010 and December 2012 at IMPACTA, a community-based clinic in Lima. VF was defined as viral load >400 occurring at least 6 months post-HAART initiation. Three measures of MMV were defined: 1) visit constancy (VC), i.e. the percentage of trimesters in which patients attended at least one visit, 2) missed visits (MV), i.e. the average number of missed visits per year and 3) appointment adherence (AA), i.e. the percentage of scheduled visits the patient attended. Multivariable logistic regression was used to evaluate the association between these parameters and VF in the context of baseline socio-demographic and clinical factors.

Results: Two hundred and eighty-six patients started HAART during the study period. Forty did not meet study criteria. Of the remaining 246, 45 (18.3%) experienced VF. Multivariate logistic regression showed statistically significant associations between all three retention parameters and VF ($p = .003$, $.001$, and $.013$ for MV, AA, and VC, respectively). Younger age and lack of high school education were independently associated with VF ($p = .020$ and $.002$, respectively).

Conclusions: All three measures of MMV were associated with virologic failure in a MSM population from Lima, Peru. Interventions aimed at improving medical visit attendance could help prevent virologic failure and should be directed especially at young and uneducated patients.

82 A Comparison of Antiretroviral Therapy and Prophylaxis Adherence for the Prevention of Mother-to-Child Transmission in an Urban Zambian Health Center

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Background: Prevention of mother-to-child transmission of HIV (PMTCT) is almost entirely preventable though the use of antiretroviral (ARV) drugs. However, the success of PMTCT programs depends critically on HIV-positive pregnant and breastfeeding women's adherence to ARV medication. Countries with a high HIV prevalence, such as Zambia, should take into consideration which regimens maximize adherence when deciding on PMTCT programs in the future. This clinic-based survey compares adherence to ARV medication between two different PMTCT regimens under Option A in Lusaka, Zambia.

Methodology: Data were collected through a face-to-face clinic based-survey with HIV-positive mothers at a large urban public health center. Bivariate and multivariate models determined significant differences in the odds of adhering to ARV medication between HIV-positive mothers on antiretroviral therapy (ART) and on ARV prophylaxis during pregnancy and postpartum.

Results: Levels of adherence to ARV medication in this study were sub-optimal. There were significant differences in the odds of being adherent between mothers on the ART and on the ARV prophylaxis regimens. Mothers on ART had greater odds of adherence to all medication than mothers on ARV prophylaxis. These relationships remained significant after adjusting for a number of possible confounding factors. This supports the move towards Option B+ in Zambia where all HIV-positive pregnant and breastfeeding women will initiate ART.

Conclusion: Option B+ may help to improve PMTCT medication adherence because the ART regimen is easier to follow than the ARV prophylaxis regimen under Option A. High quality counseling, however, will be vital under Option B+ in Zambia and elsewhere for HIV-positive pregnant and breastfeeding women who are not yet symptomatic, but are required to take ART daily for the rest of their lives.



84 Cost-Effectiveness of Nurse-Initiated Rapid HIV Testing at High-Prevalence Primary Care Sites Within the US Veterans Affairs Health Care System

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Background: Despite national guidelines for routine voluntary HIV testing of adults and adolescents, HIV testing rates are low. We sought to examine the costs and benefits of nurse-initiated rapid HIV strategies to improve HIV testing and receipt of results.

Methodology: Cost-effectiveness analysis based on a Markov model. Prevalence and acceptance of testing based on two implementation studies (8,265 and 27,771 patients) within the US Veterans Affairs Health Care System. Return rates and related costs were derived from a previous randomized trial of 251 patients. Long-term costs and health outcomes were derived from the literature. We evaluated two interventions models for HIV counseling and testing: Model A = traditional HIV counseling and testing; Model B = nurse-initiated routine screening with rapid HIV testing and streamlined counseling.

Results: At site 1, 2,364 (28.6%) patients received a rapid test during the intervention period as compared to only 101 (1.2%) patients during the 6-month pre-intervention period. At site 2, 2,522 (9.1%) patients received a rapid test during the 4-month intervention period as compared to only 10 (0.04%) patients tested during the 4-month pre-intervention period. When we included the benefit from reduced HIV transmission, Model B cost \$26,965/ Quality Adjusted Life Years (QALYs) relative to Model A. When we included the benefit from reduced HIV transmission, Model B cost \$30,911/QALY relative to Model A. The favorable cost effectiveness of Model B was robust in sensitivity analyses in both sites.

Conclusions: Current CDC guidelines recommend routine screening in all healthcare settings. How best to implement routine screening however is uncertain. In two primary-care populations within the US VA Health Care system, nurse-initiated routine screening with rapid HIV testing and streamlined counseling increased rates of testing and was cost-effective compared with traditional HIV testing strategies.

85 Factors Affecting Adherence to Antiretroviral Therapy (ART) in Patients Attending a Government ART Centre in India

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Background: An important factor to effectiveness of ART is good adherence to treatment. Poor adherence leads to immunological and virological failure and subsequently leads to treatment failure. Increased access to ART in low-income country settings has contributed to an interest in treatment adherence in resource-poor contexts. This study aims to investigate the adherence level to ART and identify possible factors related to non-adherence to ART among people living with HIV (PLHIV) attending a Government ART centre in India.

Methodology: A cross sectional study was done among 1,000 adult PLHIV receiving ART from a Government ART centre in Anakapalli, Andrapradesh, India. Out of nearly 4,500 patients on ART we selected 1,000 patients by simple random sampling technique. Study was done during the period from September 2012 to August 2013. The average of adherence for a period of 2 years (2010 & 2011), socio demographic details, CD4 counts, WHO clinical staging and opportunistic infection details were also taken from the patients ART treatment card. Chi square test was performed to find out significant difference between the socio-demographic variables and clinical categories on adherence level <95%.

Results: Of a total of 1,000 patients, 53.9% were male. 42.2% were in age group 31 to 40 years. 50.1% had adherence > 95%. Reasons for adherence levels < 95% were being male (54.9%) ($p = 0.01$), illiterate (55.7%) ($p = 0.0001$), travel distance to ART from home is greater than 50 kilometres (63.1%) ($p = 0.0001$), people who are employed (52.9%) ($p = 0.006$), smokers (57.3%) ($p = 0.0001$) and alcohol consumption (57.3%) ($p = 0.001$).

Conclusions: Decentralisation of ART centres there by providing ART at all district and taluk level Government hospitals can minimize the travel distance to ART centres. Improving the literacy level of PLHIV and counselling regarding cessation of smoking and alcohol consumption to be intensified during counselling sessions.



86 Challenges Navigating Evolving PMTCT Strategies Among Women Living With HIV in Rural Uganda

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Background: In 2012, Uganda adopted the Option B+ strategy for preventing mother to child transmission (PMTCT) of HIV whereby pregnant HIV-positive women initiate antiretroviral therapy (ART) for life. National guidelines recommend breastfeeding for up to 6 months with maternal ART and nevirapine prophylaxis for infants. How women understand and navigate evolving PMTCT guidelines remains unclear.

Methodology: We conducted in-depth interviews with HIV-positive women with pregnancy in the past 2 years, sampled from an on-going HIV cohort study in Uganda (February-August 2014). Interview guides explored conception, pregnancy, and postpartum experiences. Content analysis of transcribed and translated interviews was conducted using NVIVO software.

Results: Twenty women were interviewed: median age 33 (IQR: 28,35), last CD4 cell count 677 cells/mm³ (IQR: 440-767), 2.3 years on ART (IQR: 1.5-5.1), and 95% were virally suppressed (<400 copies/mL). Most women had more than one pregnancy since being diagnosed with HIV. Women described struggles understanding and adhering to evolving PMTCT practices. Personal and community experiences were more compelling than advice from healthcare professionals. For example, women who knew a child infected during breastfeeding were reluctant to breastfeed, even while on ART. Women described negative and confusing provider experiences such as being scolded for being HIV-infected and pregnant, priming them to distrust novel information delivered by providers. Difficulties complying with maternal and child clinic visits as part of Option B+ were described, due to structural barriers including transportation costs, absent partner support, and the stigma of accessing PMTCT services.

Conclusions: HIV-positive women express confusion and concern about changing recommendations to reduce perinatal transmission. Effectively communicating the rationale for evolving strategies, reducing structural barriers to care, and working with providers to reduce stigma for women accessing PMTCT care is critical to maximizing uptake of recommendations, minimizing loss to follow-up, reducing perinatal transmission of HIV, and maximizing maternal-child health.

88 HIV Prevention Behaviours Among Men Who Have Sex With Men (MSM) in Kano Metropolis North West Nigeria

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Background: HIV prevalence among men who have sex with men (MSM) in Kano State is about 8.3 which is higher than the State prevalence of 1.3 considering the sexual risk behavior, the mobile nature of the MSM and HIV knowledge. The aim of this is to evaluate the association of peer education plus on the behavior of MSM in accessing HIV Counseling and Testing services in the public health facilities in Kano State.

Methodology: About 2,565 MSM were reached from 2013 (May) to 2014 (July), by using the monitoring data on sexual risk behavior from structured prevention intervention tracking tools (PITT), Referral and HIV Client Intake form were used to analyzed the HCT uptake and behavior change among the MSM in Kano Metropolis.

Result: Using Peer Education Plus (PEP) model we had community mobilization where the peers refer their peers for Peer Session (PES) from which key opinion leaders were selected amongst peers as educators for PES and to refer peers to health care centers for treatment. Mobile HCT was conducted by trained counselor & testers. About 2,052 (80%) were referred for HCT/STI treatment with 20% prevalence rate and 8065 pieces of condoms distributed. The mid ages of the peers is 25 years old, most of them were secondary school and diploma students and few were into skilled work. After the intervention there was behavior change among the target groups, they see the importance of knowing their status, use of condoms, avoid multiple sex partners.

Conclusion: Previously MSM were unaware that unprotected anal intercourse carried a higher risk of transmission and that MSM had higher prevalence than the general population. In Kano, only 6.7% reported inconsistent condom use because they can't be seen in public buying condoms, they enjoy sex without condoms; their partners pay more without condoms. With the PEP model they understand that their healthy lives and safety is important to Maintaining the behavior change through follow up, strengthening the prevention strategies and complete HCT referrals. Condoms and lubricants would be placed at special spots for confidential and convenient access.



89 Interactive Online Resource to Visualize Geographic Patterns in the HIV Care Continuum in 5 Major US Cities

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Introduction: Online tools are robust for mapping illness data, and allow for insights that are not possible with aggregate or static figures. These resources can be instrumental in targeting areas that need more/better healthcare and public health resources. Mapping HIV cases at multiple geographic levels in the US has been done for a number of years, but until now no interactive maps have ever been created for HIV care outcomes.

Description: HIVContinuum.org was launched in February 2015 and is a free online resource for visualizing HIV care continuum outcomes in 5 US cities heavily impacted by HIV - Atlanta, Chicago, New Orleans, Philadelphia, and Washington, DC. HIVContinuum uses disease surveillance data from public health agencies to map HIV diagnoses, late diagnoses, linkage to care, engagement in care and viral suppression. Users can view maps by race/ethnicity, sex and age. HIVContinuum also has overlays of the most current information on HIV testing locations and Ryan White Care Act clinics.

Lessons Learned: HIVContinuum allows users to visualize care continuum outcomes with substantial geographic and sub-population detail. Even within our most heavily impacted cities there are micro-epidemics in which some areas experience higher rates of new HIV diagnoses than others, but we can now also see similar patterns in worse care continuum outcomes. Testing and treatment location mapping may help us understand how care outcomes may compare to the distribution of these resources in the city.

Recommendations: HIV care providers, public health agencies and policy makers should consider how mapping of HIV care continuum outcomes can be used in our collective response to the epidemic. Further exploration of how care outcomes differ for sub-populations in different areas of these cities may help us resolve some of the pervasive disparities in care outcomes.

90 Implementation of a Randomized Study of Short-Term Food and Cash Assistance to Improve Adherence to Antiretroviral Therapy Among Food Insecure HIV-Infected Adults in Tanzania

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Introduction: Food insecurity (FI) is a barrier to antiretroviral therapy (ART) adherence and retention in care. However, there is a paucity of evidence about which supportive strategies are feasible, acceptable, and effective at reducing FI and strengthening the HIV care continuum.

Description: We analyzed baseline data from a randomized study of three short-term support strategies for adults with HIV infection in Shinyanga, Tanzania: nutrition assessment and counseling (NAC), NAC plus food assistance, and NAC plus cash transfers. Eligible participants are ≥ 18 years, initiated ART ≤ 90 days prior, and food insecure, determined with the Household Hunger Scale. Participants in the food and cash transfer arms receive monthly assistance for ≤ 6 consecutive months, conditional on monthly visits with the HIV care provider. The primary outcome is ART adherence measured with the medication possession ratio and viral load at 6 and 12 months.

Lessons Learned: Of 644 patients screened, 577 (90.2%) reported FI: 325 (50.8%) were moderately FI and 252 (39.4%) were severely FI. To date, 589 participants have enrolled, comprising 75% of the enrollment goal (response rate = 99%). Overall, 57% are female, average age is 37 years, and mean body mass index (BMI) is 20.8; 19% are underweight (BMI < 18.5 kg/m²). In the cash transfer group, 71% of participants provided a phone number at baseline for mobile money transfer and nearly all provided a mobile number by their first transfer. Off-site distribution of food baskets was acceptable but distribution costs are higher than for cash transfers.

Recommendations: We found alarming levels of food insecurity among ART initiates in northwestern Tanzania. Cash and food transfers linked to HIV care are feasible and acceptable. At the study's conclusion (early 2016), we will understand the relative effect of NAC plus food or cash when provided during the critical period when treatment and care routines are first established.



91 HIV-1 Viral Suppression and Adherence to ART During Periconception, Pregnancy, and Postpartum Follow-Up in Uganda

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Background: HIV-infected women risk transmission to partners and infants during periconception, pregnancy, and postpartum. We compared HIV viral suppression and antiretroviral therapy (ART) adherence across each period to estimate HIV transmission risks among HIV-infected women receiving ART in Uganda.

Methodology: Women (18-49 years) with self-reported pregnancy between 2005-2011 and enrolled in the Uganda AIDS Rural Treatment Outcomes cohort study of individuals initiating ART were included. Blood-work and questionnaires were completed quarterly. Follow-up periods included: 'Periconception' defined as 3 quarters preceding pregnancy, 'Pregnancy' defined as first report of pregnancy until report of outcome, 'Postpartum' defined as 2 quarters following livebirth, and 'Non-pregnancy-related' (reference period) defined as 1 quarter after ART initiation and/or inter-pregnancy. ART adherence was measured using electronic pill caps. Multivariable logistic regression estimated adjusted odds of viral suppression (<400 copies/mL) in each period. Logistic and Poisson regression evaluated likelihood of <80% adherence and 72 hour medication gaps/90 days, respectively, across periods.

Results: 111 women with pregnancy contributed 486 person-years of follow-up; median age was 29 years, median CD4 was 165 cells/mm³, and 43% reported an uninfected or unknown-status partner. Viral suppression was present at 90% of non-pregnant, 97% of periconception, 93% of pregnancy, and 89% of postpartum visits. Suppression was significantly more likely during periconception (aOR 2.15, 95% CI: 1.33-3.49). Median adherence was 92% (IQR 79-98%), 93% (84-98%), 94% (76-98%), and 88% (67-97%) during non-pregnant, periconception, pregnancy and postpartum periods. Mean adherence <80% was less likely during periconception (aRR 0.69, 95%CI 0.51 – 0.95) whereas frequency of 72 hour gaps/90days was higher postpartum (aRR 1.32, 95% CI 1.07-1.63).

Conclusions: Women with pregnancy were virologically suppressed at most visits, suggesting low HIV transmission risk. Higher risks of postpartum adherence gaps underscores the need for targeted adherence support during postpartum periods, even among women initiating ART for their own health.

92 Adherence to Antiretroviral Therapy in HIV-Infected Paediatric Patients in Kuala Lumpur Hospital, Malaysia

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Background: Understanding paediatric antiretroviral therapy (ART) adherence is essential in management of Human Immunodeficiency Virus (HIV) patients and viral load suppression. Adherence to ART and its possible affecting factors in HIV-infected children were assessed in this study.

Methodology: A prospective, observational study was carried out in Paediatric Institute Kuala Lumpur Hospital between April 2013 and January 2015. Patients aged between six and eighteen years were recruited during their clinic visits. Same subjects were assessed based on 3 monthly visits for both pre- (baseline) and post-introduction (treatment) of 'Medication Adherence Toolkits' ("MATs"), respectively. Pill count, self-logged diary and questionnaire interview were administered to the patients who are currently on pill treatment only. All the data analyses were performed using statistical software, SPSS v19.0.

Results: Of 49 patients recruited, 36 have completed the treatment study. The mean age was 11.7 ± 2.8 years and 53% of the cohort were female. A multiple regression model was performed on 40 patients from the baseline visits to assess the impact of gender, age, and ethnicity on the adherence rate. It was found that the female patients generally have 4.9% higher adherence rate compared to the male (p<0.05). No significant difference in adherence rates was found between different caregivers, including biological, extended, adoptive, foster parents, and welfare centers (p = 0.453). Other possible factors affecting adherence were forgetfulness (60.6%), poor psychosocial support (51.5%), ART burden (45.5%), disbelief in ART (18.2%) and inaccessibility to ART (18.2%). None had reported that side effects of ART affected their adherence. The introduction of MATs showed improvement of adherence rate in pill count (median of 92% vs 98%; p = 0.154).

Conclusions: Adherence to ART in this population has achieved 98%, which is higher than National AIDS Manual, United Kingdom recommendation (95% of the prescribed dose).



93 Factors Related to Incomplete Adherence to Antiretroviral Therapy (ART) Among Adolescents Attending 3 HIV Clinics in Zambia

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Background: Worldwide, HIV-related mortality among adolescents living with HIV (ALHIV) increased by 50% from 2005 to 2012, attributed in part to incomplete ART adherence in this population.

Methodology: We conducted a cross-sectional study in 2012-2013 among ALHIV (15-19 years) attending three HIV clinics in Zambia. Participants' self-report of missing >48 consecutive hours of ART in the past three months, and six month pharmacy medication pill ratio (MPR) data, were used to estimate adherence. Multivariate regression analysis assessed associations of individual (e.g., alcohol use), home environment (e.g., everyone knows the youth's status), and HIV self-management characteristics (e.g., attends clinic alone) with incomplete adherence using both adherence outcome measures.

Results: A total of 309 eligible participants completed an interview, representing 84.7% of ALHIV ages 15-19 enrolled in HIV care in the study sites. Of these, 285 were on ART at least three months prior to the interview and had complete data; 51.9% were female, 77.5% were in-school, and 77.9% self-reported perinatal infection. Being male (OR 1.92, 95% CI 1.045-3.54), not everyone at home aware of the youth's status (OR 2.44, 95% CI 1.25-4.77), and alcohol use in the past month (OR 2.58, 95% CI 1.16-5.78) were significantly associated with missing ≥48 consecutive hours of ART. Factors significantly associated with having a pharmacy MPR <90% (analysis n = 239) include being in-school (OR 2.21, 95% CI 1.19-4.35), attending the clinic alone (OR 2.90, 95% CI 1.57-5.34), and alcohol use in the past month (OR 2.71, 95% CI 1.09-6.75).

Conclusions: Results highlight the importance of alcohol for both adherence outcomes and how youth who lived in homes with complete disclosure were less likely to miss >48hrs of ART. These findings support strengthening programs to address adolescents' HIV self-management skills with a focus on alcohol use, family engagement, and the challenges school-going youth experience with pharmacy refills.

94 Improving Health Outcomes With Home-Based Personal Fitness Coaching in African American Youth Living With HIV

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Background: African Americans have higher rates of many of diseases that can be prevented with physical activity (PA). PA can improve the immune system and cardiovascular risk of youth with HIV. Adherence rates among youth living with HIV are inadequate to effectively manage the disease. Although PA is important to positive health outcomes for youth living with HIV, it has not been effectively combined with adherence interventions. This study examined the feasibility and acceptability of FLEX, a home-based PA program integrated with Motivational Interviewing (MI) that also targets HIV medication and appointment adherence.

Methodology: A focus group was conducted with 10 African American youth and young adults living with HIV (ages 19 to 27; 80% male). Results suggested unanimous interest in PA, with home-based services viewed as convenient and acceptable. Resistance training was preferred to yoga. Youth were recruited from the local youth HIV clinic. Eligibility included HIV-positive, age 16 to 24, and suboptimal adherence and PA. Fifteen eligible participants were consented. FLEX consisted of an initial MI session followed by motivational PA (high intensity interval training and resistance workout) and adherence goal setting using a tapered design. The initial program was 3-months, 24 sessions (N = 12). High program satisfaction, as well as a strong desire to continue the program beyond 3 months, resulted in the development of a 6-month program (N = 3). Both programs encouraged adding independent PA, and taught youth to self-monitor PA and medication adherence. Fitness assessments were completed at baseline and 3 months.

Results: For the 3-month program (24 sessions), 18 sessions (76%) were completed. Preliminary findings from suggest improvements at 3 months in strength assessments, and reductions or maintenance of BMI. Health outcomes and adherence data will be presented. Data from 6-month program (40 sessions) will also be presented.

Conclusions: Pending. High program satisfaction was reported.



95 Time Between HIV/AIDS Diagnosis During Hospitalization and ART Initiation at a Large Public Hospital in the U.S. Southeast

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Background: Prompt antiretroviral therapy (ART) initiation after AIDS diagnosis may delay disease progression and death. However, ART initiation after diagnosis during hospitalization is sometimes deferred until patients establish outpatient care. We aimed to characterize patient- and systems-level factors associated with inpatient ART initiation.

Methodology: Data were retrospectively collected from charts of patients newly diagnosed with AIDS at Grady Hospital in Atlanta, GA from January 2011 through December 2012. Patients admitted with tuberculosis or cryptococcal meningitis were excluded. Host-level data, such as substance abuse and homelessness, and systems-level variables, including admission service, and social work visitation were collected. Variables with univariate significance level <0.10 were included in logistic regression models with forward selection. Models were used to estimate odds ratios for ART initiation prior to discharge. Electronic records for one year after diagnosis hospitalization were reviewed to determine date of deferred ART.

Results: Eighty-one patients were eligible for analysis: 81% men, 80% black, 75% uninsured, 29% substance abuse, 16% homeless, 11% co-morbid mental illness. Median hospital stay was 9 days (IQR 5, 17). ART was initiated in 67 persons (83%) within one year of hospitalization, with median time to ART from diagnosis of 48 days (IQR 18, 77). In 10 patients (12%) ART was initiated prior to discharge. In multivariable analysis, hospitalization duration was associated with inpatient ART (OR 1.14, 95% CI 1.04, 1.25), with inpatients who started ART prior to discharge having longer stays (median 24 days; IQR 20, 36) compared to those who did not (median 8 days; IQR 5, 13).

Conclusions: The only variable associated with ART initiation during hospitalization was longer hospital stay. Reasons for this association should be prospectively evaluated, and may have implications for larger policy decisions.

96 Opinions and Prescriptions Towards Pill Box, Medication Box and Pill Diary in HIV-Infected Pediatric Patients in Kuala Lumpur Hospital, Malaysia

Suk Yen Chin (presenting)¹, Kuan Chau Yap¹, Nur Syazwani Zahari¹, Jing Wen Tan¹, Suk Yen Chin¹, Thahira Jamal Mohamed¹, Kamarul Azahar Mohd Razali¹

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Background: Pill box, medication box and pill diary are adherence tools in improving adherence of antiretroviral therapy (ART) in Human Immunodeficiency Virus (HIV) patients. This study aimed to assess opinions and perceptions towards pill box, medication box and pill diary in HIV-infected children.

Methodology: A prospective, observational study was carried out at outpatient setting in Paediatric Institute Kuala Lumpur Hospital between August 2014 and January 2015. 'Medication Adherence Toolkits' (MATs) (7-days AM/PM pill box, medication box with medication dosing chart (MDC) and pill diary) were introduced to the patients aged between six and eighteen years who are currently on pill treatment only. A questionnaire was administered to patients to assess their opinions and perceptions towards MATs. Statistical software, SPSS version 19.0 was used for data analysis.

Results: A total of 36 patients were included in the analysis. Almost 17% of patients found troublesome filling up the pill box every week. However, all the patients still prefer to bring the pill box rather than original bottle(s) of medications during traveling or outing. For medication box, up to 86% of patients found that MDC could reduce medication administration error. Nearly 20% of patients found the size of medication box is inconvenient to bring along to pharmacy during medication refilling. In addition, there were 78% of patients found pill diary is useful to them. However, about 34% of them found troublesome filling up the pill diary. Overall, patients' satisfactions toward pill box were 97%, followed by medication box (89%) and pill diary (78%). The results were remarkable on the continuation of using pill box (100%) and medication box (92%) in the future, respectively but not to pill diary (53%).

Conclusions: Majority of patients preferred the introduction of 7-days AM/PM pill box and medication box with MDC but not preferable over pill diary.



97 A Smartphone-Based Online Support Group for People Living With HIV

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Background: People living with HIV (PLWH) often have unmet needs for support and information. Online support groups (OSGs) have the potential to overcome barriers to meeting these needs. Our study analyzes an innovative OSG delivered through a community message board (CMB) within a clinic-affiliated Smartphone application (Positive Links, PL).

Methodology: For this pilot study, 38 HIV-infected patients were recruited through provider referrals. Participants received cell phones with the PL application that included the opportunity to interact with other users on a CMB. Logistic regressions investigated associations between participant characteristics and posting on the CMB. CMB messages were analyzed qualitatively using a Grounded Theory approach.

Results: 24 participants posted to the CMB; 14 did not. Participants had lower odds of posting if they were white [OR 0.20 (0.05-0.84), $p = 0.028$] and had private insurance [OR 0.07 (0.01-0.41), $p = 0.003$]. Participants had higher odds of posting if they had unsuppressed viral loads [OR 5.13 (1.13-23.30), $p = 0.034$]. Of the 840 CMB messages over 8 months, 62% had psychosocial content, followed by community chat (29%), and biomedical content (10%). Of psychosocial content, posts frequently described stressors and coping strategies. Of community chat content, greetings were most common and included messages welcoming new members. Of biomedical content, most posts discussed medications, the importance of adherence and support for others having difficulty.

Conclusions: This CMB on a clinic-affiliated mobile app may reach vulnerable populations, including racial/ethnic minorities and those of lower socio-economic status, and potentially provide psychosocial support to PLWH. Participants who posted on the CMB expressed support for each other, appreciation for the community, and a perception that the app played a positive role in their struggles with HIV. Next steps will include investigation of possible benefits from the app in improving social support, linkage and retention in HIV care, and health outcomes for PLWH.

98 Knowledge and Perception Surrounding Human Immunodeficiency Virus and its Testing in the South Asian American Population

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Background: According to the Centers for Disease Control and Prevention, Human Immunodeficiency Virus (HIV) testing rates are significantly low among Asians. We examined the beliefs, attitudes, knowledge, and barriers related to HIV testing among South Asian (SA) Americans.

Methodology: A survey about HIV knowledge, perception, and testing practices was administered among SA adults residing in central New Jersey, identified at health fairs and community organizations. Comparisons were made between those ever tested for HIV versus those who had not.

Results: A total of 533 surveys were administered. Approximately half (52.5%) of the participants were age ≤ 46 with even gender distribution. The majority were born in South Asia (84.1%), had at least a college degree (76.2%), and spoke fluently in English (79.2%). One-fifth (21.4%, $n = 114$) of participants were ever tested for HIV whereas 72.0% ($n = 384$) were not. Those who were tested were more likely to be younger, fluent English speakers, have higher education, knew someone with HIV, received doctor recommendation for HIV testing (40.0% vs 5.2%), and talked to their partner about HIV (59.7% vs 25.3%). They were also more likely to believe HIV is a manageable chronic disease (59.5% vs 38.8%) and one can lead a healthy, productive life with HIV (84.1% vs 57.6%); and less likely to believe that HIV spreads by sharing a drinking glass (6.2% vs 13.2%) and by touching a toilet seat (4.4% vs 18.6%), all $p < 0.05$.

Conclusions: This is the first study of its scale to examine knowledge and attitudes towards HIV testing in the SA American population. The frequency of HIV testing was considerably low in this community and was strongly influenced by inaccurate perceptions and knowledge about HIV and lack of physician recommendation. Educational efforts particularly targeted towards the SA community are essential to increase their understanding and utilization of HIV testing.



99 Sexual Risk and HIV Prevention Behaviors Among Men Who Have Sex With Men (MSM) in Zaria City, Kaduna State, North Central, Nigeria, West Africa

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Background: HIV prevalence among men who have sex with men (MSM) in Kaduna state is about 17.2% higher than the state prevalence of 9.2%. Considering the fear of the passed Anti-Same Sex Bill, this study aims at evaluating the effect of Behavior Change Communication component of National Action Committee of AIDs approved Peer Education Plus manual on the behavior of MSM in assessing HIV/ STI counseling, testing and treatment in the MSM community approved US Department of Defense, Walter Reeds Foundation Clinic in Kaduna state.

Methodology: Inter Personal Communication IPC using the combination prevention method of Structural, Behavioral and Biomedical approach was used to reach 864 MSM in Zaria city from November 2013 to October 2014 using Prevention Intervention Tracking Tool (PITT), Referral Forms, Client Intake Forms, Condom Forecast Forms to analyze HCT uptake and Behavior Change Maintenance.

Result: Out of 835 MSM referred, 713 successfully assessed HCT/ STI treatment with about 45% prevalence rate. Average ages of peers is 20 years old made up of secondary school, polytechnic and university students and some were of skilled and unskilled casual workers. 30% of the 713 MSM treated were male sex workers who reported inconsistent use of condoms due to high paying clients, while 40% of same populations are bisexual and reported they enjoy anal sex without condoms, while they use condoms for vaginal sex.

Conclusions: Most MSM previously were unaware of the higher risk of unprotected anal sex. 10,020 condoms and 3,340 lubricants were distributed. PEP manual was effective for sustaining desire for safer sex and HCT, with PEP manual, they understood they could live a healthier life by avoiding risky behaviors of multiple partnering, alcohol and drugs and to sustain referrals and treatment.



100 Medication Taking Practices of Patients on Antiretroviral HIV Therapy: Intentionality, Power and Control

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Background: Among people living with HIV (PLWH), adherence to antiretroviral therapy (ART) is crucial for health. Patients face numerous adherence challenges in the context of HIV as a life-long condition.

Methodology: From February to July 2012, we conducted six recorded focus groups with 56 PLWH regarding ART adherence barriers and facilitators. We also collected sociodemographic characteristics and ART histories. Participants were recruited through clinics and AIDS service organizations in three North Carolina regions. Dedoose software was used to identify themes across the focus group transcripts.

Results: Participants were 59% male, 77% Black, aged 23 to 67 years, and living with HIV 4 to 20 years. Discussions reflected the fluid, complex nature of adherence. Participants described processes of learning how to take ART, and phases of taking and not taking medications through which they described experiencing numerous power struggles. Maintaining optimal adherence required participants to indefinitely assert consistent control across multiple areas including with: 1) their HIV disease, 2) their own bodies, 3) health care providers, and 4) social systems including the criminal justice system, hospitals, and drug assistance programs. Across these areas, participants described limits to their personal control and subsequent ability to take ART as prescribed. In instances where participants felt more in-control, choosing how to take ART was not always exclusively a decision about best treating one's HIV. Instead, these decisions became ways participants felt they could regain some amount of control in their lives. Supportive provider relationships assuaged these struggles, while perceived side-effects and multiple comorbidities further complicated adherence.

Conclusions: Intervention messaging could better convey adherence as a continuous and changing process, not a fixed state. A perspective shift among providers and practitioners could help address perceived power struggles and pressures that drive patients to exert control via medication taking practices.



101 Epic Allies: Fight Bad Guys, Remember Your Meds, Save the World

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Background: After diagnosis, many HIV-positive YMSM delay entering medical care, and do not optimally adhere to antiretroviral therapy (ART) or achieve viral suppression. In response, we developed Epic Allies, a theory-based mobile phone application (app) that utilizes game mechanics and social networking features to improve engagement in care, ART uptake, adherence and viral suppression rates among HIV-positive YMSM.

Methodology: Through a Phase I small business grant (SBIR), our team developed the initial concept for Epic Allies, guided by the Information-Motivation Behavioral Skills model and the Fogg Behavioral Model (FBM) of behavior change through technology. From 9/13 to 5/14, we conducted focus groups and usability sessions with 27 HIV-positive YMSM to assess ART adherence, motivation and behavior change needs, and strategies to address these needs via a mobile app.

Results: Analysis of focus group data revealed several overarching themes including the importance of creating an app that is interactive, social, informational, customizable and personalized. This led to finalization of: 1) real time data tracking of adherence with graphic visualizations; 2) tailored reminders and motivational messages; 3) connection to a network of other HIV-positive YMSM; and 4) a gaming approach engineered to reinforce daily adherence tracking, promote social networking support among users, encourage learning and skill building, and maintain user engagement. In usability testing, the app prototype was well received and participants offered concrete suggestions for app enhancements.

Conclusions: Epic Allies contributes significantly by addressing a critical need for interventions that promote ART uptake and adherence delivered through low-cost, widely utilized technology (mobile phones) and by using an engaging, interactive approach, including gamification and social networking, that is highly appealing for YMSM. In our recently funded Phase II SBIR, we will further refine Epic Allies for use in a trial conducted at 14 sites within the Adolescent Trials Network for HIV Interventions.

102 Developing an App to Improve Adherence for HIV-Positive Youth Using a Patient-Centered, Incubator Approach

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Introduction: Adolescents and Young Adults account for nearly 40% of new HIV infections each year and are significantly less likely than their adult counterparts to achieve viral suppression. Individuals living with chronic disease like HIV spend approximately 5,000 waking hours per year outside the doctor's office in which they make health behavior decisions. Youth constantly consume mobile technology which represents a tremendous opportunity to provide support for adherence to HIV-positive youth in the real places and times they need it as they go about their daily lives.

Description: Our goal is to develop and pilot test a mobile phone-based application to improve adherence to antiretroviral therapy among HIV-positive youth using a unique patient-centered, incubator approach. The study team initially determined features based on their clinical experience with HIV-positive youth including: interactive, personalized, time-based medication and refill reminders, multiple options for recording taking medication (i.e. button, pill cam), immediate visual feedback with positive reinforcement for taking medication, algorithm to detect multiple days of missed medication that triggers alert to youth and provider or adherence support partner to call each other, points system to win graphic (non-monetary) rewards, ability to join teams and offer support to others using app anonymously. Wireframes and a basic prototype were developed by a game designer with regular input from the clinician researchers.

Next steps: We are currently conducting focus groups using nominal group technique with HIV-positive youth to prioritize features to be completed by the professional app developers. The multi-disciplinary team will meet weekly and consult regularly with a young adult patient-expert to give input and feedback. The app will then be piloted with a group of HIV-positive youth and we will collect data on satisfaction, usage, and adherence to medication and care outcomes.



103 Baseline and Incident Sexually Transmitted Co-Infections Among a Cohort of HIV-Positive Youth

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Background: Other sexually transmitted infections (STI co-infections) among HIV-positive youth represent a significant risk to individual health and for secondary transmission. This study aims to describe prevalence of STI co-infections at HIV diagnosis and rates of incident infections and correlates throughout the care continuum among a cohort of HIV-positive youth.

Methodology: Retrospective chart review of youth (n = 310) who presented for care at an adolescent HIV clinic from 2002-2011. Laboratory, clinical and psychosocial data were abstracted at baseline and at each encounter during the study period. Kaplan-Meier curves were used to evaluate the proportion of individuals with an incident STI. Bivariate and multivariable cox-proportional hazards models were used to model the association of baseline covariates with incident STI risk.

Results: Subjects were mean age = 18.7 (2.5), 76% male, 38% uninsured, 91% Black, 69% MSM transmission. Baseline and incident STI co-infection rates were respectively: GC 22.7%, 47.6%; CT 20.2%, 49.8%; syphilis 10%, 14.2% (laboratory confirmed); herpes 0.9%, 12.8%; anogenital warts 10.3%, 18.1% (clinical diagnoses); any STI 51.1%, 77.9%. Mean follow-up duration was 3.3 years (2.4) and median time to incident STI 1.64 years. In bivariate comparisons tobacco use (HR 1.38, p = 0.05) and any other substance use (HR 1.29, p = 0.09) were associated with incident infection. History of child abuse, child protective services, mental health diagnosis, >20 lifetime partners, tobacco use, and other substance use were not associated with incident infection in the multivariate model, but individuals with at least one factor were more likely to have an incident STI (HR 1.53, p = 0.023).

Conclusion: Baseline STI co-infections were prevalent and incident STIs occurred in a majority of youth within 2 years of diagnosis. Regular STI screening and risk reduction education should be prioritized, particularly among those with identified risk factors. Future studies should explore the relationship with ART use and adherence throughout the care continuum.

105 Treatment Access Map

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Background: First of its kind in the country, the Treatment Access Map is a comprehensive online tool that will be available on the CTAC website. The Treatment Access Map will allow community members and service providers to interactively access information on:

- Publicly funded provincial and territorial HIV and hepatitis C treatment information
- Treatments covered under the six federal public drug plans
- Treatments currently under development
- Cross-provincial list of relocation-related legislation and processes linked to treatment access
- Links to individual and community resources to ease transition when moving between provinces

Methodology: After consultations with several stakeholders, including community members, frontline service providers and healthcare professionals, it was evident that a tool was needed to empower people living with HIV and/or hepatitis C by equipping them with information, resources and tools in order to better navigate structural barriers around access to treatment.

Results: Access to treatment is critical for the best possible health outcomes of people living with HIV and /or hepatitis C in Canada. In total, there are 19 different public plans in Canada, with roughly 40 percent of the population reliant on obtaining access to essential medicines through publicly funded drug programs. Currently, a map of Canada demonstrating available HIV and hepatitis C treatments per province/territory and cross-provincial list of relocation-related legislation and processes linked to treatment access does not exist.

Conclusions: The Treatment Access Map will be used to change the ways people are able to access information on drug availability nationwide and that it will strengthen avenues for access to treatment, care and support for people affected by HIV and hepatitis C, which in turn will stimulate national discussion on treatment access issues.



106 Pathways Linking Better Patient Experiences and Retention in HIV Care: A Pilot Prospective Cohort Study

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Background: In cross-sectional studies, better patient experiences have been associated with greater medication adherence and retention in HIV care. However, prospective studies are needed to determine temporal relationship.

Methodology: We conducted a pilot prospective cohort study of adults new to HIV care in Houston, Texas. From August–December 2013, patients completed a survey immediately after their first HIV medical visit and at 6-months (± 30 days). Six questions measured patients' overall experience with the HIV care provider; five measured their overall HIV care experience. We assessed short-term retention at 0–6 months (defined as having a second visit in the first 6 months) and 6–12 months (defined as having ≥ 1 visit in that second 6 months). Long-term retention at 0–12 months was based on number of 3-month quarters with a visit.

Results: A total of 140 out of 173 eligible patients (81%) completed baseline surveys. Sixty-nine percent were retained at 0–6 months; 59% at 0–12 months. Seventy-nine of 140 patients (56%) completed 6-month surveys, 77% of whom were retained at 6–12 months. Patients retained at 0–6 months reported better overall experiences with their HIV care provider (median 95.7 vs 90.4, $p = 0.017$) and HIV care (median 96.7 vs 88.2, $p = 0.001$) at baseline. Patients retained at 6–12 months reported better overall experiences with their HIV care provider at 6 months (median 95.8 vs 77.9, $p = 0.021$). Patients retained at 0–12 months did not report significantly better overall experiences with their HIV care provider (median 95.5 vs 93.9, $p = 0.163$) or HIV care (median 94.7 vs 93.3, $p = 0.188$) at baseline.

Conclusions: Better patient experiences were associated with short-term retention. Consistently better patient experiences (e.g., at baseline and 6-months) may be required to affect long-term retention. Larger studies with additional follow-up are warranted.

107 Nationwide Implementation of Motivational Interviewing Training to Enhance Youth Linkage to HIV Care in the US

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Introduction: In the US, as few as 31% of HIV-infected, 13–24 year old youth are linked to care. Motivational Interviewing (MI) has been shown to promote behavior change and treatment engagement across multiple behaviors, formats and provider types including HIV care. Studies suggest that delivering MI with adequate competency can be difficult. Traditional MI training programs may not be feasible in HIV programs due to reliance on expert-led face-to-face training and ongoing coaching that require coding of recorded client interactions.

Description: We present early results of a new model of MI training implementation delivered to linkage-to-care coordinators (LTC-Cs) in youth HIV continuum of care sites (17 sites; 13 MI / 4 control) within the Adolescent Trials Network (ATN) in collaboration with the Centers for Disease Control & Prevention, and Health Resources and Services Administration entitled Project for the Enhancement and Alignment of the Continuum of Care for HIV-Infected Youth (PEACOC). In addition to 16-hours of face-to-face MI training, LTC-Cs in the MI condition completed an innovative phone program with audiotaping of standardized patient calls ($n = 9$) and individual coaching calls ($n = 9$) guided by coded MI feedback with an MI trainer. Control LTC-Cs completed 6 audiotaped standardized patient calls. MI competency was evaluated by a 12-item tool assessing key MI behaviors with beginning competence ≥ 2.5 on a 4-point scale.

Lessons Learned: Protocol fidelity was high (98% of calls completed). At baseline, 15% of the LTC-Cs in the MI condition demonstrated beginning competency in MI skills/spirit. At 3 and 6 months, 70% and 60% of the LTC-Cs demonstrated beginning competency respectively. No control LTC-C reached competency at any time point.

Recommendations: Results from this implementation research study are promising and offer insights about feasible training approaches to facilitate uptake of evidence-based practices in the context of clinical care.



108 Pre-Treatment Health Beliefs Moderate Outcomes Following MI+CBT Intervention for Methamphetamine Use and Medication Adherence: Implications for Tailoring Services

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Background: Previous research which utilized the information-motivation-behavior (IMB) model has identified profiles of knowledge, motivation, and behavioral self-efficacy associated with substance use (one characterized by self-efficacy deficits and one by motivation deficits) and HIV medication adherence (one characterized as "change-ready" and one as "precontemplative") among HIV-positive gay and bisexual men (GBM) who use crystal methamphetamine. To date, little research has examined the potential for these pre-intervention IMB profiles to moderate intervention outcomes.

Methodology: A diverse sample (69.7% non-White) of 185 HIV-positive GBM aged 24-63 (M = 41.4) reporting recent methamphetamine use and medication non-adherence participated in a randomized clinical trial comparing an 8-session motivational interviewing and cognitive behavioral intervention (MI+CBT) to psychoeducational control. A baseline survey assessed health beliefs related to substance use and medication adherence. Use and adherence were then evaluated at 3, 6, 9, and 12 months follow-up.

Results: Among men with the motivation deficit profile who did not engage in condomless anal sex (CAS), treatment was associated with significantly less methamphetamine use ($\beta = .63$, $p < .01$) at 3 month follow-up. The effect of treatment was significantly diminished by the presence of CAS and/or the self-efficacy deficit profile. Among men who completed 4 or more sessions, there were no between-condition differences in adherence. Among participants who received 3 or fewer sessions, the slope of medication non-adherence over time was significantly greater in the therapy condition ($\beta = 2.5$, $p < .01$), indicating diminishing benefits. The pre-contemplative belief profile was associated with more missed medication days immediately post-intervention regardless of treatment condition ($\beta = .29$, $p < .01$).

Conclusions: These results indicate the importance of addressing sexual motivations and self-efficacy in the treatment of crystal methamphetamine use. Results support the utilization of relatively brief interventions that focus quickly on knowledge deficits and/or skill acquisition to address adherence.

110 HIV Post-Exposure Prophylaxis in New York City Emergency Departments, 2002-2013

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Background: HIV post-exposure prophylaxis (PEP) has been recommended by the Centers for Disease Control and Prevention for occupational exposures since 1998 and for non-occupational exposures since 2005. Little information exists on PEP uptake. We examined trends in PEP-related emergency department (ED) visits in New York City (NYC).

Methods: We analyzed ED visits among patients 13-64 years-old using NYC syndromic surveillance data from 2002-2013. PEP-related visits were identified by chief complaint. We calculated PEP-related visits as a proportion of total ED visits. Logistic regression was used to test for trend. A multivariable model was constructed with year, age (13-29 vs. 30-64 years), sex, patient neighborhood-based poverty rate (low vs. high), and neighborhood annual HIV diagnosis rate (top vs. lower three quartiles). Interaction terms with year were used to examine whether associations changed over time.

Results: We identified 2162 PEP-related visits. The proportion of PEP-related visits increased from 0.004% in 2002 to 0.013% in 2013 ($p < 0.0001$). In the multivariable model, PEP-related visits were associated with year, low neighborhood poverty rate (odds ratio (OR) = 1.8; 95% confidence interval (CI): 1.7-2.0) and higher neighborhood HIV diagnosis rate (OR = 1.7; CI: 1.6-1.9). PEP-related visits were also associated with younger age and male sex; interaction terms indicated that the magnitude of association increased from 2002-2013 for age (OR = 1.2 to OR = 2.0) and male sex (OR = 1.6 to OR = 5.4).

Conclusions: PEP-related visits in NYC EDs increased over the past decade. That associations with male sex and younger age grew stronger over time could indicate changes in PEP prescribing patterns, with uptake possibly increasing among a priority group: young men who have sex with men. The association with residence in neighborhoods with higher HIV diagnosis rates may demonstrate appropriate targeting of PEP, but findings regarding neighborhood poverty rate suggest that work may be needed to increase access to affordable PEP.



111 Durability and Prescribing Patterns of Initial HIV Regimens in Treatment Naïve Patients

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Background: Existing literature on antiretroviral (ARV) durability (persistence) is dated with the introduction of new drug classes and combinations in recent years. Prior studies suggest initial regimens last 2 to 3 years with no consensus on the most durable drug class. We evaluated the composition and durability of newer ARV regimens prescribed for treatment naïve patients in a clinical setting.

Methodology: Treatment naïve HIV-infected patients initiating therapy at a Southern urban academically-affiliated Ryan White HIV clinic from January 2007 to December 2012 were included. Initial ARV regimen compositions and durations were extracted from the electronic medical record with administrative censoring of durations in December 2014. Manual abstraction was done to confirm regimen start and stop dates and to determine reasons for ART discontinuation.

Results: This retrospective cohort analysis included 252 patients (mean age of 36, 84% male, 62% African American, 42% uninsured, 59% MSM). Median durability of all regimens was 925 days (range 15-2,732 days), roughly 2.5 years. The initial regimen was discontinued in 167 (66%) patients while the remaining 85 (34%) were still on the initial regimen at the study end period. Among those discontinuing their regimen, median duration was 442 days (range: 15 to 2,365 days), compared to a median duration of 1,457 days (range: 730 to 2,732 days) among those continuing their regimen. The most common reasons for discontinuation were side-effects (n = 57) and loss to follow-up (n = 57). Regimens most commonly prescribed were emtricitabine and tenofovir with efavirenz (47%, median duration 952 days), with raltegravir (14%, 1,058 days), with darunavir/ritonavir (12%, 1,000 days), and with atazanavir/ritonavir (8%, 963 days).

Conclusions: Durability of most contemporary ARV regimens remains under 3 years, however, patients remaining on their initial ART had over 3-times greater regimen durability. Fixed-dose combination of tenofovir and emtricitabine was prescribed most often along with efavirenz, raltegravir and ritonavir-boosted darunavir and atazanavir.

112 Transitioning to Second-Line ART Among Adolescents in Zambia: Predictors of Treatment Switching and Adherence Among Those on Second-Line Regimens

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Background: HIV/AIDS is the main cause of mortality among adolescents in Sub-Saharan Africa. Understanding baseline predictors of switching to second-line antiretroviral therapy (ART) and adherence among adolescents who have switched may help prevent poor treatment outcomes.

Methodology: In 2012-2013, a quantitative survey was administered to 309 eligible adolescents living with HIV (ALHIV) attending three ART clinics in the Copperbelt Province, Zambia. Medical chart data, including pharmacy refill data to calculate medication possession ratios (MPR), were abstracted for all adolescents who completed the survey. Chi-square and one-way ANOVA statistics were calculated to test associations between being on second-line ART and various socio-demographic, psychosocial and ART adherence characteristics. A cox proportional hazards model was used to estimate the effect of baseline ART socio-demographic and clinical variables on time to switching to second-line ART.

Results: At the time of data collection, 10% of adolescents were on second-line ART. Compared to those still on first-line regimens, ALHIVs on second-line ART were older (p = 0.03), out of school (p = 0.03) and on ART longer (p = 0.03). Adolescents on second-line treatment were also more likely to report missing 48 consecutive hours or more of their drugs in the past 3 months (p < 0.01). No difference between groups was found for MPR < 90%. The multivariable cox proportional hazards model indicated that adolescents who initiated ART with an efavirenz-based regimen had significantly shorter times to switching to second-line ART than those put on nevirapine-based regimens (HR = 2.7; 95% CI: 1.1, 6.4).

Conclusions: Self-reported adherence was lower among ALHIVs on second-line ART. Higher pill burdens may be partly responsible. Also, as ALHIV on second-line ART were older and more likely to be out of school, they may lack adequate social and familial support and a routine to achieve adequate adherence. Regular monitoring of drug tolerability and treatment outcomes for ALHIVs initiated on efavirenz-based regimens is recommended.



113 Perceived Barriers to Medication Use as Predictors of Antiretroviral Therapy Non-Adherence

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Background: People living with HIV/AIDS frequently experience barriers to adequate adherence to antiretroviral treatment (ART). This study aimed to identify which perceived barriers might potentially influence reported non-adherence.

Methodology: Cross-sectional national study of HIV-positive adults under care in 17 AIDS referral services from 12 Brazilian states. Data was collected using face-to-face semi-structured interviews in 2010. The dependent variable, non-adherence to ART, was measured through the WebAd-Q, a tool to monitor self-reported adherence in AIDS public services in Brazil, and consists in a four-category scale of non-adherence: "zero" non-adherence, non-adherence at one, two, or three dimensions (i.e., improper timing, skipping medication and skipping doses). Patients answered to three open-ended questions about ART and the barriers were identified through content analysis. The association between identified barriers and self-reported non-adherence to ART was assessed using ordinal regression. Odds ratios (OR) with 95% confidence intervals (95% CI) were estimated.

Results: Of 595 participants included, 38% reported "zero" non-adherence, 27% non-adherence at one dimension, 24% at two dimensions and 11% at three dimensions. We identified 14 barriers from participants' answers and the most commonly reported were "difficult to incorporate into routine" (40%), "lack of social support" (23%) and "side-effects" (23%). Patients who reported alcohol/drug abuse (OR: 2.68; 95% CI: 1.31, 5.50), forgetfulness in taking the pills (OR: 2.50; 95% CI: 1.53, 4.09), uncertainty about future (OR: 1.78; 95% CI: 1.08, 2.95) and those who found ART difficult to incorporate into routine (OR: 1.51; 95% CI: 1.12, 2.04) were more likely to report non-adherence at more dimensions.

Conclusion: Most participants reported non-adherence at least at one dimension (timing, medication or doses). Several factors hindered ART adherence, especially those related to patient and therapy characteristics. Multidisciplinary attention at the health-care service with behavioral counseling programs, as well as the development of treatment simplification strategies, are needed to improve patient's adherence to ART.

114 Familiarity With and Preferences for Oral Versus Long-Acting Injectable PrEP in a Nationally Representative US Sample of Gay and Bisexual Men

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Background: PrEP has been shown to be efficacious in the prevention of HIV in the forms of once-daily Truvada and, in emerging research, as a long-acting injectable (LAI). Adherence to once-daily Truvada has been suboptimal in demonstration projects, thus LAI PrEP may provide even greater protection, particularly among groups who are likely to have lower adherence, though it is presently unclear whether individuals have a preference for oral versus LAI PrEP.

Methodology: We recruited a nationally representative sample of 857 gay and bisexual men (GBM) and asked about both willingness to take and preferences for oral and LAI-PrEP.

Results: A majority of GBM (84%) had never heard of LAI PrEP. More than half (56.5%) expressed willingness to take daily PrEP and a similar proportion (53.4%) expressed willingness to take LAI PrEP. Given the choice between daily and LAI PrEP, nearly half (46.6%) preferred LAI PrEP and another 10.0% said they would prefer whichever was more effective, while only 14.2% preferred daily oral PrEP. Asked to choose between daily, intermittent, and LAI PrEP, participant preferences were 22.4%, 14.0%, and 63.6%, respectively. Asked about the barriers to taking PrEP, the two most salient were the potential long-lasting effects on health and the potential side effects, which each received the same average rating (3.1 of 4) for both daily and LAI-PrEP, $p = .94$, $p = .20$, respectively.

Conclusions: Somewhat unsurprisingly, this nationally representative sample of GBM was largely unaware of LAI PrEP, though once told about it, willingness to LAI PrEP was comparable to that of oral PrEP. In fact, LAI PrEP was more strongly preferred than daily or intermittent oral PrEP. These results suggest that GBM not only prefer LAI PrEP but also perceive its potential health consequences similarly, suggesting the availability of LAI PrEP may increase uptake of biomedical prevention.



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

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Background: An HIV prevention program was established in July 2013 at Thomas Street Health Center (TSHC), a publically-funded HIV clinic in Houston, TX. Patients receive HIV prevention counseling, STI testing, condoms, and tenofovir/ emtricitabine (TDF/FTC) as HIV pre-exposure prophylaxis (PrEP).

Methodology: Clients ≥ 18 years old who present for walk-up rapid HIV testing completed surveys investigating perspectives on HIV transmission, prevention and PrEP. Administrative data yielded linkage data. Frequencies and percentages were reported for variables by group and compared by Chi-Square or Fisher's exact test.

Results: Of 205 screened clients, 64.2% thought they might acquire HIV during their lifetime and 61.7% reported their partner(s) opposed condoms. However, 38 (18.5%) attended a Prevention Program appointment, including 52.6% Black non-Hispanic patients, 15.8% White non-Hispanic, 26.3% Hispanic and 5.3% other race/ethnicity. More attendees than non-attendees reported interest in PrEP despite potential side effects (92.1% vs. 72%, $p = 0.01$). Attendees reported higher baseline condom use than non-attendees (42.1% vs. 24.2%, $p = 0.04$) and were more likely to deny worrying about infidelity accusations (71.1% vs. 40.6%, $p < 0.01$). More attendees than non-attendees noted PrEP gives them hope (100% vs. 89.2% $p < 0.01$). Of attendees, 29 (76.3%) were prescribed PrEP. PrEP users included 44.8% women ($p = 0.72$); 17.2% who reported marriage to a male partner; and 10.8% who were single. PrEP users were more likely to be employed than non-users (55.2% vs. 41.9%, $p = 0.04$), be stably housed (78.6% vs. 50.9% $p = 0.02$) and, report an annual income over \$10,000 (65.5% vs. 44.1% $p = 0.04$).

Conclusions: Among this diverse population, most patients presenting for testing, even those not pursuing a prevention program appointment, perceived themselves as high-risk for HIV. Patients starting PrEP had higher socioeconomic status. Screening for PrEP need at HIV testing in an HIV clinic is a high-yield strategy. Nonetheless, PrEP may still not be reaching the most vulnerable populations.

117 Perspectives on HIV Risk and HIV Pre-Exposure Prophylaxis (PrEP) Among HIV Testing Clients in Houston, TX

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Background: Patient HIV risk perception and attitudes towards condoms influence HIV prevention choices. Antiretroviral pre-exposure prophylaxis (PrEP) uptake may be influenced by patients' knowledge and perception of PrEP.

Methodology: Patients ≥ 18 years old presenting for walk-up rapid HIV testing at a publically-funded HIV clinic between December 2013 and November 2014 were recruited. Participants completed surveys that investigated knowledge, attitudes and beliefs about HIV transmission, prevention and PrEP. Mean, standard deviation, frequency and percentage were reported for the continuous and categorical variables respectively.

Results: The survey was completed by 205 participants (response rate 92.2%). Mean participant age was 39.4 ± 11.6 years and 36.3% were female, 49.8% were Black non-Hispanic, 25.9% Hispanic, 13.2% White non-Hispanic and 11% other race/ethnicity. Almost half (43.8%) worked full or part-time, and 18.8% were homeless or unstably housed. Most were uninsured (66.8%), 84.0% completed high school or more, 17.8% had household income over \$25,000 and 33.2% were single. Many participants (64.2%) believed they would become infected with HIV, and 81.1% knew someone living with HIV. Although 99.5% agreed that condoms reduce HIV/STI risk, some condom use was reported by 63.3%. Challenges navigating condom use emerged: 61.7% reported partners did not like condoms, 38.2% worried partner(s) would refuse condoms and 52.2% worried about infidelity accusations. For more than half (60.6%), non-condom use enhanced connectedness to their partner. Participants reported being willing to take PrEP despite potential temporary side effects (75.7%), had to be used with condoms (85.2%) or required regular HIV testing (92.6%). Ninety-one percent reported that PrEP gives them hope; 90.1% reported interest in HIV prevention services; and 74.8% showed interest in taking PrEP.

Conclusions: For this young adult, uninsured, minority population, partner issues often impeded condom use and 64.2% felt HIV infection inevitable. Most participants reported interest in PrEP, even in conjunction with condoms.



120 Translating the Neuroscience of Prospective Memory into a New Adherence Intervention for Youth With HIV

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Background: Medication adherence rates among youth living with HIV are inadequate to effectively manage the disease, and novel interventions grounded in basic behavioral science are needed. Emerging evidence suggests that prospective memory (PM) could represent an important piece of the puzzle. PM is defined as the neurocognitive capacity to successfully form, maintain, and execute an intention at a particular point in the future in response to a specific cue.

Methodology: We first conducted theory-driven laboratory studies to improve three components of PM using a within-subjects design and traditional cognitive neuroscience tasks (strategic encoding, monitoring, and cue salience) in 60 youth with HIV (ages 16 to 24).

Results: Results suggested that encoding and cue salience manipulations improved PM in youth in the lab, but the monitoring manipulation did not. We subsequently developed a single session visualization and cue-intention pairing adherence intervention followed by text message reminders for visualization ("Imagine That").

Conclusions: We are currently testing "Imagine That" in an innovative multiple baseline design with trajectory analysis in 24 youth (12 with substance use and 12 youth without). Immediate post-test data of this second phase will also be presented.

121 The Impact of Co-Morbidities on HIV Medication Adherence Among Substance-Using Older Adults Living With HIV

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Background: Older adults living with HIV (OALWH) typically live with a greater number of comorbid health conditions, and with earlier onset, compared to their HIV-negative peers. The purpose of this study was to examine the chronology of OALWH's comorbidities, and associations with HIV medication adherence, health attitudes, and quality of life.

Methodology: The NYC-based sample included 128 OALWH recruited for an intervention study targeting substance use and medication adherence. The sample was predominantly African-American (79%), and consisted of 32 heterosexual males, 51 gay/bisexual males, 38 heterosexual females, and 7 gay/bisexual females. Participants provided data on HIV diagnosis, medication adherence, health history, and quality of life.

Results: Participants reported an average of 3.8 (SD = 2.4) current comorbid conditions, and 5.0 (SD = 2.9) lifetime conditions, with an average of 2.0 (SD = 1.9) conditions occurring prior to their HIV diagnosis. Most common were depression (54%), anxiety (40%), hypertension (38%), and arthritis (30%). The number of current co-morbid conditions was significantly associated with greater bodily pain ($r = .25, p < .001$), health limitations ($r = .32, p < .001$), and social life limitations ($r = .27, p < .001$). Poorer HIV medication adherence was significantly associated with greater number of lifetime chronic conditions ($r = .14, p = .03$). The number of conditions prior to HIV diagnosis was significantly associated with feeling despair about current health ($r = .15, p = .042$), and feeling less confident in ability to maintain HIV medication adherence ($r = -.16, p = .015$).

Discussion: This study uncovered great variability in the number of comorbidities facing this sample of OALWH, and the impact of co-morbidities on medication adherence. Efforts at improving HIV medication adherence in this growing population need to consider the numerous other health conditions that an individual may be concurrently facing.



122 Patterns of HIV Medication Adherence-Related Information, Motivation, and Behavioral Self-Efficacy Observed Among Gay and Bisexual Men who use Crystal Methamphetamine

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Background: The information, motivation, and behavioral self-efficacy (IMB) model has been applied broadly to understand health-related behavior including substance use. Deficits in various IMB domains have implications for tailoring intervention foci; however, little research has examined patterns of IMB factors observed prior to adherence counseling. This is particularly important for HIV-positive gay and bisexual men (GBM) who use substances, which pose a health concern for this population that is inter-related with medication non-adherence.

Methodology: A diverse sample (67% non-White) of 210 HIV-positive GBM aged 24-63 (M = 40.8) reporting recent crystal methamphetamine use and non-adherence to HIV medication, completed a baseline survey assessing knowledge, self-efficacy, and perceived pros and cons for improving adherence.

Results: A Latent Class Analysis supported the presence of two groups. The "change-ready" group was characterized by higher adherence-related knowledge and self-efficacy. This group also perceived more benefits and fewer drawbacks to adherence. In contrast, the "precontemplative" group was distinguished by significantly lower knowledge and self-efficacy scores. They also perceived fewer benefits and more drawbacks to adherence. The change-ready group reported significantly lower viral load ($t(77.1) = -1.96, p = .05$) and fewer missed medication days (Wald $\chi^2(1) = 4.5, p = .03$). The groups did not differ on the amount or severity of methamphetamine use.

Conclusions: These findings have implications for intervention tailoring. Strategies such as motivational interviewing may be particularly useful to address problems associated with low motivation; however, cognitive behavioral approaches may be more effective for enhancing knowledge and self-efficacy. The presence of a distinct group of GBM with needs in both of these domains suggests that a combined intervention may be appropriate. In addition, the fact that adherence IMB profiles were not associated with methamphetamine use supports the behavior-specific nature of the IMB theory and the use of interventions which permit strategic selection of potential intervention targets.

123 Going the Distance: The Brandy Martell Project to Engage Black/ African American and Latina Transwomen in HIV care

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Introduction: Transwomen of color are disproportionately impacted by HIV, have low HIV care engagement and survival rates compared to other populations living with HIV. We will discuss novel methods an East San Francisco Bay Area agency is employing to re-engage transwomen of color in a HIV care linkage and retention demonstration project.

Description: The Brandy Martell project is an intervention to re-engage and retain transwomen of color previously out of HIV care via workshop programming and a legal clinic. Novel modes of re-engaging 28 Black/ African American and Latina transwomen in the intervention included delivering transportation vouchers, delivering an ongoing workshop cycle with curriculum informed by participants, establishing a peer referral and engagement model, and appropriately compensating transwomen for their time, participation and commitment to the program. The legal clinic is an appointment and drop-in based service where transwomen can access free legal representation for anything from identification changes to criminal offenses.

Lessons Learned: Efforts to engage transwomen of color living with HIV into the Brandy Martell Project have been time and labor intensive, requiring extreme flexibility and unique outreach, recruitment and follow-up methods. Providing access to a range of legal support services can decrease institutional barriers to care. Addressing the desire for structured regular services through workshops sessions with content focused on transgender health, wellness and safety rather than on only HIV-specific content can also boost retention in care and have a positive effect on social and clinical outcomes related to HIV.

Recommendations: Interventionists and organizations that seek to engage transwomen of color must be willing to go the distance and move beyond typical models of HIV care engagement. Research to identify the challenges transwomen of color have in accessing HIV care are needed in addition to support of novel models for re-engagement by external funders.



124 Prevalence and Predictors of Regular HIV Testing Patterns in an Online Cohort of Men Who Have Sex With Men

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Background: HIV testing is an important gateway into connecting HIV-positive individuals into the HIV continuum care. HIV transmission is common amongst men who have sex with men (MSM), and studies have addressed some factors associated with HIV testing. However, few studies have evaluated predictors of regular and non-regular HIV testing in this population. This study compares demographic characteristics to assess which factors are associated with different testing patterns.

Methodology: An online survey was administered to internet-using MSM who were recruited using online social networking sites such as Facebook. Multivariable logistic regression models were used to describe demographic and behavioral factors associated with undergoing self-reported regular HIV testing.

Results: Of the 1,200 MSM in our adjusted analytic sample who completed the entire survey, 496 (41%) reported regularly undergoing HIV testing. In comparison to the study population as a whole, multivariate analyses showed that undergoing regular HIV testing was associated with having recent sexual activity, having been tested within the last 12 months, having education beyond a high school level, being older than 25, having private insurance, and identifying as Hispanic. When comparing regular and non-regular testers, regular testing was associated with greater odds of having had recent sexual activity, a recent HIV test, identifying as Hispanic, and being older than 35. Regular testing intervals peaked at 3 months (14.3%), 6 months (41.8%), and 12 months (26.5%) between tests.

Conclusions: This analysis identified demographic and behavioral characteristics predicting regular HIV testing in an online cross-sectional study of MSM, and measured the prevalence and frequency of regular testing in the overall study population. HIV prevalence and transmission rates are substantially higher in MSM, and it is essential that prevention outreach efforts better target those least likely to test or to be aware of their HIV status at a given time.

125 Antiretroviral Therapy (ART) Adherence: A Comparison of Single Versus Multi-Tablet Fixed Dose Combination (FDC) Regimens

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Background: A comparison of all available once-daily fixed dose single tablet regimens (STR) to multi-tablet regimens (MTR; of any frequency, containing FDC) using randomized controlled trials, observational studies and economic models focused on adherence measures could inform HIV healthcare providers and policy makers regarding modalities of patient disease management to improve health outcomes. A systematic review and meta-analysis of published literature was conducted to compare STR to MTR adherence measures.

Methodology: Published literature in English between 2005 and 2014 was searched using Embase, Medline, PubMed (Medline in-process) and ClinicalTrial.gov databases. Two-level screening was undertaken by two independent researchers to finalize articles for evidence synthesis. Adherence, efficacy, safety, tolerability, healthcare resource use (HRU) and costs were assessed comparing STR to MTR. A random effects meta-analysis was performed and heterogeneity examined using meta-regression. Adherence, HRU/Cost evaluations are summarized.

Results: Of the 39 articles identified for qualitative evidence synthesis, 22 reported patient adherence outcomes and 5 had quantifiable data for meta-analysis. STR patients were statistically significantly more adherent (per respective study-defined adherence goals) compared to MTR patients of any frequency (odds ratio (OR): 2.37 (95% CI:1.68, 3.35) (p <0.001)), twice-daily MTR (OR:2.53 (95% CI:1.13, 5.66) and once-daily MTR (OR:1.81 (1.15, 2.84)). Several studies reported significant reduction in HRU and costs among STR group versus MTR: mean costs (annual, bi-annual, monthly or per-diem) were found to be lower for the STR group compared to MTR, and STR was also deemed cost-effective, based on its lower incremental cost-effectiveness ratio (ICER).

Conclusions: STR demonstrated significant impact on improving adherence and potentially lowering overall HRU and costs in comparison to MTR. These findings may have policy implications for HIV disease management in resource-limited settings, considering the known associations between ART adherence and improvements in humanistic/clinical burden among HIV patients, and the potential HRU/cost savings associated with STRs.



126 Pre-Exposure Prophylaxis (PrEP) in Ambulatory Care Clinics, New York City, 2012-2014

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Background: Since FDA approval of tenofovir/emtricitabine (TDF/FTC) for HIV pre-exposure prophylaxis (PrEP), support for PrEP has increased. It is unclear whether prescribing has increased concurrently. Using data from New York City (NYC) ambulatory practices, we measured quarterly trends and identified patterns in PrEP prescription.

Methodology: We queried the electronic health records of ambulatory practices participating in NYC Health Department's Primary Care Information Project, quarter 1 (Q1) 2012-Q3 2014. The 579 practices included saw ≥50 patients aged ≥13 in 2012, were located throughout NYC, and were classified as independent practices, community health centers or hospital outpatient settings. PrEP prescription was defined as current TDF/FTC prescription to patients aged ≥13 in the absence of other HIV medications, excluding those with diagnosis of HIV, hepatitis B, or HIV-related opportunistic infections. Data were reported as rates per 100,000 patients seen. Significance was assessed by chi-square test.

Results: PrEP prescription rates increased from 6 per 100,000 (n/N = 33/517,679) in Q1 2012 to 118 per 100,000 (725/613,768) in Q3 2014 ($p < .001$). The largest relative increase was within 2014 (219%). In Q3 2014, prescription rates were higher in hospital outpatient settings (n = 4; 210 per 100,000) and independent practices (n=530; 121 per 100,000) than in community health centers (n = 27; 56 per 100,000). The prescription rate in Q3 2014 was higher ($p < .001$) in one Manhattan area, Chelsea-Village (n = 31; 764 per 100,000), than in all other areas combined (n = 530; 32 per 100,000).

Conclusions: PrEP prescribing increased 2012-14 in NYC practices, with the largest increase observed recently. Prescribing appeared to be concentrated in hospital outpatient and independent practice settings and in one predominantly affluent area with the highest HIV diagnostic rates citywide. More detailed study is needed to determine the extent to which these rates indicate uneven adoption of PrEP prescribing or uneven distribution of patients for whom PrEP might be indicated.

127 Retention-in-Care Among HIV-Positive Adults in Urban Ethiopia: A Mixed-Methods Study, 2005-2011

Yordanos Tiruneh (presenting)¹, Omar Galarraza¹, Becky Genberg¹, Ira Wilson¹

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Background: Poor retention in HIV care challenges the success of antiretroviral therapy (ART). We assessed how well patients stay in care and explored factors associated with retention in the context of an initial ART rollout.

Methodology: We conducted a mixed-methods study at Black Lion Hospital in Addis Ababa, Ethiopia. A cohort of 385 treatment-naïve adults who started ART between 2005-2007 was followed for a median of 4.6 years from ART initiation to lost-to-follow-up (LTFU—missing appointments for >3 months after last scheduled visit or administrative censoring). We used Kaplan-Meier plots to describe LTFU over time and Cox-regression models to identify factors associated with LTFU. Six focus group discussions, each with 6-11 patients enrolled in care, were conducted; grounded theory approach was used for data analysis.

Results: Median baseline age was 34 years; 64% were female and 32% were WHO-stage-IV. Median starting CD4 count was 115 cells/mm³ (IQR: 61-175). Thirty percent were LTFU by study end; 57% of LTFU dropped out during first year of treatment. Patients with baseline CD4 counts 200 cells/mm³ had higher risk of LTFU (HR = 1.62; 95% CI: 1.03-2.55; and HR = 2.06; 95% CI: 1.15-3.70, respectively), compared to patients with baseline CD4 counts of 100-200 cells/mm³. Bedridden participants at ART initiation and those with lower education were more likely to be LTFU. Qualitative data revealed that using holy water, economic constraints, fear of stigma, and care dissatisfaction discouraged patients from staying in care. Restored health and functional ability accompanied by sense of being lucky as well as social support motivated engagement in care.

Conclusion: Complex socio-cultural, economic, and health-system-related barriers inhibit optimum patient retention. Better tracking, enhanced social support, and regular adherence counseling addressing stigma and alternative healing options are needed. Interventions should be tailored to those with advanced disease as well as those who are healthier at enrollment.



128 Use of Complementary and Alternative Medicine and its Implication for Conventional HIV Care in Ethiopia

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Background: Many people living with HIV/AIDS (PLWHA) use complementary and alternative medicine (CAM). Little is known about patterns of CAM use or the implications for conventional HIV care in low-resource settings. We conducted a qualitative study to understand factors that shape treatment choices and examine how PLWHA navigate the therapeutic landscape and choose healing itineraries in the era of antiretroviral therapy (ART).

Methodology: Data were collected using in-depth interviews with 105 HIV-positive adults in Addis Ababa, Ethiopia. Participants were recruited at the clinic where they received conventional HIV care. Interview questions elicited information on experiences with and the perceived benefits of CAM, the intensity and duration of CAM use, and its relation with ART. Grounded theory guided data analysis.

Results: The mean age of participants was 38 years; 59% were female and 42% had primary or no education. Over two-thirds had no or extremely low income and the majority (62.9%) were Orthodox Christians. Over half (53.3%) used CAM, mainly holy water or herbal medicine. Women, younger adults (18-29), people with low education/ income, and those using ART for less than 2 years were more likely to use CAM. ART was concurrently used by 61% of CAM users while 39% used CAM exclusively prior to or after starting ART. Motivations for simultaneous use of CAM and ART included seeking holism or self-regulation and the belief that both CAM and ART represent God's healing power. People who replaced ART with CAM sought liberation from biomedical dependence or believed that CAM and ART are mutually exclusive.

Conclusions: CAM use among PLWHA in low-resource settings is high even where ART is accessible. Our findings indicate that CAM use could compromise success with ART; therefore healthcare providers in such settings need to encourage meaningful conversations that help patients safely integrate CAM while adhering to ART.

129 The Role of Chronic Pain in Behavioral Health, Social Support and Patient-Doctor Relationships: Implications for HIV Care and Quality of Life

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Background: Inject drug use (IDU) and antiretroviral therapy are associated with chronic pain-related conditions, and IDUs vs non-IDUs are less likely to be prescribed (adequate) powerful analgesics. We sought to address the dearth of research attention to this by exploring effects of inadequate pain management on IDUs' behavioral health, social support and patient-doctor relationships, which have been found to be associated with their ART adherence.

Methodology: Participants were clinic-recruited former or current IDUs on ART (n = 383). Measures included often or always being bothered by pain in the prior 6 months, patient-doctor relationship (Bakken et al 2000), negative social support (Newsom et al 2005) and the CES-D. A fixed effects approach was used to regress patient-doctor relationship on pain at each of 3 time points to control for potential confounders that are known and unknown (Bollen & Brand, 2010). Baseline data was used for multiple logistic regression analysis.

Results: In the fixed effect model, pain was associated with worse patient-doctor relationship at all three time points. Logistic regression results indicated that pain and depressive symptoms were associated with worse patient-doctor relationship even after adjusting for current drug use, sex, and HIV care visits. We also found evidence of an interactive effect between pain and negative support on depressive symptoms.

Conclusions: Our results underscore the need for improved pain management in this population, and highlight the role of chronic pain in depression and drug abuse, and its adverse effects on social support and doctor-patient relationships. The findings contribute to biospsychosocial theory and modeling, and have implications for ART adherence, continuity of HIV provider relationships, and quality of life among this population with persistent disparities in chronic pain and ART outcomes.



131 Adoption of Guidelines for Universal Prescribing of Antiretroviral Therapy in the United States

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Background: In 2012, the U.S. Department of Health and Human Services recommended prescribing antiretroviral therapy (ART) for HIV-infected individuals regardless of CD4 cell count, barring clinical contraindications or adherence concerns. However, little is known about adoption of the new guidelines by HIV care providers.

Methodology: During 2013-2014, we surveyed a nationally representative sample of HIV care providers in the United States. Associations between provider characteristics and prescription of ART regardless of CD4 count were assessed with Rao-Scott chi-square tests. Ratios of predicted probabilities for selected subgroups of providers were estimated from a multivariate logistic regression model.

Results: Of 2,023 eligible providers, 1,234 responded (adjusted response rate, 64%). We estimated that there were 8,257 (95% confidence interval [CI]: 6,902-9,611) HIV care providers in the United States, of whom 79% were physicians (45% infectious disease specialists), 22% were nurse practitioners, and 5% were physician assistants. ART was prescribed regardless of CD4 count by 71% of providers (CI: 64.6-77.8). Providers who cared for 20 or fewer HIV patients (15% of all HIV providers) were 33% less likely to prescribe ART regardless of CD4 count than those with 200 or more patients (26% of all HIV providers). Providers practicing in Ryan White HIV/AIDS Program (RWHAP)-funded facilities (48% of all HIV providers) were 23% more likely to prescribe ART regardless of CD4 count than those practicing in facilities without RWHAP funding. Provider type, physician specialty, and number of years in practice were not associated with universal ART prescribing.

Conclusions: More than a year after release of updated treatment guidelines, there is moderate support among HIV care providers for prescribing ART regardless of CD4 count. Research may be needed to develop strategies to increase adoption of current treatment guidelines, especially among providers with small numbers of HIV patients and those not practicing at RWHAP-funded facilities.

132 Delivery of Antiretroviral Therapy Adherence Support Services by HIV Care Providers in the United States

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Background: IAPAC and several federal agencies recently updated recommendations for clinical providers to support sustained, high adherence to antiretroviral therapy (ART). However, little is known about delivery of these services by HIV care providers.

Methodology: During 2013-2014, we surveyed a probability sample of HIV care providers in the United States. We estimated the percentage of HIV providers who performed at least two of three ART support activities to most or all patients. We used the Rao-Scott chi-square test to assess associations of this outcome with provider characteristics. We included variables associated with the outcome at $p < 0.05$ in a multivariable model to identify significant ($p < 0.05$) predictors and their adjusted prevalence ratios (aPR) for providing at least two ART support activities.

Results: In all, 1,231 providers participated (adjusted response rate of 64%). Almost all providers (96%) discussed adherence at every visit, 60% offered advice about tools to increase adherence, 54% referred non-adherent patients for supportive services, and 70% provided at least two of these three services. Provider characteristics independently associated with providing at least two ART support activities were being a nurse practitioner (aPR 1.33, $p < 0.01$), providing primary care (aPR 1.45, $p = 0.02$), practicing in a Ryan White HIV/AIDS Program (RWHAP)-funded facility (aPR 1.34, $p = 0.03$), and reporting always or usually having enough time to provide all needed care to established HIV patients (aPR 1.22, $p < 0.01$).

Conclusions: Most providers report following guidelines for regular adherence assessment but providers less frequently report offering services to non-adherent patients. Providers who do not provide primary care and those who do not practice in RWHAP-funded facilities may need assistance to ensure that their non-adherent patients receive appropriate support. Structural changes that would allow providers more time for patient care may increase the provision of ART adherence support.



133 The Role of Pharmacy Refill Measures in Assessing Adherence and Predicting HIV Disease Measures in Youth with Perinatally-Acquired HIV (PHIV)

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Background: Antiretroviral (ARV) adherence is critical in monitoring disease response in PHIV youth. Pharmacy refill data offer an objective measure of medication availability over the longer term and may add insight into adherence behaviors not obtained from short-term recall methods.

Methodology: Participants were PHIV youth from the PHACS Memory Substudy. Pharmacy refill records over 2, 4, and 6 months were compared with caregiver, youth and worse of caregiver/youth-reported 7-day adherence in predicting suppressed viral load (SVL; >90% coverage (% prescribed doses covered by prescriptions filled) per pharmacy refill and >90% medication taken based on both caregiver and youth 7-day recall. Adjusted logistic regression analyses considered demographic characteristics, medication responsibility, number of ARVs in regimen, and pharmacy auto-refill.

Results: A total of 174 PHIV participants enrolled (mean age = 14.7 years), 74% Black, 16% Hispanic, and 44% male. Overall, 78% were adherent by worse of caregiver/youth-reported 7-day recall, and 60%, 53%, and 46% by pharmacy refill over 2, 4, and 6 months. In adjusted models, adherence by worse of caregiver/youth 7-day recall showed associations with SVL (OR = 2.79, $p = 0.05$), as did pharmacy refill, 2-months (OR = 3.96, $p = 0.01$), 4-months (OR = 2.44, $p = 0.07$), and 6-months (OR = 3.95, $p = 0.01$). Adherence measures also demonstrated significant associations with CD4% ≥ 25 in adjusted models: worse of caregiver/youth 7-day recall (OR = 5.32, $p < 0.01$), pharmacy refill over 2-months (OR = 4.37, $p < 0.01$), 4-months (OR = 3.43, $p = 0.01$), 6-months (OR = 4.02, $p = 0.01$). Association between 7-day recall and pharmacy refill was significant, with the strongest association observed between 4-month refill and youth 7-day recall (OR = 4.67, $p = 0.01$); however, agreement was weak (Kappa < 0.20).

Conclusions: Pharmacy refill and 7-day recall measures were equally strong in predicting SVL and higher CD4% but only in weak agreement with each other, suggesting both provide valuable but complementary information for studying and monitoring medication management in youth with PHIV.

134 Executive and Memory Functioning and Medication Adherence Among Youth With Perinatally Acquired HIV

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Background: Successful antiretroviral (ARV) medication management is critical as youth with perinatally-acquired HIV (PHIV) transition through adolescence. This study examined whether poorer memory and executive functioning predicted ARV non-adherence in youth with PHIV to identify targets for intervention.

Methodology: Participants included PHIV youth from the US-based PHACS Memory Substudy ages 9 to <19. Non-adherence was defined as any missed ARV dose over the previous 7 days by either youth or caregiver report, or <90% prescribed ARV availability according to pharmacy refill records. Medication responsibility was identified using youth and caregiver questionnaires. Memory, executive functions, and sociodemographic characteristics were evaluated in relation to non-adherence using logistic regression models.

Results: The 174 participants (mean age 14.7) were 44% male, 78% black, and 16% Hispanic; 26% with CDC Class C diagnosis; 12 not on ARVs. Rates of non-adherence were 55% of 154 with completed 7-day report, and 45% of 157 with pharmacy refill data. Youth at least partially responsible for ARV adherence (81%) were significantly older (15.1 vs. 12.4 years). In adjusted analyses, 7-day non-adherence was significantly associated with more verbal fluency set-loss errors, but better verbal learning, letter fluency, and color/word naming performance; lower pharmacy refill adherence was significantly associated with more verbal and design fluency set-loss errors but better verbal category and category-switching performance and older age, biological-parent caregiver, and fewer ARVs in regimen. Among youth at least partially responsible for medication, 7-day non-adherence was significantly associated with more verbal fluency set-loss errors and lower income, while lower pharmacy refill was associated with biological-parent caregiver.

Conclusions: Consistent with findings in adults with HIV, executive dysfunction (i.e., fluency set loss errors) was associated with poorer adherence among youth with PHIV. However, better performance on verbal or speed-related measures was also associated with non-adherence. Although observed in earlier studies, this counterintuitive finding requires further study.



135 Improving Access to Voluntary Medical Male Circumcision in Prison Services in Uganda: Lessons From SPEAR Project

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Introduction: HIV prevalence in prison communities is among the highest in Uganda. Approximately 11% of inmates are infected with HIV in comparison to the general population at 7.3%. Despite this high prevalence, HIV prevention interventions especially Voluntary Medical Male Circumcision (VMMC) have not been scaled up among prisons due to non-existing national policy.

Description: Between October 2012 and May 2014, the Supporting Public sector workplaces to Expand Action and Responses to HIV and AIDS (SPEAR) project funded through the United States Agency for International Development (USAID), supported Uganda Prisons Services (UPS) to address the challenges of initiating and sustaining VMMC among prison communities. SPEAR focused on building the capacity of health workers; strengthening the supply chain of VMMC kits; mapping out barracks for high volume VMMC services; and carrying out 22 integrated circumcision campaigns in 34 prisons barracks through fixed, outreach, and mobile sites.

Lessons Learned: Twenty-two VMMC campaigns were carried out in 34 prison barracks. A total of 13,156 men were circumcised, tested and counseled for HIV. A total of 2,349 males testing positive for HIV were initiated into care and treatment programs. Success of VMMC programs within prisons depends on; i) training of service providers, ii) cooperation of prisons management; and iii) ensuring supply chain systems and creating demand for services. Flexibility, prompt response, and adaption of service delivery based on the needs of the prisons community can achieve a high number of circumcisions.

Recommendations: Continued advocacy and strategic engagement with management and staff of UPS to provide space, time and human resources are essential to support scaling up VMMC services to other prison barracks through outreach services to meet the unmet demand among the prisons community.

138 Adherence to the Postpartum PMTCT Cascade Among a Sample of South African Women: the Role of Depression

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Background: Preventing mother to child transmission (PMTCT) of HIV shifts postpartum to include infant focused behaviors and initiation of contraception, in addition to maternal antiretroviral therapy (ART). Depression is a robust predictor of non-adherence to ART; little is known about the role of depression in adherence to postpartum PMTCT practices. Understanding adherence to PMTCT can aid in preventing vertical transmission and improving lives of HIV-infected mothers.

Methodology: 156 HIV-infected women enrolled in PMTCT during pregnancy (median age 29 years) were interviewed at >6 weeks postpartum about depression and adherence to: infant nevirapine administration, infant HIV test, feeding methods, maternal ART, contraception. Depression was defined as a Hopkins score >1.75 and examined as a predictor of adherence score (calculated from principal components of four self-report questions standardized 0-100) using linear regression with White standard errors.

Results: Approximately 10% of the sample met criteria for depression, and 79% reported remaining on ART postpartum. Among women on ART, median (Q1, Q3) adherence score since delivery was 88.3% (81.4, 93.9). 44 infants should have been receiving nevirapine; 3 (2%) of were not. Of infants taking nevirapine, average reported adherence was 94%. 99% of infants received an HIV test, and 99% of mothers obtained the result. 100% of women reported a single feeding method (only 28% were exclusively breastfeeding) and 94% had initiated contraception. Depression was not associated with maternal adherence to ART or other outcomes.

Conclusions: Adherence to the postpartum PMTCT cascade among women enrolled in antenatal care was high, and depression was not associated with PMTCT behaviors. Results may be influenced by sampling; women who enrolled in antenatal care may have better adherence to the PMTCT cascade and lower rates of depression than women who did not. Greater understanding of how to identify women who will struggle with the postpartum PMTCT cascade is required.



139 Reasons for Discordance Between Adherence Measures in Adolescents

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Background: Low cost measures of adherence such as self-report, parent-report, pill counts, and pharmacy refill data frequently yield discordant adherence results. Understanding reasons for the disagreement might allow for better approaches to monitoring and supporting treatment adherence.

Methodology: Focus groups and semi-structured interviews were performed with adolescents (10-19 years old) having discordant results in a Botswana-based adherence study using microelectronic medication caps and 4 low-cost adherence measures. Their parents or guardians ("parents") were invited to take part in separate focus groups and interviews. Discordance was defined during the first year of monitoring as at least two 3-month intervals with a $\geq 10\%$ difference in adherence values between methods (e.g., adherence 100% by self-report, but $< 90\%$ by pill count). Data were analyzed using qualitative content analysis.

Results: 55 adolescents and 26 parents described deceptive practices including lying, hiding pills, and discarding pills. Motivations for deception included avoiding admonishment by parents and clinic staff, avoiding being referred for adherence counseling sessions, fear of disappointing adults, and feelings of guilt. Several parents of non-adherent adolescents expressed confidence that their adolescents were currently adherent to treatment despite having awareness of past poor adherence. Discordant adolescents reported their parents having high expectations for adherence; not appreciating how difficult excellent adherence is to maintain; and not providing adequate social support, including consistent supervision. Adolescents and parents both described being motivated to lie to clinic staff by having received negative feedback for prior poor adherence.

Conclusions: Our data suggest that adolescents are deceptive about non-adherence for several motivating reasons. Receiving positive feedback for truth-telling, rather than positive feedback only for excellent adherence, might help adolescents and their parents to develop stronger treatment alliances with each other and with clinic staff, which may result in better outcomes.

140 Effect of Adherence to ARVT on the Risk of Perinatal HIV Transmissions

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Background: HIV-positive woman during pregnancy can experience considerable biological, economic and social difficulties which can adversely influence observance of recommendations on PMTCT as well as regularity of taking antiretroviral medicines.

Research Objective: To study the effect of adherence to ARVT on the risk of perinatal HIV transmission.

Methodology: The research was conducted in 2007-2012. The population under study included 148 HIV-infected pregnant women who were divided into 2 groups: group 1 (basic) was composed of 50 women with occurred perinatal HIV transmission to their neonates; group 2 (comparison) included 98 women whose children were born non-infected.

Results: In the basic group, most of women (76%) did not receive ARVT during pregnancy and childbirth for the various reasons; it possibly was the major cause of the perinatal HIV transmissions to the newborns. In the comparison group, all women received the ARVT course. In the basic group, a high level of adherence was found only in 14% of the women whereas in the comparison group, this indicator made 78.6%. In women with the occurred HIV-transmission, injection use of drugs was registered 4 times more often (the value of the test χ^2 is 99%). Drug consumption undoubtedly renders negative influence on adherence to ARVT as well, it being a risk factor of perinatal transmission of HIV.

Conclusions: Absence or a decrease in adherence to ARVT is one of risk factors of perinatal HIV transmissions (the value of the test χ^2 is 99%). However, it should be emphasized that evaluation of adherence is subjective being frequently based only on the data presented by the patient, and thereupon errors in its assessment are possible.



141 Unmet Needs are Associated With Poor Outcomes in HIV Care Among Out-of-Care Hospitalized HIV Patients

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Background: Unmet needs among hospitalized HIV patients may delay or prevent engagement in HIV care following discharge, potentially leading to worse clinical outcomes. Using data from out-of-care hospitalized HIV patients, we examined the impact of unmet needs on re-engagement in HIV care and VL.

Methodology: Baseline and 6-month follow-up data from a cohort of out-of-care hospitalized HIV-infected patients at a large publically funded hospital who were enrolled into a randomized intervention trial between July 2010 and June 2012 were used. The baseline survey included 19-items on personal and medical needs in the 6 months before hospitalization and whether these needs were met or unmet. Individual unmet needs were evaluated independently and the count of unmet needs was associated with the outcomes. Outcomes were re-engagement in care (attended HIV appointments within 0-30 days and 30-180 days) and VL improvement (\log_{10} reduction at 6-months or VL <400 copies/mL). Multivariate analyses were conducted to examine associations between unmet needs and outcomes. The intervention had no effect on these outcomes and thus was not included as a covariate.

Results: 417 HIV-infected patients were enrolled. 83% had >1 unmet need. The most frequently reported unmet needs were dental (68%), financial (58%), food (50%), and transportation (47%). 56% had >3 unmet needs. Patients with unmet needs for housing ($p > .3$) were less likely to experience VL improvement (odds ratio = 0.45; $p < 0.03$) although greater unmet needs were not associated with re-engagement in care.

Conclusions: The vast majority of hospitalized out-of-care HIV persons report unmet needs. Efforts to address unmet needs in hospitalized HIV patients prior to discharge may improve outcomes.

142 Gender-Specific Combination HIV Prevention: Baseline Results From the MP3 Youth Pilot Study

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Background: Female and male youth (ages 15-24) in sub-Saharan Africa are disproportionately at risk of contracting HIV compared to adults. The MP3 Youth pilot study in Kenya delivers a combination HIV prevention package of evidence-based, gender-specific primary prevention interventions in mobile-health settings. We report baseline results.

Methodology: The MP3 Youth package includes effective combination HIV prevention interventions for female and male youth, identified through focus groups, systematic review, and modeling. All youth: HIV Counseling and Testing, condoms and facilitated linkage to care for HIV-positive; For males: medical male circumcision (MMC); For females: contraception/family planning, Pre-Exposure Prophylaxis (PrEP) for HIV negative out-of-school females, and conditional cash transfer (CCT) for those in-school. The study evaluates coverage, uptake, intervention acceptability, and feasibility.

Results: In the first four of 10 planned mobile health events, we enrolled 294 participants; 57% female, mean age 19 years. Eighty-four percent reported sexual activity; 15 years was the mean age of coitarche (range: 5-22 yrs). Twenty of 30 HIV infections were new diagnoses ($F = 23$; $M = 7$). Thirty-percent were eligible for ART initiation and facilitated referrals were completed. All were enrolled in a longitudinal SMS-cohort. MMC uptake was low. Only 3 of 26 eligible males chose MMC. To date, approximately 46% of females participants may be eligible for CCT and 9% may be eligible for PrEP.

Conclusion: Mobile events are an acceptable/feasible strategy for offering combination HIV prevention interventions to male and female youth. Mobile integrated HIV services can effectively identify previously undiagnosed HIV-positive youth and link them to care.



143 Validity Testing of A Novel Picture Pill Count Adherence Method

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Background: The Music for Health Project (MFHP) is an mHealth HIV self-management intervention that uses an innovative picture pill count (PPC) and electronic self-report survey (SPC) to assess monthly medication adherence. Through PPCs, participants report ART adherence by taking smartphone photographs of the pills remaining in their pill bottles and sending them to research staff via multimedia messaging services. We report the preliminary criterion validity of the PPC among MFHP participants.

Methodology: We compared PPC and SPC results at baseline (T1) and post-baseline (T2). At T1, participants completed the PPC and SPC with staff assistance. One to six days afterward, PPCs and SPCs were independently repeated (T2). Participants electronically reported the number of pills remaining in their pill bottles (SPCs) and transmitted pictures of their remaining pills/pill bottles (PPCs). This analysis was conducted for one drug only. For participants prescribed multi-drug regimens (n = 13; 38%), the first medication alphabetically listed was used for analysis. Data were examined with correlations and ratios.

Results: Of 37 participants, 92% (n = 34) completed PPCs and surveys at T1 and T2 (African American [n = 24; 71%]; male [n = 26; 77%]; 18-56 years [mean 34]). Correlations showed strong agreement between PPCs and SPCs at T1 (r = 1.0; p ≤ 0.001) and at T2 (r = 0.997; p ≤ 0.001). At T1, 97% of participants (n = 33) demonstrated exact agreement between PPCs and SPCs. At T2, exact agreement decreased to 77% (n = 26). Disagreement was evenly split between reporting higher SPC or PPC results.

Conclusion: There were near-perfect correlations between PPCs and SPCs at T1/T2; however, the proportion of participants with perfect agreement dropped 20% between time points. Reasons for discrepancies may include typographical errors, miscounts, or PPCs/SPCs conducted at different times of the day (e.g., before or after the daily dose was taken). Further research is recommended to more fully investigate these differences and reliability and validity of PPC.

144 'It Will Remind me to Take my Doses on Time': Views of Participation in an Antiretroviral Therapy Adherence Intervention Trial in China

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Background: The 'China Adherence through Technology Study' assessed the effect of an antiretroviral therapy (ART) adherence intervention in southern China. The 6-month trial provided subjects with web-linked medication containers that monitor adherence in real time. These devices facilitated a 'real-time feedback' intervention that encompassed triggered SMS reminders to subjects' cell phones when doses were not taken on time, supplemented by data-informed counseling when monitoring indicated sub-optimal adherence (<95%) during the previous month. Given the novelty of the intervention, the study incorporated a qualitative component to explore subjects' experiences.

Methodology: Intervention subjects were selected purposefully for participation in in-depth interviews (IDIs) at their sixth and final intervention-period clinic visit. IDIs were conducted using a semi-structured guide, with questions covering views and experiences regarding device use, the triggered reminders, and counseling informed by device-generated adherence data. IDIs were recorded, transcribed, and translated into English; transcripts were coded in NVivo using a thematic approach.

Results: Twenty intervention subjects participated. 65% were male (13/20); mean age was 32.3. Most (18/20) had completed middle school and the majority were single (17/20). Nearly all (18/20) were positive about use of the device, noting that it improved their adherence competency and increased their motivation to be adherent. Nearly one-third (6/20) liked being watched or monitored. All subjects liked the triggered reminders, portraying them as "discreet" and "helpful". One explained: "this real-time reminder reminds me to take my medicine on time and not to miss any." Since the majority had high adherence, only nine subjects participated in data-informed counseling; of these, two described it as helpful in supporting their adherence.

Conclusions: ART patients in China were generally positive about participating in an adherence intervention using real-time monitoring technology to deliver triggered reminders and data-informed counseling. Real-time feedback appears promising for improving treatment of HIV and other chronic illnesses.



145 Access to Stable Housing and Adherence Support Services Improve Antiretroviral Adherence Among HIV and Hepatitis C Co-Infected Individuals in British Columbia

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Background: Hepatitis C virus (HCV) is a risk factor for and common comorbidity associated with HIV. Individuals with HIV/HCV co-infection face serious health challenges including risk of end-stage liver disease. The purpose of this study was to compare socio-demographic and clinical characteristics between HIV/HCV co-infected and HIV mono-infected individuals and to determine covariates of optimal ART adherence among co-infected individuals enrolled in a large cohort of HIV-positive individuals in British Columbia, Canada.

Methodology: The study utilizes survey data from the Longitudinal Investigations into Supportive and Ancillary Health Services (LISA) study collected between 2007 and 2010 across British Columbia. This cross-sectional data is linked with longitudinal clinical data through the provincial Drug Treatment Plan (DTP). HCV co-infection status was obtained through self-report. Optimal ART adherence was defined as $\geq 95\%$ based on pharmacy refill compliance. Multivariable logistic regression models compared optimal adherence between HIV/HCV co-infected and HIV mono-infected individuals, as well as independent covariates of optimal ART adherence among co-infected individuals.

Results: Of 912 included participants (28.2% women), 536 (58.8%) were HIV/HCV co-infected. In adjusted multivariable analysis, co-infected individuals were significantly more likely to have a history of IDU (adjusted odds ratio [AOR]: 20.8; 95% confidence interval [CI]: 11.2-38.5) and incarceration (AOR: 2.52; 95% CI: 1.41-4.51), and less likely to be optimally adherent (AOR: 0.53; 95% CI: 0.28-0.99). Optimal adherence among HIV/HCV co-infected participants was associated with stable housing (AOR: 1.86; 95% CI: 1.14-3.05) and accessing an adherence support program (AOR: 4.76; 95% CI: 2.62-8.57).

Conclusions: HIV/HCV co-infected individuals exhibit significantly lower ART adherence than HIV mono-infected individuals. Stable housing and adherence support services were associated with improved adherence within this demographic. The findings highlight the importance of integrating adherence support and social services, such as housing outreach, with ART treatment programs for HIV/HCV co-infected individuals.

146 Text Messaging Responses Correlate With Tenofovir-Diphosphate Dried Blood Spot Concentrations Among Men Who Have Sex With Men on Pre-Exposure Prophylaxis (PrEP)

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Background: PrEP effectiveness is strongly linked to adherence. We sought to validate a daily texting adherence metric (individualized Texting for Adherence Building, iTAB) using a biologic marker (tenofovir diphosphate, TFV-DP, levels in dried blood spots, DBS).

Methods: CCTG 595 is a 48-week RCT testing iTAB to promote PrEP adherence in HIV-uninfected MSM. Analysis was performed on subjects randomized to iTAB with week 12 DBS TFV-DP levels and iTAB data available. TFV-DP levels were compared to proportion of messages responded to positively and adherence patterns over 34 days (two TFV-DP half-lives) prior to week 12. Baseline risk factors and demographics were explored as covariates of adherence. Methods for statistical analysis included correlation test and Wilcoxon rank sum test for association, and heatmap and Ward Hierarchical Clustering for adherence patterns.

Results: Among 152 subjects included, the mean TFV-DP concentration was 1353 ± 558 fmol/punch. Participants reported taking a mean of 87% of doses as measured by positive iTAB responses. There was a significant correlation between TFV-DP concentrations and proportions of positive iTAB responses ($r = 0.26$, $p = 0.001$). Subjects with TFV-DP > 891 (consistent with > 5 doses/week) had a higher proportion of positive iTAB responses (89 versus 76%, $p = 0.003$). Subjects clustered into 3 adherence groups by text responses: perfect ($n = 37$), high ($n = 75$) and moderate ($n = 40$) adherence corresponding to mean TFV-DP levels of 1547 ± 694 , 1356 ± 484 and 1167 ± 495 fmol/punch, respectively. Perfect/high adherers had significantly higher TFV-DP concentrations than moderate adherers ($p = 0.037$). Baseline variables associated with higher adherence cluster included older age ($p = 0.002$), non-Hispanic ethnicity ($p = 0.027$) and less drug use ($p = 0.005$).

Conclusions: Early adherence to PrEP was high among iTAB users. Subjects with a higher proportion of positive iTAB responses had higher TFV-DP levels and were more likely to have TFV-DP levels consistent with taking > 5 doses/week. As iTAB data correlates with this biologically-confirmed adherence marker, iTAB might be useful to monitor MSM on PrEP.



147 Barriers to Linkage and Health Care Attitudes in Individuals Recently Tested for HIV in Non-Traditional Settings

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Background: Despite advances in HIV prevention and care, new infections remains stable. Testing and linkage to care are critical initial steps in the care continuum. We explored demographics, health care attitudes and behavioral risk factors at the time of linkage of newly diagnosed HIV-positive and high-risk HIV-negative individuals.

Methodology: CCTG 593 examines whether individuals recently HIV tested at a University-based ER, local health department or research-centered testing site accept assistance with linkage to either HIV care or PrEP. Subjects completed an iPad-based questionnaire including demographic, socioeconomic and risk behavior data. Chi-square tests were used for comparisons between HIV-positive and -negative individuals.

Results: Of 118 individuals, 88 were HIV-negative and 30 HIV-positive. All subjects were male except for 1 HIV-positive female. The mean age of HIV-negative and -positive individuals was 35 and 36 years, respectively. HIV-negative individuals more often lived in the US their whole lives (83 versus 50%, $p = 0.001$), had more education (53 versus 84%, $p < 0.001$) and were privately insured (45 versus 3%, $p < 0.001$). HIV-negative individuals reported more STIs (66 versus 33%, $p = 0.003$) and condomless sex (91 versus 60%, $p < 0.001$). HIV-positive individuals tested more often due to illness (20 versus 5%, $p = 0.017$), whereas HIV-negative individuals most frequently cited unprotected sex, free testing and routine medical care as reasons for testing. Barriers to accessing care were similar with both groups not knowing how to access care and cost. HIV-positive individuals were concerned about people thinking they were infected (50 versus 16%, $p < 0.001$) and cited transportation as an incentive for engaging in care (17 versus 5%, $p = 0.05$).

Conclusions: Our findings support the National HIV/AIDS Strategy promoting routine, free HIV testing to increase accessibility in non-traditional settings where sick patients may present. After HIV testing, providing individuals with information on health care coverage, stigma reduction and transportation assistance may mitigate barriers to care.

148 Analysis of HIV Medication Adherence and Viral Load in Academic Outpatient Medical Clinic

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Background: Highly active antiretroviral therapy (HAART) has transformed HIV infection from a fatal to a manageable disease. Strict adherence to medication therapy is considered essential for suppression of the virus. Previous studies, using unboosted protease inhibitors, showed that >95% adherence is necessary for success. However, current medication regimens are more potent, have a higher barrier to resistance, and have less toxicities than previously used regimens. This may allow for more forgiveness in regards to adherence.

Methodology: This single-center retrospective analysis investigated the HIV viral loads of patients filling at an outpatient infectious disease pharmacy within an academic medical center. The proportion of days covered (PDC) was used as the adherence measurement and calculated using pharmacy fill data. Patients were required to have at least one 30-day medication fill in the 120 days prior to the viral load. Only patients who were stable on their regimen (on for at least 6 months) were included.

Results: Overall 308 patients were included in this analysis and 277 (90%) had suppressed virus (HIV viral load ≤ 200 copies/mL). When taking into account adherence, 95.8% of patients who were $\geq 95\%$ adherent had suppressed virus. Interestingly, this percentage did not change significantly when we included patients who were $\geq 80\%$ adherent (96.2%), OR = 0.95, $p = .92$. Patients who were less than 80% adherent had a 69.4% of being virologically suppressed. These results remained true across non-nucleoside reverse transcriptase inhibitor (NNRTI) based regimens, protease inhibitor based regimens, and integrase inhibitor based regimens.

Conclusions: Adherence to HIV medication is essential to successful viral suppression, but this study suggests that the 95% cutoff for "successful" adherence may not be a firm number, but more of a gradual line. Patients should continued to be counseled on adherence to support successful treatment and overall patient health.



149 Description of the Amount of Adherence and the HAART Regimens in a Group of Patients With Viral Load <50 copies/mL

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Background: High active antiretroviral therapy (HAART) has a positive consequence in people living with HIV/AIDS. Nevertheless, poor adherence to HAART will lead to treatment failure and the development of drug resistance, limiting the effectiveness of therapy. There was uncertainty about the amount of A that was necessary to achieve treatment success. The aim of this work is to describe the amount of A (measured by pharmacy drug refills) and the HAART regimens in a group of patients with viral load (VL) <50 copies/mL.

Methodology: A retrospective study carried out at Hospital Ramos Mejia, Buenos Aires, Argentina. The Pharmacy records of the year 2013 of the 280 patients with VL <50 copies/mL were reviewed. The patients were divided into five categories according to their drug refill percentage: 100%, 99- 95%, 94- 90%, 90-80 % and <80%. The HAART regimens of those patients were analyzed.

Results: More than a half of patients with VL <50 copies/mL, have a level of A of 100%. A total of 111 patients (39.6%) have a level of adherence less than 95%, among them 65 (58.6%) have a NNRTI in their HAART. Only 11 patients (less than 4%) have a third-line HAART regimen.

Conclusions: As referred by bibliography, the best results are achieved with levels of adherence close to 100%, but it appears, that HAART regimens with NNRTIs or boosted PIs are less "demanding" in terms of adherence. However more research is needed to strongly support this finding.

150 Reasons for Intentional Non-Adherence Among Patients Treated for Multiple Chronic Co-Morbidities

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Background: We sought to discover reasons for intentional non-adherence among patients treated for conditions dependent on high adherence in order to avoid severe illness or death.

Methodology: We conducted one-on-one in-depth qualitative interviews with 218 patients prescribed 1 or more of the following medication classes: antiretrovirals, antihypertensives, cardiovascular medications (cholesterol/lipids), diabetes medications, anticonvulsants, antidepressants, mood stabilizers, antipsychotics, osteoporosis. We interviewed English and Spanish speakers from three community health clinics (Baltimore, MD; Ridgeland, SC; Boston, MA) and three HIV outpatient clinics (Birmingham, AL; San Diego, CA; Seattle, WA). Patients received \$25 for participating in interviews. Interviews were audio-recorded and transcribed, then coded by two coders into 8 barrier areas. A third team member reconciled coding differences. Interview excerpts were matched to the content of a previously developed adherence item pool in which items were coded into the 8 barrier areas using the same method. Excerpts that did not match to item pool content were evaluated for creation of new items. Participants were 36% female, 38% African American, and 22% Latino, and 14% spoke Spanish as their primary language.

Results: Top reasons for intentional non-adherence were: to avoid side effects (33%), feeling hopeless/depressed (13%), being busy (12%), not wanting to be reminded of illness (9%), change in daily routine (9%), feeling sick/ill (9%), did not think needed medications (8%), hard to swallow/bad taste (7%), felt was on too much medication (6%), not enough privacy (6%), no food available (6%), avoidance of mixing medications with drugs or alcohol (6%).

Conclusions: Many reasons for intentional non-adherence were potentially addressable with mental health or case management resources, including depressive symptoms, difficulty accepting illness, lack of privacy, and availability of food. Systematic, routine capture of patient-reported reasons for non-adherence may inform intervention strategies that are highly specified to patients' needs.



151 Qualitative Assessment of Medication Understanding Among Patients Treated for Multiple Chronic Co-Morbidities

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Background: We assessed the medication literacy of patients treated for multiple chronic conditions including how patients referred to their medications and their understanding of medication purpose.

Methodology: We conducted one-on-one in-depth interviews with 58 patients prescribed 3 or more of the following medication classes: antiretrovirals, antihypertensives, cardiovascular medications (cholesterol/lipids), diabetes medications, anticonvulsants, antidepressants, mood stabilizers, antipsychotics, osteoporosis medication. We interviewed both English and Spanish speakers from three community health clinics (Baltimore, MD; Ridgeland, SC; Boston, MA) and three HIV outpatient clinics (Birmingham, AL; San Diego, CA; Seattle, WA). With content analysis, interviews were coded for themes including identification, categorization, and perceived function of medications. Sub-codes were created for each category using open coding. Inter-rater reliability was high.

Results: Participants were 40% female, 29% African-American, 22% Latino, 21% Spanish-speaking, and 60% living with HIV. Patients overwhelmingly referred to their medication by disease category (i.e., "HIV meds") and did not distinguish between medications within a class, particularly patients on antiretrovirals. Patients on med-sets had more difficulty naming individual medications. Common categorization methods were by disease category or time of day taken ("morning/evening meds"). One third (37%) of patients had at least one misconception about one or more of their medications; 33 misconceptions were identified. In 36% of these, patients mistook medications as being for "heart", "blood pressure" or "cholesterol" that were not; 25% of these conflated or confused "blood pressure" and "cholesterol" medications. Six patients (11%) could not identify a medication's purpose (in 4 of these cases, the medications in question were for serious chronic conditions).

Conclusions: Understanding how patients label or think about their medications is important for effective communication and necessary for systematic assessment of adherence. Patients may benefit from a review of each medication's purpose, which ideally would occur with the actual pills or their visual representations.

152 Expanding Access to HIV Diagnostics: Costing of Point-of-Care CD4 Testing Using Alere Pima Technology in Primary Health Care Facilities in Tanzania-Case Study in Iringa and Njombe Regions

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Background: Fifty percent of individuals diagnosed to be HIV-positive are lost from care before completing Antiretroviral medicines eligibility assessment in sub-Saharan Africa. Early initiation on Antiretroviral Therapy (ART) is cost effective but the majority of HIV-positive individuals present late to health facilities. Introduction of Point-Of-Care (POC) CD4 testing to primary health care facilities is possible and may lead to CD4 testing and receiving results on the same day, hence timely initiation of ART. The aim of the study was to explore cost implication in decentralizing Point-Of-Care Alere PIMA CD4 Testing in Primary Health Care facilities in Tanzania.

Methodology: Relied on secondary data by reviewing both the grey and peer reviewed literature. Micro-costing approach to costing was used to establish unit cost per Point-Of-Care CD4 test at primary health care facility in Iringa and Njombe regions in Tanzania. All prices were converted into 2012 prices.

Results: Average unit cost per CD4 test using Alere PIMA POC technology is US\$ 11.60 and US\$ 15.26 at health center and dispensary level respectively; ranging from US\$ 11.02 for health centre in Njombe, US\$ 12.19 for health centre in Iringa, US\$ 14.78 for dispensary in Njombe to US\$ 15.75 for dispensary in Iringa. PIMA reagents and quality assurance constituted 53% and 30% of the total unit cost per CD4 test. PIMA specific supplies and quality assurance constituted 53% and 30% of the total unit cost per CD4 test and hence the main drivers of cost per CD4 test.

Conclusions: Decentralization of POC CD4 testing to primary health care facilities is feasible and can be expected to contribute to early initiation of ART for improved health outcomes. The high cost of the PIMA cartridge needs to be lowered in order to make cost per CD4 test more affordable in limited resource countries.



153 A Patient-Centered Approach for Assessing Treatment Motivation Among Patients Lost to Follow Up for HIV Care

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Background: Retaining patients living with HIV in medical care is a major challenge facing efforts to improve individual health outcomes and prevent the onward transmission of HIV. Little research has focused on the individual-level assessment of treatment motivation among patients lost to follow up for care. Such assessments could provide information on specific treatment facilitators and barriers for members of this patient population and aid in the development of interventions tailored to the needs of the individual patient. The purpose of this study was to test a patient-centered, web-based approach designed to provide a comprehensive assessment of treatment motivation among patients with poor treatment engagement.

Methodology: The sample consisted of 18 patients who were lost to follow-up for HIV care at two Chicago hospitals. A range of treatment-related thoughts and beliefs were elicited from participants by study interviewers. Using the web-based assessment program, participants rated the similarity of all possible pairings of their thoughts and beliefs as well as descriptive statements related to approach, avoidance, intrinsic, and extrinsic motivation. Multidimensional scaling (MDS) analyses were conducted to examine how an individual patient's specific thoughts and beliefs affected treatment-related behaviors.

Results: Participants compared a mean of 188 paired combinations (SD = 39; range 137 to 253). MDS generated two-dimensional configurations that depicted how an individual patient's thoughts and beliefs were related to specific types of treatment motivation and behaviors. The configurations mapped how particular thoughts either facilitated or served as barriers to treatment initiation and adherence.

Conclusions: Findings showed that the web-based approach using MDS was feasible as a patient-centered assessment approach. In addition, findings suggest that the assessment approach may have applications as part of interventions targeting patients with poor HIV treatment engagement.

154 Pediatric HIV Case Finding Amongst Children of Mothers Currently Enrolled in HIV Care and Treatment Program in Rwanda

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Background: Rwanda has made tremendous improvement in the decentralization and integration of HIV services, more than 90% health facilities across Rwanda have HIV full package services resulting into ART coverage of 93.5% (annual report) as of June 2014. using UNAIDS EPIS Spectrum estimates, children under 15 years old have a low coverage compared to adults, we assessed the magnitude of this gap among a sampled number of HIV-positive mothers enrolled in care and treatment program.

Methodology: From HIV drug resistance monitoring survey conducted in 2014 within 40 randomly chosen ART health facilities; we did a secondary analysis among 364 HIV-positive women, 15 -63 years old. Through oral interview, participants were asked regarding number of pregnancies in life and after HIV diagnosis, number of children under 15 years, and HIV testing status among those less than 15 years. We estimated the proportion of children who missed the opportunity for HIV testing.

Results: Overall, The median number of pregnancies among our sample was 4; Among 364 women, 288 (79.1%) reported having at least one child less than 15 years; 84.7% reported to test all of them and 15.3% didn't, of which 10.1%; 3.5%; 1.7% had one, two and three children respectively. Among 249 children tested reported by their mother for HIV 15.9% were positive.

Conclusion: This analysis revealed a gap of 15.3% among HIV infected mothers that have children with unknown testing status; although this number is less than the estimates of 50% gap. These findings suggest strategies should be implemented to improve testing for children of mothers currently enrolled in HIV care and treatment programs and in the community.



155 TB is Still a Key Determinant in the Mortality of HIV Patients who are on HAART

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Background: People with HIV and latent TB infection are at much higher risk of progressing to active TB disease than people with latent TB infection alone. TB remains to be a major illness among people living with HIV/AIDS. According to WHO, of the 9.0 million new TB cases in 2013, more than 1.1 million (13%) were people living with HIV/AIDS (PLHIV). PLHIV accounts for only 0.5% of the world population, yet 13% of the total TB cases are among PLHIV. In this study, we intend to examine survival and determinants of survival of the TB/HIV co-infected participants at the seven advanced clinical monitoring (ACM) – a multi-site cohort study that involves 7 university hospital sites in Ethiopia.

Methodology: A prospective a cohort study in which all HIV patients who developed TB after starting ART were included as study participants. Those who started ART after TB treatment were excluded, because the survivors could potentially be over represented. TB status of the study participants was treated as time dependent variable. Breslow-Day test was used to assess homogeneity in terms of baseline clinical and demographic characteristics of patients among sites. Incidence of TB and mortality were compared using time on ART and between ART patients with TB and those without TB.

Results: 4,328 patients were followed for a median time of 1,710 days. Hence, information collected from 4,026 was included in this paper. Among the study participants a total of 355 incident TB cases were identified resulting in TB incidence of 2.5 [2.3-2.8] per 100 person-years. Patients who developed TB while on ART had significantly increased risk of death (crude HR = 3.90 95% CI: 2.33-6.54) compared to those who have no TB. After adjusting for baseline clinical and demographic characteristics the Hazard still remains statistically significant (Adjust HR = 2.77; 95% CI: 1.86-4.12). Other significant determinates of mortality in the study population were age at start of ART (with 1 year increase being associated with the HR going up by 4% (95% CI 1.00-1.08)), time to the diagnosis of active TB (when a patient develops TB later in their ART treatment, the risk decline by 3% (95% CI 0.95 - .99) each month).

Discussion: The findings of this study reveal that TB (especially when it occurs early in the course of HAART) increases the mortality among HIV infected patients even with ART. If patients stay free of TB longer, then the risk of death from TB decreases. Treatment options to keep patients on ART free of TB longer should be looked into. The attention given to the deadly co-infection needs more attention.

156 Collaborating Across States to Achieve the End of AIDS - the HIV Cross-Part Care Continuum Collaborative Initiative

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Background: This national initiative seeks to reduce statewide gaps along the HIV Continuum of Care through the implementation of evidence-based quality improvement projects in each participating state. NHAS and the Presidential Care Continuum Initiative provide a framework for and closing disparities in performance among key demographic groups is a focus in this improvement activity.

Methods: Since 2014, the HIV Cross-Part Care Continuum Collaborative (H4C) has engaged Ryan White HIV/AIDS Program (RWHAP) grantees in five states (Arkansas, Mississippi, Missouri, New Jersey, Ohio), impacting 33,905 people living with HIV (PLWH). Each state has a leadership team to implement H4C activities. Performance measurement (PM) data, HIV Care Continua, and viral load suppression (VLS) cohort data are routinely collected. Improvement strategies implemented in each state are collected and discussed at face-to-face learning sessions.

Results: Learning collaboratives are an effective way to accelerate improvement in performance along the HIV Continuum of Care. By the mid-point of the initiative, one state has already met its VLS cohort goal (88%, n = 602 PLWH achieving VLS). Overall, H4C has met key national aims (i.e., all have quality management infrastructures in place). Gaps in performance between demographic groups have been steadily narrowing over time (ns).

Conclusions: To ensure longevity of the collaborative framework beyond 2015, sustainability plans are being drafted that include data and improvement strategy collection, regional participant training, and virtual learning sessions. Opportunities to maximize rapport-building within and across states are emphasized and RWHAP grantees from other states will be invited to participate in H4C activities.



157 Measuring Antiretroviral Therapy Adherence in Clinical Care Settings in Estonia

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Background: To end the HIV/AIDS epidemic, a new 90-90-90 HIV treatment target has been set for 2020. While PLWHA on antiretroviral therapy (ART) have already reached 2 of the 3 milestones, full HIV control also comprises adhering to the treatment. Easy to implement, valid and cheap instruments to measure adherence are of great practical importance.

Methodology: This cross-sectional study evaluated multiple indirect measures of adherence and their association with viral suppression among 512 adult patients receiving out-patient care in 2 largest HIV clinics in Estonia. Adherence was assessed by 2 self-report measures [3-day recall, visual analogue scale (VAS)], and VAS report on patient adherence by treating physician. The VAS represented a line anchored by 0 and 100%, corresponding to the proportion of prescribed doses taken. Patients with adherence of 95% by 3-day recall, patient- and physician-reported VAS were defined as adherent. Ability of each adherence measure to predict viral suppression (HIV-RNA <40 copies/ml) was evaluated by calculating the area under the receiver operating characteristic (ROC) curve.

Results: Study participants were 60% male, mean age 34 years, infected for average 8.3 years (49% of them through intravenous drug use), and on ART for average 3.1 years. Highly adherent were 74% by 3-day recall, 52% by patient self-report VAS, 56% by treating physician VAS-report on patient, and 55% by (undetectable) viral load. Area under the ROC-curve (AUC) for predicting undetectable viral load was larger for treating physician's VAS report (AUC 0.82, 95% CI 0.79...0.86), compared to patient's self-assessment VAS (AUC 0.70, 95% CI 0.65...0.75) ($p < 0.001$), and 3-day recall [AUC 0.52, 95% CI 0.48...0.56] ($p < 0.001$).

Conclusions: Treating physician's and patient's adherence (self) assessment on VAS were superior to 3-day recall in predicting viral suppression. The most user-friendly adherence measure, best fitting into busy clinic routine, should be implemented to complement adherence monitoring.

158 A Syndemic Index is Associated With Medication Adherence Among HIV-Positive Youth

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Background: Medication adherence among HIV infected individuals is critical given its impact on limiting disease progression and onward transmission. HIV infected youth are an important population in this regard as evidence indicates their adherence is suboptimal and related to multiple psychosocial factors, including mental health problems, substance use, and HIV-related stigma. The purpose of this study was to analyze the effect of multiple psychosocial conditions or "a syndemic" on antiretroviral therapy (ART) adherence among HIV-positive youth.

Methodology: Cross-sectional data from the enrollment visit for two adherence interventions in Chicago targeting HIV-positive youth, aged 16-29, were analyzed to assess the effect of multiple psychosocial conditions (i.e., depressive symptoms, anxiety symptoms, marijuana use, alcohol use, and HIV-related stigma) on self-reported ART adherence. Adherence was regressed on an index of increasing numbers of psychosocial conditions, controlling for demographic and treatment factors as well as enrollment site.

Results: Data from 212 HIV-positive youth were analyzed. The mean age of participants was 24 with the majority being male (89%), Black (87%) and behaviorally infected (91%). Among the overall sample, 38% reported a high level of depressive symptoms and 34% of anxiety. 25% were characterized as having a moderate/high level of marijuana use and 25% a moderate or high alcohol use. A total of 46% reported high levels of HIV-related stigma. In correlational analysis, there was evidence of clustering of psychosocial conditions with significant moderate to high correlations. In adjusted regression analysis, adherence decreased with increasing numbers of syndemic conditions (linear dose response, $p = 0.02$).

Conclusions: This is one of the first studies to document evidence of the relationship between multiple psychosocial conditions and medication adherence among HIV-positive youth. Interventions that address multiple syndemic conditions are likely required in concert with biomedical treatment as prevention for youth living with HIV.



159 The Importance of Gender in Understanding Adherence: A Longitudinal Study Within a Population Based Cohort of HIV-Positive Individuals

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Background: The past decade has seen a global increase in the prevalence of HIV among women. The same gender and structural inequities that result in vulnerability to infection among women may result in vulnerability to poor HIV-related health outcomes among women living with HIV, including higher prevalence of suboptimal antiretroviral therapy (ART) adherence. We undertook this study to examine gender differences in attaining optimal adherence with long-term ART use, while controlling for known confounders, ethnicity and injection drug use.

Methodology: The study sample consisted of HIV-positive adults in British Columbia (BC), Canada, enrolled in the HAART Observation Medical Evaluation and Research (HOMER) cohort, with data collection between 2000 and 2011. Optimal ART adherence was defined as $\geq 95\%$, based on pharmacy refill compliance per six-month period from initiation of therapy onwards. Bivariate analyses and generalized linear mixed models with logistic regression were used to examine the role of gender in ART adherence. Sub-analyses compared men and women by injection drug use status and ethnicity.

Results: Of 3,612 individuals, 718 (19%) women, followed for an average of 54 months, a significantly lower proportion of women attained optimal ART adherence, within the entire sample (54.3% versus 76.3%; $p < 0.001$) and per subgroup. In multivariate models, women maintained an association with suboptimal adherence, within the total study population (adjusted odds ratio [AOR]: 0.53, 95% confidence interval [CI]: 0.43 to 0.66) and among subgroups, including Aboriginal people who use injection drugs (AOR: 0.56, 95% CI: 0.39 to 0.80) and non-Aboriginal people who do not inject drugs (AOR: 0.41, 95% CI: 0.27 to 0.46).

Conclusions: Women living with HIV in BC, Canada, are at greater vulnerability to suboptimal ART adherence than men, overall and within subgroups. Emphasis should be placed on providing better access to women-centered HIV care and support services.

160 Impact of an SBIRT Program in an HIV Clinic

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Background: Compared to the general population, people living with HIV have higher rates of substance use. Left untreated, this can result in poor HIV treatment outcomes, including lower rates of retention in care and adherence to antiretroviral therapy. Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an approach that aims to identify and reduce dependence on tobacco, alcohol and other drugs. To increase early identification of substance use, SBIRT was implemented as part of routine care in an infectious disease clinic in Colorado. The impact of universal screenings on substance use behaviors in the clinic was assessed.

Methodology: This is a retrospective analysis of SBIRT results in an HIV clinic serving approximately 1,700 patients at the University of Colorado Hospital. Two years of data were collected from May 2012 to April 2014. SBIRT screening was offered annually to all patients. Patients with negative screens received positive reinforcement. If positive, the ASSIST was administered. Depending on the score, patients received one of three interventions: brief intervention, brief therapy, or referral to specialty treatment.

Results: In Year 1, 875 patients were screened versus 1,210 patients in Year 2. Data from Year 1 and 2 were compared and showed a 14% decrease in positive SBIRT screens (53% compared to 49%). Results showed reductions in all substance use, except cannabis use among men. Tobacco use fell by 3%. Alcohol Use Disorders dropped from 4% to 2% in men and 3% in women. The interventions were well received among patients, with less than a 1% refusal rate.

Conclusions: This analysis allowed us to see the rate of use for the most reported substances in our clinic. The results suggest that SBIRT services provided in an HIV care setting are associated with modest changes in reported tobacco, alcohol and drug use.



162 Low Levels of Viral Load Suppression Among Individuals Referred for HIV Re-Engagement Services for Those who Relocate and Those who Remain at the Referring Medical Clinic

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Background: People living with HIV (PLWH) frequently experience the need to relocate and/or change providers with disruptions in care. To determine the association between prior markers of care and care transitions, we analyzed re-engagement referral data from July 2013 to June 2014.

Methodology: Re-engagement services were provided by a public health service team (State Bridge Counselors, SBCs) to PLWH identified as out of care by medical clinics, i.e., without both recent (>6-9m) and future medical appointment. Outcomes were categorized as 1) having a care transition (relocating or re-engaging with a new provider); 2) Continuing care (no evidence of another care site) 3) unable to locate or 4) having incomplete record. HIV surveillance data (eHARS) were used for care markers (a CD4 or HIV RNA performed) or viral load suppression (VLs, HIV RNA <200 copies/ml).

Results: Re-engaging clients were male (n = 349, 71%); African-American (n = 377, 76%); heterosexual (n = 234, 47%). At the time of contact, the clients reported transitions in care (n = 112, 23%); no transitions (n = 177, 36%); were not located (n = 90, 18%) or records were incomplete (n = 118, 24%). Prior to the referral, transitioning clients vs. continuity clients had similar markers of care (58% vs. 51%; RR:1.15 95% CI: 0.93, 1.42). VLs, in 12m prior to referral, was very low even when restricted to those with a marker of care (36%, missing = excluded). Clients reporting transitions in care had higher levels of VLs vs. continuity clients during the year prior to referral (All clients: transitioning = 27%, continuing = 15%; RR: 1.83 95% CI: 1.14, 2.91; Restricted to only clients with care marker: transitioning = 46%, continuing = 29%; RR: 1.59 95% CI: 1.05, 2.42).

Conclusions: Clients with both care transitions and care continuity at the time of re-engagement referral had low levels of care and viral load suppression. Both groups of referred clients had high needs for access to HIV care but may need distinct interventions.

163 Effective Roll Out of Option B+ in Rural Namibia Africa

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Introduction: In 2013 WHO recommended Option B+ to prevent MTCT. In accordance, the 2014 Namibian National Treatment Guidelines called for implementation of same day initiation of antiretroviral therapy for newly diagnosed HIV-positive pregnant women and those already on AZT PMTCT. Despite these recommendations, challenges remain to the roll out of Option B+, particularly in largely remote locations. We present successful Option B+ operating procedures from two regions of rural northern Namibia.

Description: HIV and Antenatal specialty doctors, nurses, pharmacists and testing counselors addressed the urgent need for improved access to care for PMTCT. The following operating procedures were developed:

1. Patient presents to antenatal clinic visit and either :
 - a. Test positive for HIV or is
 - b. Currently on AZT for PMTCT
2. Referred to test counselor for:
 - a. Post-test counseling
 - b. Adherence counseling
 - c. Patient Care Booklet opened
3. Sent back to ANC nurse
4. Urine dipped for protein:
 - a. $\leq 1+$ protein- begun on TDF based cART, 2 week starter pack
 - b. $>1+$ protein
 - i. no previous AZT -begin AZT based cART, 2 week starter pack
 - ii. current or previous AZT- begin ABC based cART, 2 week starter pack
 - iii. urgent referral to regional visit and chem panel
5. Stable: follow-up 2 week visit, chem panel ordered, meds refilled
6. Ill patients referred to nearest clinic prior to cART

Lessons Learned: In two months Option B+ was rolled out to the regional, NIMART and >30 outreach clinics. Maternity ward registries in one regional hospital showed 100% penetration of cART in patients from clinics where Option B+ had been rolled out.

Recommendations: These operating procedures are easy to implement, do not require an HIV trained nurse or doctor to initiate and make the roll out of Option B+ feasible in even the remotest locations in sub Saharan Africa.



164 'Sometimes We Take a Vacation': Qualitative Study on Barriers to HIV Treatment Adherence Among PLWH in Central America

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Background: Eligibility criteria and sub-optimal coverage inhibit many PLWH in Central America from receiving the benefits of ART. Social, structural, and individual factors also impede effective treatment and care. In 2012, as part of the USAID-funded combination prevention program, PASMO conducted formative research to explore barriers and strategies for achieving ART adherence.

Methods: The study was conducted in Nicaragua, El Salvador, Costa Rica and Panama among male and female PLWH, with deliberate recruitment of the program's key populations: men who have sex with men, transgender women, female sex workers, and men at risk and women from the general population. 61 life histories and 20 focus groups were used to identify key moments in the treatment continuum when adherence was compromised and to generate consensus regarding challenges in ART adherence. To document the experience of treatment successes and challenges over time the sample was segmented on time since diagnosis, using 55 months as a threshold.

Results: PLWH's relationship with ART is complex and mutable. The construct of adherence is frequently re-defined, depending on PLWH's experiences, expectations, and evolving needs. PLWH develop alternatives to adherence, often in response to a medical system perceived as overly strict and inflexible. These include: "permissions," where ART is suspended during short and discrete periods, usually for specific reasons (attending a social event); or "vacations" when ART is suspended and PLWH take a break from the routine and re-energize. Self-regulation of ART is often practiced, where PLWH regulate or modify their dosage or schedule, but without the guidance of a provider. Self-regulation gives PLWH control over treatment, without completely abandoning it or feeling non-adherent.

Conclusion: The threats to treatment adherence vary throughout the continuum of ART. PLWH often develop their own strategies when integrating ART into their lives. These insights provide key intervention points for programs intending to improve ART adherence.

165 Racial and Ethnic Disparities in Engagement in Care and Viral Suppression Among Known HIV-Positive Persons in Tennessee in 2012

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Background: The National HIV/AIDS Strategy (NHAS) stresses the importance of reducing HIV-related health disparities by 2015. Following guidance from the CDC, we quantified racial/ethnic disparities in engagement in HIV-care (EC) and viral suppression (VS) among PLWH in Tennessee in 2012 as these results may differ from national findings.

Methodology: Cross-sectional data were obtained from the statewide enhanced HIV/AIDS Reporting System (eHARS). Gender, age, race/ethnicity, residential county, exposure category, and reported CD4 counts and HIV-1 viral loads (VL) from 2012 were extracted. Individuals with ≥ 2 CD4 or VL results ≥ 3 months apart were EC; those with ≥ 1 VL and a final VL < 200 copies/mL achieved VS. Modified Poisson regression adjusting for all available covariates was used to estimate prevalence ratios (PR) for both outcomes by race/ethnicity.

Results: As of December 31, 2012, 14,671 known PLWH were living in TN: 73% were men; median age was 45 years; 46% had MSM and 37% had heterosexual contact as HIV exposure category; 37% were White, 57% were Black, and 4% were Hispanic; 55% were EC, and 54% achieved VS. In adjusted regression, Hispanics were less likely to be EC (PR = 0.81; 95% CI: 0.74,0.89) compared to Whites. Both Blacks (PR = 0.86; 95% CI: 0.83,0.89) and Hispanics (PR = 0.80; 95% CI: 0.73,0.87) were less likely to achieve VS compared to Whites.

Conclusions: Racial/ethnic disparities exist in important NHAS outcomes in TN. These data are important for statewide establishment of goals, programmatic planning, and service implementation to reduce disparities. Annual monitoring and analyses including additional health determinants are needed.



166 Implementation of an Intensive Case-Management Based Intervention to Increase Retention in Care Among Out-of-Care Homeless With HIV

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Background: Many homeless HIV-positive patients struggle with HIV management because of substance abuse, untreated mental health disorders, and unmet needs. These challenges present barriers to engagement in HIV care and VL improvement. Using data from a cohort of homeless HIV-positive patients, we examined whether intensive case-management could improve outcomes.

Methodology: This is an ongoing, single-arm study that included out-of-care HIV-infected homeless patients in Houston, TX who were enrolled in a HRSA-funded Special Projects of National Significance demonstration project between September 2013-February 2015. At enrollment, patients were assessed for housing, substance use, mental health, and unmet needs. A housing score was assigned using a 6-point scale (0 = permanent housing to 6 = street homeless). The case-management intervention consisted of a coordinated approach with direct hand-offs focusing on housing, substance use, and mental health. Outcomes were engagement in care (HIV visit within 6-months) and VL <200 copies/mL within 12-months.

Results: 93 patients were enrolled. 73% were literally homeless and the remainders were unstably housed. 72 requested housing assistance, and 89% successfully obtained housing through our program. The mean housing score improved from 4.2 to 2.3 after enrollment. 60 requested mental health assistance and 93% obtained services. 48 needed substance abuse treatment and 92% obtained services. A significant increase in the proportion of patients having an HIV visit within 6-months before to 6-months after enrollment was detected (42% to 68%, $p < 0.01$). A non-significant trend towards improvement in VL <200 from 35% to 46% at 12-months was observed, however many patients had not reached the 12-month endpoint at the time of analysis.

Conclusions: Increased efforts among homeless are needed to facilitate access to housing assistance and treatment for substance abuse and mental illness as a pathway to improving HIV outcomes. Our study suggests using a case management approach focusing on these services is feasible and may yield positive results.



168 Baseline Anticipated use Preference of Oral PrEP Versus Rectal Microbicide Gel by Participants in MTN-017

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Background: Product preferences often exist prior to actual product use.

Methodology: MTN-017 compares the safety and acceptability of 1) daily use of tenofovir (TFV) gel applied rectally, 2) TFV gel applied before and after receptive anal intercourse (RAI) and, 3) daily oral Truvada™. Likelihood of future product use and regimen preference were assessed via computer-assisted self-interview at baseline.

Results: Participants were 195 MSM and transgender women (88% and 12% respectively), mean age 31 years (18-64, SD = 9.26), recruited at eight sites (four in the US, two in Thailand, and one each in South Africa and Perú). A high proportion anticipated being likely or very likely to use Truvada™ daily (88%), Truvada™ with RAI (92%), and TFV gel with RAI (89%). Somewhat fewer (76%) anticipated likelihood of daily use of TFV gel. Given a choice between Truvada™ daily or with RAI, 54% preferred daily vs. 46% with RAI. Given a choice between TFV gel daily or with RAI, there was clear preference for the latter (26% vs. 74%, respectively). While no significant differences by age or sexual identity emerged concerning product preferences, fewer US respondents (59%) reported they were inclined to use TFV gel daily compared with respondents in other countries (90%).

Conclusions: Anticipated future use of PrEP in the form of a pill was quite high; preference did not differ between daily use and use associated with RAI, probably related to experience with pill taking and potential awareness of PrEP's protective effect. Anticipated future use of a microbicide gel associated with RAI was similar to that of oral PrEP probably due to familiarity with rectal lubricant use with RAI. In contrast, based on preferences, the potential use of a gel daily appears to be lower.



169 The Role of Motivation and Guilt in Predicting HIV Adherence in China

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Background: The China Adherence through Technology Study tested an intervention to increase adherence among HIV-positive patients in China using real-time feedback through text message reminders and counseling. This sub-analysis examines factors which may explain the success of CATS, applying self-determination theory (SDT). Our hypothesis was that intervention patients would perceive stronger treatment support from clinicians compared to control patients, leading to greater autonomous self-regulation or motivation to manage medicines. This would lead to greater perceived competence and higher levels of adherence.

Methodology: SDT's constructs for treatment support, perceived competence, and self-regulation were measured using validated scales. A relative autonomy index measured self-regulation: more autonomous types of self-regulation included identified (valuing adherence as personally important) and integrated (integrating adherence goals with other life goals) self-regulation, while more controlled forms included introjected (feeling guilty if a dose is missed) and external (feeling compelled by others). Adherence was measured by electronic pill dispensers. We calculated correlation coefficients to assess relationships among variables and to determine associations with adherence.

Results: The analysis showed robust correlations between treatment support from providers and perceived competence ($r = 0.41$) and autonomous self-regulation ($r = 0.50$); and between self-regulation and perceived competence ($r = 0.76$) (all $p < 0.01$). Among low adherers, we found that introjected regulation (guilt) was positively associated with adherence ($r = 0.22$, n.s.), while feeling externally controlled was negatively associated with adherence ($r = -0.34$, $p < 0.05$). The association between perceived competence and adherence was weak.

Conclusion: With health behaviors such as diabetes care, autonomous forms of self-regulation are often more positively associated with competence and adherence, compared to controlled forms of self-regulation. In contrast, our results suggest that in China, introjected self-regulation (guilt) may be a positive predictor of adherence. The lack of association between perceived competence and adherence suggests that other factors, such as cues to action, may affect adherence.

172 Positive Affect is Associated With Viral Control Among Women With HIV Infection

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Background: This study assesses the relationship between positive affect and viral load among women with HIV infection.

Methodology: Three waves of six month data were analyzed from 1,264 women with HIV infection participating in the Women's Interagency HIV Study (10/11-3/13). The primary predictor variable was self-reported positive affect over two waves of data collection, and the outcome was plasma HIV-1 RNA viral load detection, assessed at the third wave.

Results: In univariate analysis, an undetectable viral load was associated with high positive affect (OR 1.49, 95% CI 1.16-1.90), high HIV antiretroviral adherence (OR 6.68, 95% CI 4.44-10.61), older age (1.02, 95% CI 1.00-1.03), being from a foreign country (OR 1.39, 95% CI 1.05-1.85), being married or living with a partner (OR 1.52, 95% CI 1.17-1.97), lower negative affect (OR 0.96, 95% CI 0.94-0.99), and fewer somatic symptoms of depression (OR 0.95, 95% CI 0.92-0.98), but not with race/ethnicity, cocaine or heroin use, or interpersonal difficulties. In a logistic regression model with 948 women, there was an association between high positive affect and undetectable viral load (OR 1.41, 95% CI 1.02-1.94), after controlling for HIV antiretroviral adherence, age, country of birth, relationship status, and somatic and negative affective symptoms of depression.

Conclusions: Although further research is required to demonstrate causality between positive affect and viral control, this analysis supports further focus on the potential benefits of promoting positive affect among U.S. women with HIV infection.



173 A More Granular Cascade Representation to Facilitate Improved Programmatic Decision-Making

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Background: CIDRZ supports the Government of Zambia's HIV program in a challenging operating environment with large patient volumes and severe infrastructural limitations and a scarcity of healthcare providers. Previous attempts to demonstrate cascade outcomes have not comprehensively accounted for outcomes at each step after enrolment. We worked with partners to conceptualize an innovative and practical approach to presenting the cascade that would allow for easy targeting of patients with suboptimal outcomes.

Methodology: The HIV care and treatment program in Zambia uses a national information system, SmartCare. We include patient interactions in 71 public ART facilities (40 urban) in 4 provinces between January 2009 and 31 January 2011, and reflect the eligibility criteria of that era (CD4 <200, CD4 200-350 + WHO Stage III, or WHO stage IV). Our analysis includes all patients enrolling in care at these sites during the two-year period with at least 6 months of potential follow-up, and reports on their outcomes during that period of time.

Results: 98,331 patients were enrolled, and as shown in the cascade figure below, 57% met eligibility criteria for ART at enrollment. 14% of those ART eligible were lost prior to ART initiation, and 5% remained in pre-ART care. Of those ineligible for ART, 45% were lost, and 30% went on to initiate ART. Death rates were <5% at each step in the cascade, and of those initiating ART, 69% were retained on ART at the end of the follow-up period.

Conclusions: The comprehensive graphical presentation of the care and treatment cascade demonstrates both the linkages between patient states, and previously under-recognized losses from states such as "ART eligible, not yet on ART." This information may be useful for program-mers, and in Zambia has informed strategies to reduce time to ART once eligible, and to trace lost pre-ART and ART patients to better understand their outcomes.

178 "In Five Years I Will Look More Elegant, Much Better Than Today:" Barriers and Motivations to Treatment Adherence Among TW in Central America

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Background: Transgender women (TW) in Central America are the population most affected by HIV/AIDS in the region. Country-level prevalence estimates range between 7.5%-28.6% and far exceed estimates among other groups. ART coverage and adherence in TW is assumed lower than existing national estimates because TW face additional barriers to care, greater stigma, and limited family and social support.

Methods: To inform a USAID-funded Combination Prevention Program in Central America, PASMO conducted a qualitative study to explore the barriers to adherence faced by PLWH, including TW. This study examines a subset of 10 life history interviews and 2 focus groups conducted with HIV-positive TW across 3 countries in Nicaragua, El Salvador and Costa Rica.

Results: At the time of diagnosis and treatment initiation, TW may face parallel and overlapping processes such as addiction recovery, overcoming depression, gender identity transitions, loss of livelihoods from sex work, or loss of housing. This additional burden may often interfere with or supersede adherence to ART as a priority. HIV stigma is exponentiated by both the internal and external stigma of TW identity, leading to barriers to adherence or delays in drop-out from care because of provider discrimination, lack of family support, and a reduced self-efficacy or interest in self-care. Factors contributing to treatment adherence include familiarity with AIDS death within the TW community, positive family support, and expectation of an improved/maintained appearance.

Conclusion: This study identified challenges faced by TW within the experience of diagnosis and treatment initiation that must be addressed prior to or as part of a holistic treatment regimen.



180 HIV Testing Preferences Among Sheltered Women Experiencing Homelessness

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Background: Unstably housed and homeless women are at increased risk for HIV infection. HIV screening at shelters provides a unique opportunity to impact the HIV epidemic in women experiencing homelessness.

Methodology: In July 2013, HIV testing was established in a medical student-run clinic at Lotus House Women's Shelter in collaboration with the Department of Health and the shelter's staff and residents. In order to investigate acceptability and feasibility of HIV testing in a shelter where the residents also live we conducted a survey of 74 women living at the shelter. The survey also asked about general HIV testing preferences.

Results: Of the surveyed women, the majority (53.3%) reported that they preferred to be tested at the shelter where they stay; 14.3% had a strong preference to be tested elsewhere. A minority (29%) of those surveyed felt that they should get tested for HIV. 64.9% reported "quite a lot" or "a great deal" of concern in regards to confidentiality of their HIV test results at the shelter. The majority (70.1%) reported that concern over their HIV test result would not affect their decision to get tested. Receiving an HIV test free of charge, HIV test confidentiality, getting HIV testing as part of routine care, and getting same day results were "quite" or "extremely" important to the majority of respondents (58.4%, 59.7%, 57.2%, 59.8%, respectively).

Conclusions: Offering HIV testing at a women's shelter is feasible and acceptable, although confidentiality is an expressed concern of many women. In-shelter testing provides a unique opportunity to give women experiencing homelessness increased access to screening services. Additional research is needed on HIV testing preferences in this unique population.

181 Facilitators and Barriers to Antiretroviral Therapy Adherence Among Adolescents in Ghana

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Background: Adherence to antiretroviral therapy is known to be difficult among adolescents living with HIV/AIDS. More than half of these young adults living with HIV/AIDS in low and medium income countries are in sub-Saharan Africa. The aim of this study was to identify facilitators of and barriers to antiretroviral treatment adherence among adolescents in Ghana, one of the low and medium income countries in sub-Saharan Africa.

Methodology: A cross sectional qualitative study using semi-structured interviews for data collection was carried out among adolescents (aged 12-19 years) at the adolescents HIV clinic at the Korle-Bu Teaching Hospital in Ghana. Predominantly open-ended questions relating to antiretroviral therapy were used. Interviews were done until saturation was reached. In total, 19 interviews were conducted. Analysis was done manually.

Results: The main facilitators that emerged from the interviews were knowledge of disease, product formulation, perceived positive outcomes, parental support, and support from health care providers. The identified barriers were forgetfulness to take medicines, perceived stigmatization due to disclosure, financial insufficiency, and adverse effects of antiretroviral therapy. The most frequently mentioned facilitator was support from health care workers, and forgetfulness and perceived stigmatization after disclosure were the most frequently mentioned barriers. Self-motivation to adhere to treatment was a specific facilitator among older adolescents.

Conclusion: Continuous information provision in addition to unflinching support from health care workers and parents or guardians may improve adherence among this subgroup. Also, interventions to reduce patient forgetfulness may improve antiretroviral therapy adherence. A multi-sectorial approach would be needed to address adolescent disclosure of HIV/AIDS status.



185 “Early Adopters”: Clinician Experiences at a Community Health Center Demonstrate the Feasibility of Prescribing HIV Pre-Exposure Prophylaxis in Primary Care

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Background: Few clinicians have prescribed HIV pre-exposure prophylaxis (PrEP). Assessing the experiences of clinicians who have provided PrEP (“early adopters”) could inform efforts to implement PrEP in additional settings.

Methodology: During January 2015, practitioners at a community health center specializing in the care of sexual and gender minorities in Boston completed a survey assessing experiences with prescribing PrEP (500+ patients in total as of study initiation). Descriptive statistics were calculated.

Results: Among 35 invited practitioners, 32 participated (response rate 91%); 59% were physicians, 41% were other prescribing clinicians, and all provided HIV care (median 50 HIV-infected patients; range 15-130). Respondents’ median age was 37 years; 53% were female, 78% were white, and 50% identified as gay/homosexual. Nearly all (97%) practitioners had prescribed PrEP (median 20 patients; range 0-70). Respondents had prescribed PrEP to men who have sex with men (100%), members of HIV serodiscordant couples (84%), and persons with STIs (77%). Many (61%) providers indicated that financial barriers had prevented patients from using PrEP. Before initiating PrEP, clinicians routinely performed testing for STIs (90%), renal function (94%), hepatitis B (75%), and HIV viremia (16%); symptoms of acute HIV (62%) or recent high-risk exposures (39%) also prompted viral load testing. Concordant with CDC guidelines, most providers performed HIV testing (77%) and risk-reduction counseling (71%) every 3 months. Some providers reported patients with more frequent STIs (32%) or decreased condom use with anal sex (42%) after initiating PrEP. Half (52%) of respondents had patients discontinue PrEP because of patient preference (58%), medication intolerance (19%), suboptimal adherence (19%) or follow-up (16%), lab abnormalities (13%), financial barriers (10%), or HIV acquisition (3%).

Conclusions: Prescribing experiences among early adopter practitioners suggest that PrEP implementation in primary care settings is feasible. Studies to understand how early adopter experiences can be used to engage generalist practitioners in PrEP provision are needed.

186 From Adapting to Treatment to Adopting of Treatment in France in 2014: Between Constraint and Adherence

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Background: 150,000 people live with HIV in France (PLWHIV) and around 90,000 are on antiretroviral therapy (ART). Pharmacological and dosage form evolutions in ART and their use as prevention have modified the everyday life of PLWHIV.

Methods: Sida Info Service – the French HIV/AIDS helpline – conducted a national cross-sectional survey from July to October 2014 examining treatment adherence from the perspective of how therapy and its challenges are incorporated into everyday life. Both quantitative and qualitative data were collected through an anonymous questionnaire. Analysis of the sample (n = 367) was realized with Modalisa©.

Results: 22% of participants had already voluntarily stopped their present treatment for several days, of whom 39.5% to reduce adverse side-effects, and 33.8% of them without telling their doctor. At the start of treatment fear of possible side-effects remains high: four PLWHIV treated for less than two years out of five. Two thirds of participants experience problematic side effects, of whom 27.8% on a regular basis. Regular side-effects concern more often PLWHIV treated for longer than 20 years (49.1%), women (40%), people not on single-tablet therapy (38.6% on multi-dose combination therapy, 30.7% on once-daily multi-tablet therapy), and those with insufficient financial resources (37.3%). 35.7% of PLWHIV who often experience problematic side-effects believe that treatment does not benefit their health and 23.8% feel discouraged about continuing. 26.5% of PLWHIV who experience side-effects all the time do not feel sufficiently informed by their doctor and 42.9% of them feel that their doctor does not listen to them.

Conclusions: Problematic side-effects alter perception of anti-HIV drugs and the doctor-patient relationship, with negative consequences on adherence. Some improvement approaches are emerging: wider range of single-tablet regimen treatments, information development and support targeting specific groups (women, people beginning treatment or aging with HIV, living on limited financial means), studies on alternating drug regimens, and addressing stigmatization issues.



187 Clinical Correlates of Diarrhea and Gut Parasites Amongst HIV Seropositive Patients Attending the Special Treatment Clinic of the University of Calabar Teaching Hospital in South-South Nigeria

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Background: CD4 count estimation which is not readily available in most resource poor settings in Nigeria is an important index determining commencement of antiretroviral therapy (ART). It is imperative for physicians who come in contact with these patients in such settings to recognize other parameters to evaluate the patients. By establishing a relationship between the level of CD4 count and the clinical state of these patients, an algorithm may be provided with which it may be possible to initiate antiretroviral therapy without CD4 count estimation in HIV- seropositive patients in such settings. The clinical correlates of Diarrhea and gut parasites amongst HIV- seropositive patients attending our special treatment clinic were studied.

Methodology: Three hundred and forty consenting HIV-positive adult subjects were enrolled. Their stool and blood samples were collected over a period of three months. Stool samples were analyzed for gut parasites, while the automated floctometry method was employed in CD4 count estimation.

Results: Participants in the age group 25-34 years constituted the highest population (46.8%) of test subject with a female to male ratio of 2.5 to 1. Those with diarrhea represented 14.1% of the population, while 21.5% harbored one or more parasites. In the subjects with diarrhea, 14.6% harboured gut parasites. The presence of diarrhea was associated with a low CD4 count. Clinically, oral thrush, wasting and rashes were more reliable predictors of low CD4 count levels while the presence of pallor, dehydration, wasting and rashes correlated with the presence of diarrhea.

Conclusion: HIV-positive patients presenting with pallor, dehydration, wasting and rashes should be evaluated for the presence of diarrhea. These clinical variables associated with low CD4 count in this study should guide commencing antiretroviral therapy in resource poor settings.

190 Employment is Related to Health Literacy in Persons With HIV Infection

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Background: Being employed is linked to better medication adherence in persons with HIV. Health literacy has also been associated with adherence, but the relation of health literacy to being employed is not known. The purpose of this study is to evaluate this relation.

Methodology: Data on participants' employment and financial status were collected as part of a larger study (N = 526; 342 blacks and 184 white non-Hispanics; 361 men, 158 women, and 7 transgendered; mean age 49.1 years, SD 8.9; mean years of education 12.9, SD 3.1) provided their current employment status, source and amounts of income, banking accounts, and amount of credit card debt. Health literacy was evaluated with the HIV-HL-2, a previously validated measure. The relation of health literacy to employment was evaluated in a logistic regression model that took age, gender, race, and education into account. Associations between financial status and higher vs. lower health literacy were evaluated with chi-square and t-tests.

Results: After taking age, gender, race, and education into account, education and health literacy predicted being employed (B = 0.17, SE = 0.04, Wald = 15.03, p < 0.001 and B = 0.15, SE = 0.04, Wald = 11.96, p = 0.001, respectively) while age was inversely related (B = -0.40, SE = 0.01, Wald = 12.76, p < 0.001). Those with lower levels of health literacy were less likely to receive income from salary or wages and more likely to report most income from disability payments.

Conclusions: Low health literacy is associated with a lower likelihood of being employed, and both have previously been linked to adherence. Better health literacy may help patients adhere to medication even in the context of the financial insecurity that can accompany unemployment. Further study of the ways that health literacy, employment status, and adherence interact is warranted.



191 Sociodemographic and Behavioral Differences in Antiretroviral Therapy (ART) Self-Efficacy in a Cohort of in-Care, HIV-Positive Individuals in Virginia: The Medical Monitoring Project (MMP), 2009-2011

Jennifer Kienzle¹, Lauren Yerkes¹, Anne Rhodes (presenting)¹, Celestine Buyu¹

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Background: Recent analyses in Virginia suggest that a patient's belief they can be successful in managing antiretroviral therapy (ART) medications (i.e. ART self-efficacy) is a significant predictor of ART adherence; yet it is unknown if self-efficacy differs by sociodemographic and/or behavioral characteristics. The aim of this analysis is to determine if there are differences in ART self-efficacy by sociodemographic and behavioral characteristics in a sample of HIV-positive patients in Virginia.

Methodology: Medical Monitoring Project (MMP) participants in Virginia from 2009-2011 were included in this analysis (N = 485). Three backward elimination multivariate logistic regression models were utilized. The outcome variables were ART self-efficacy items that assessed the participant's confidence: 1. in their ability to take ART as directed (SELF_1), 2. ART medications will have a positive effect on their health (SELF_2), and 3. they will develop resistance to HIV medications if current medications are not taken as directed (SELF_3).

Results: For SELF_1, White participants were twice as likely to report higher confidence with taking their ART medications as directed than Black participants [adjusted odds ratio (AOR) 2.0, 95% confidence interval (CI), 1.2-3.6]. In addition, those with education beyond high school (1.8, 1.1-2.9) and those who reported no trouble with ART side effects (1.8, 1.1-3.0) were more confident they could follow medication instructions. For SELF_2, Black participants (1.9, 1.1-3.2) and those not troubled by side effects (2.0, 1.2-3.3) reported higher confidence that ART could have a positive effect on their health. For model SELF_3, no predictor variables met the selection criterion for inclusion in the model. All reported findings were significant at the $p < .05$ level.

Conclusions: Findings suggest ART self-efficacy differs by race and ART side effect experience. Treatment adherence programs that focus on these factors may improve rates of self-efficacy, thus increase rates of ART treatment adherence.

192 HIV-HL-2: Rasch Analysis and Concurrent Validity

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Background: Health literacy is of interest to those working with persons with HIV infection because of its relation to health status and medication adherence. In a previous project we developed the HIV Health Literacy Scale (HIV-HL) and showed that it predicted patients' adherence. In this study, we report on a revised version's (HIV-HL-2) validity and provide psychometric evaluation via Rasch IRT analysis.

Methodology: Data on participants' demographic status as well as health literacy (the HIV-HL-2) were collected. Participants completed the Attitudes Toward Healthcare Providers Scale (ATHPS) and the Treatment Self-Regulation Questionnaire (TSRQ). Data were collected as part of a larger study evaluating health literacy and medication adherence in persons treated for HIV infection (N = 526; 342 blacks and 184 white non-Hispanics; 361 men, 158 women, and 7 transgendered; mean age 49.1 years, SD 8.9; mean years of education 12.9, SD 3.1). The factor structure of the HIV-HL-2 was evaluated. Rasch analysis was completed using the jMetrik software package. Validity was assessed as the measure's correlations to items of the ATHPS and TSRQ.

Results: Exploratory and confirmatory factor analyses supported a unidimensional factor structure for the instrument (insert fit indexes from CFA). Rasch analyses showed that two items had substantial misfit (infit and outfit indices > 1.5) and they were eliminated from the scale. All other items showed good fit (infit and outfit within the range of 0.5 to 1.5, with most near 1 suggesting that each contributed to measurement of the underlying concept). The total score was correlated significantly with multiple items from the ATHPS and TSRQ, suggesting that health literacy is related both to attitudes toward providers and patterns of adherence motivation.

Conclusions: The HIV-HL-2 is a valid and reliable measure of health literacy in persons with HIV infection. It is available for online administration from the authors.



194 Barriers to Adherence Amongst Adolescents Living With HIV in Rwanda

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Background: Poor adherence is driving poor outcomes for adolescents living with HIV. We undertook a study, combining quantitative and qualitative methods, to identify predictors of poor outcomes and barriers to adherence for adolescents enrolled in a new adolescent-friendly HIV service in Rwanda.

Methodology: Adolescents 15-19 years enrolled for at least one year in the adolescent HIV clinics at Centre Hospitalier Universitaire de Kigali and Ruhengeri District Hospital were included. A retrospective case note review of demographic and clinical data from [insert years] was conducted. Included adolescents were then interviewed on their treatment adherence using the Visual-Analog-Scale (VAS), HIV-related knowledge, barriers to care, satisfaction with care services, and psychological state using Beck-Depression-Inventory (BDI).

Results: 199 adolescents were enrolled. The median-age of enrollment was 16 years and 89% (177 of 199) had initiated ART. 27% (47 of 175) had immunological failure (>50% decrease from peak CD4 or CD4 decrease to below pre-treatment value). 51.3% (73 of 142) had complete viral suppression (viral-load of <40 copies/mL) and 37% had viral load failure (>1,000 copies/mL). 55.6% (79 of 142) reported adherence of 85% or less on VAS. 49% (96 of 197) demonstrated depression. 84.4% (167 of 198) reported that they were satisfied with the adolescent-clinic-services provided. Self-reported adherence to ART (OR = 2.1; 95%CI = 1.31-2.89; p <0.05) and not being in boarding school (OR = 1.80; 95% CI = 1.08 – 2.52; p <0.05) were associated with viral suppression. Depression was significantly associated with virological failure (OR = 0.92; 95%CI = 0.88-0.96; p <0.05).

Conclusions: These findings serve to provide useful lessons that can help strengthen efforts for adolescents living with HIV in Rwanda. To sustain adherence, dedicated HIV services must be tailored to the unique needs of adolescents, including educational, socioeconomic, and psychosocial supports.

195 Depression Management to Address Poor Adherence for Patients on ART in Rwanda

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Background: In Rwanda a total number of 128,553 HIV-Positive patients are on ART. This covers 90.2% of those in need. Psychiatric and psychosocial conditions have negative impact on HIV care and treatment outcomes. As care and treatment programs have been being scaled up for universal access to treatment, new challenges are rising; 1) how to provide treatment to patients in psychiatric conditions considering HIV testing, double-stigma as well as adherence to treatment to ART? 2) in routine care and treatment of PLWA, how can care providers diagnose psychiatric symptoms for better treatment and care? 3) More importantly, what are the strategies to manage depression as key factor and barrier to ART adherence? To answer to these questions, Rwanda Ministry of Health developed a strategy to integrate mental health and HIV prevention and care services.

Description: Within Mental health/HIV integration strategy, we systematically conduct mental depression screening using standardized tools at two levels; 1) level one: screening of general mental health disorders using SAMISS (adapted) and 2) level two: screening depression and care according to scores.

Results: In a mentorship session done in 12 Rwanda district hospitals, data collected on 3,349 adults HIV-Positive show the following situation: 405 (12.1%) presented one or more psychiatric symptom(s). Among 405 patients, 193 (47.7 %) were screened positive for depression and referred in mental health for care and 76 (39.2%) cases were eligible and received an antidepressant treatment. Depression rate among the overall screened patients was 5.7%.

Conclusion: Diagnosis and management of mental problems especially depression should be done prior to ART initiation and during follow up. HIV-positive patients with mental disorders can be identified through routine HIV care services using standardized and adapted screening tools. Various strategies have to be applied to address adherence to ART medication.



196 Staff Impressions of PrEP Implementation in Three Clinics Participating in the U.S. PrEP Demonstration Project

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Background: From 2012-14 the U.S. PrEP Demo Project introduced PrEP-services into three diverse clinical sites. We explored PrEP-related attitudes and beliefs of staff at each site during the follow-up portion of the project.

Methodology: A 23-item survey assessing attitudes and beliefs regarding PrEP was offered to staff at the three clinics participating in the U.S. PrEP Demo Project (two sexually transmitted disease clinics and a community health center) that enrolled 557 participants in Miami, San Francisco, and Washington, DC. In-depth interviews with 24 staff were conducted to elaborate on staff experiences.

Results: Surveys were completed by 75 individuals (31 study staff, 44 non-study staff) including 16 counselors, 14 clinicians and, 42 other staff (nurses, surveillance workers, phlebotomists, and receptionists). Although positive beliefs about PrEP and its efficacy were common, differences between those directly involved and not involved with the project emerged. Project-related staff had higher ratings on items about PrEP being a proven strategy for HIV prevention, beliefs that people prescribed PrEP took it as directed, and that PrEP should be part of prevention packages offered to those at risk. Despite these differences, staff in these clinics were generally highly supportive of providing PrEP. Themes emerging during interviews suggested ease of incorporating PrEP into clinical care and noted the importance of resources to facilitate rollout. While some were unsure regarding the role of PrEP when first introduced at their site, most staff reflected on the benefits of PrEP and a desire to ensure continued access to PrEP among their clients.

Conclusion: Support for continued clinic PrEP provision among staff at the clinics participating in the PrEP Demo Project was strong. PrEP complemented other services provided and did not substantially disrupt clinic flow. In this group of clinic staff with substantial PrEP experience, support was high for wider PrEP implementation.

197 Peers Keep It Real: Training of Peer Interventionists

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Background: Peers (i.e. lay individuals living with HIV) have great promise as change agents who can model HIV treatment adherence and revolutionize behavior change strategies that target people who are struggling with engagement in HIV care and medication adherence. "Peers Keep It Real" is an intervention study that is examining a novel approach to disseminating a peer-facilitated HIV treatment adherence intervention via an academic-community partnership. The intervention targets individuals that have experienced repeated challenges with engagement in care and medication adherence and who do not have a suppressed HIV viral load. This presentation will focus on the development of training materials, selection criteria for interventionists, and methods utilized to train the peers to facilitate the intervention.

Methodology: Training consisted of the following: didactic, readings, group activities and discussion, and role-plays. Intervention delivery was learned primarily via role-plays based in vignettes that were written specifically for training the peers on this intervention. Vignettes were developed from qualitative data collected from individuals living with HIV and struggling with engagement in HIV care and adherence to HIV treatment. Peers were trained over a period of 6 months.

Results: Eight individuals living with HIV who were diverse with regard to gender, age and ethnicity were selected as interventionists. Seven successfully completed the training and went on to the implementation phase of the intervention study. The intervention is currently being implemented in a variety of community settings.

Conclusions: Peers are effective as intervention facilitators in HIV care settings. The intervention has been well accepted by the target population: a subgroup of individuals who are living with HIV and have experienced repeated challenges with engagement in care and adherence to HIV treatment. The intervention has also been well accepted by health care providers.



200 Treatment Adherence in Chronic Diseases – Comparison Between Cohorts of Adolescents With HIV Infection and Cystic Fibrosis

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Background: Living with chronic diseases requires significant adaptations in personal, emotional and familiar organization of patients and caregivers. Treatment adherence is crucial for teenagers to reach adult life preserving their best potentials. In this report, we aimed to evaluate adherence in two cohorts of adolescents with different profiles, HIV infection and Cystic Fibrosis (CF).

Methodology: Observational, analytic, cross-sectional study. Adolescents with CF and HIV aged between 13 and 20 years were randomly selected. Both groups were followed in tertiary reference centers. Adherence was evaluated in adolescents with HIV infection and CF by self-report of medicine intake in 24 hours and 7 days before the interview. Adherence was measured by the proportion (administered medicines/prescribed medicines), expressed in percentage. Statistical analysis was performed with SPSS software, and associations were evaluated by Mann-Whitney test. Associations were considered significant if $p \leq 0.05$. The project was approved by the institutional Internal Review Board.

Results: Ninety patients, 39 with CF (age range 16.47 ± 2.32 , 22 girls) and 51 with HIV (age range 17.36 ± 4.85 , 28 boys) were evaluated. Median monthly household per capita incomes were US\$ 267 in the FC and US\$ 167 in the HIV group (no significant differences between sex, age and income). No significant differences were observed in adherence by self-report, either in the 24-hour interval (medians of 100%, with extremes of 0 to 100% in the CF group versus 100%, with extremes of 40% - 100% in the HIV group; $p = 0.08$), or in the 7-day interval (medians of 100%, with extremes of 40 to 100% in the FC group, versus 100%, with extremes of 34.3% - 100% in the HIV group, $p = 0.09$).

Conclusion: High adherence rates were observed in both groups, in contrast to literature data. Such findings may be explained by the fact of both groups being followed in reference centers, with specialized care teams. However, we cannot exclude overestimation by self-report.

202 The Impact of Health Literacy on Loss to Follow-Up and Mortality Among Patients With HIV/HCV Coinfection

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Background: Research demonstrates that poor engagement in HIV-related care is associated with adverse health outcomes. While health literacy has been linked to a number of negative health outcomes, the role of health literacy on outcomes pertinent to HIV-related care is unclear, particularly among the HIV/hepatitis C virus (HCV) coinfecting, a population that historically has been difficult to treat. This study assessed the relationship between health literacy and loss to follow-up and mortality among patients with HIV/HCV coinfection.

Methodology: This was an observational study of patients with a HCV diagnosis enrolled in the UNC Center for AIDS Research HIV Clinical Cohort. Analysis included coinfecting patients with a ≥ 1 clinic visit between 1/1/2004-12/31/2011 who had not initiated HCV therapy previously. Medical record reviews were performed to identify patients that were lost to follow-up in the clinic or that died. Health literacy measures were estimated via a predictive model that utilizes U.S. Census block group data. Factors associated with loss to follow-up and mortality were determined by logistic regression.

Results: Of 107 patients that met study criteria, the median age was 45 years (IQR, 39-48) and most were male (69%), African-American (79%), with HCV genotype 1 (94%) and had some form of insurance coverage (55%). Most (68%) patients had intermediate or above intermediate health literacy (score = 226-500), 22% were lost to follow-up and 27% died. While health literacy was not associated with either study outcome, age (aOR = 1.053; 95% CI, 1.002-1.107) and lack of insurance (aOR = 0.175; 95% CI, 0.048-0.635) were associated with mortality.

Conclusions: Despite prior studies demonstrating a link between health literacy and adverse outcomes, in this study among the HIV/HCV coinfecting, health literacy was not associated with either outcome. Additional, larger studies are needed to further explore these relationships given the high rates of loss to follow-up and mortality among these patients.



203 Shaping the Patient-Centered Medical Home for the Unique Needs of Patients in Ryan White HIV/AIDS Care Settings

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Background: Interest has been growing in care delivery models that facilitate access to care, improve coordination among providers, and promote the delivery of lower cost preventive services that reduce the need for higher cost services like hospitalizations. Among the care models given attention is the patient-centered medical home (PCMH). In 2011, the California HIV/AIDS Research Program funded an initiative to support the implementation and evaluation of five PCMH demonstration projects in Ryan White HIV/AIDS Program-funded HIV care settings. In this study, we examined patient and provider/staff perspectives on the PCMH model and its potential impact on retention in care.

Methodology: We interviewed patients and providers/staff associated with the projects (n = 53 patients; n = 82 providers/staff). Interviews were transcribed verbatim and we conducted a thematic analysis.

Results: Many patients had faced stigma in their lives and wanted to receive care from providers that respected them. They looked for evidence of respect in the availability of and attention from the providers. Providers/staff, aware of the stigma patients had faced, sought to engender trust through their actions. The PCMH goals of enhancing access to services and improving care coordination goals were embraced by both patients and providers/staff because they helped evoke a sense of providers caring about patients. By contrast, informants expressed greater skepticism about the PCMH goal of encouraging greater patient self-management.

Conclusions: HIV stigma shapes the needs of patients in Ryan White care settings, and influences the acceptability of the varied PCMH goals. Improving access to services and care coordination helps reinforce patients' trust in their providers and thereby promote retention in services. By contrast, a move toward greater patient self-management requires more caution and planning, as it might be misconstrued by patients as evidence of disinterest from providers, which would undermine the trust needed to retain those patients in care.

207 Adherence to Treatment and Psychosocial Factors in Adolescents With HIV Infection and Their Caregivers

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Background: The objective of this study was to evaluate the association between adherence to treatment and psychosocial factors of HIV-infected patients and their caregivers followed in a tertiary reference center.

Methodology: Analytical, observational, cross-sectional study. Patients aged from 7 to 20 years-old and their caregivers were randomly selected. Adherence was assessed by self-report (SR) in 24 hours and 7 days prior to the interview, in addition to pharmacy dispensing records (PDR). Individuals were considered adherent if adherence rates were $\geq 95\%$ on SR (drug intake/drug prescription) and if drug dispensing interval was ≤ 37 days. Standardized and validated questionnaires were used: Youth Quality of Life Instrument-Research (YQOL) and World Health Organization Quality of Life Inventory (WHOQOL) and Beck Anxiety and Depression scales. Statistical analysis was performed with SPSS software, and the associations evaluated using the Mann-Whitney test. Associations were considered significant if $p \leq 0.05$. The project was approved by the institutional Internal Review Board.

Results: Fifty two adolescents were evaluated: 29 (56%) male, with a mean age of 17.36 (± 4.85) years. Of the 44 caregivers, 39% were women, with a mean age of 46.6 (± 11.72). The prevalence of adherence was 54% (PDR), 80% (24-hour SR) and 67% (7-day SR). In caregivers of adherent adolescents, we observed significantly higher scores in the WHOQOL social domain, either on PDR records (median = 75, range = 0-100 vs median 50, range = 0-94; $p = 0.01$), 7-day SR (median = 72, range = 0-100 vs median = 50, range = 19-94; $p = 0.02$) and 24-hour SR (median = 69, range = 0-100 vs median = 50, range = 19-75; $p = 0.02$). Regarding caregiver depression, there were significantly higher scores in the PDR non-adherent group (median = 14, range = 0-41 vs median = 21, range = 1-54; $p = 0.05$).

Conclusion: Knowledge of the factors associated with adherence and psychosocial factors may result in the incorporation of new knowledge to health care, especially in the management of caregiver burden. The higher prevalence of women among caregivers is noticeable.



208 Association Between Adherence to Antiretroviral Therapy and Clinical and Demographic Factors in a Cohort of HIV-Infected Adolescents and Their Caregivers

Aline Ernesto¹, Poliany Souza¹, Daiana Pires¹, Ana Possa¹, Maria Vilela¹, Renata Lemos¹, Denise Da Silva¹, **Marcos Da Silva (presenting)**¹

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Background: The objective of this study was to evaluate the association between adherence and clinical and demographic factors of patients and caregivers followed in a tertiary reference center.

Methodology: Analytical, observational, cross-sectional study. Patients aged from 7 to 20 years-old and their caregivers were randomly selected. Adherence was assessed by self-report (SR) in 24 hours and 7 days prior to the interview, in addition to pharmacy dispensing records (PDR). Individuals were considered adherent if adherence rates were $\geq 95\%$ on SR (drug intake/drug prescription) and if drug dispensing interval was ≤ 37 days. The association between adherence and the following variables was evaluated: clinical, immunological and virological control, demographic and socioeconomic conditions. Statistical analysis was performed with SPSS software, and the associations evaluated using the Mann-Whitney test for continuous variables and chi-square test for categorical variables. Associations were considered significant if $p \leq 0.05$. The project was approved by the institutional Internal Review Board.

Results: Fifty two adolescents were evaluated: 29 (56%) male, with a mean age of 17.36 (± 4.85) years. Of the 44 caregivers, 39% were women, with a mean age of 46.6 (± 11.72). The prevalence of adherence was 54% (PDR), 80% (24h) 67% (7d). Significant associations were positively associated with PDR: immunological category 3 ($p = 0.013$), less time spent with treatment ($p = 0.03$), lower viral load ($p = 0.03$); smaller proportion of missed consultations ($p = 0.03$) and lower perceived adverse events ($p = 0.04$). For 24-hour SR: married caregiver ($p = 0.02$); smaller proportion of missed consultations ($p = 0.002$); better educated caregiver ($p = 0.05$); less time spent with treatment ($p = 0.02$); smaller number of household members ($p = 0.04$). For 7-day SR: higher CD4 count ($p = 0.05$); less time spent with treatment ($p = 0.02$); smaller proportion of missed consultations ($p = 0.01$); lower perception of adverse events ($p = 0.01$); greater complexity of ARV regimen ($p = 0.03$).

Conclusion: Adherence-associated factors must be carefully evaluated in order to achieve better quality in health care.

209 Adherence to Antiretroviral Therapy in Different Populations - A Review of the Application of the Information, Motivation, Behavioral Skills Model

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Background: The Information Motivation Behavioral Skills Model (IMB) was developed in response to the HIV epidemic. It posits that a patient's HIV preventive behavior is determined by the level of their HIV prevention information, motivation and behavioral skills. Applications of this model can be used to understand, predict and promote adherence to Highly Active Antiretroviral Therapy (HAART). Despite a variety of adherence interventions patients with HIV/AIDS are still largely non-adherent to their medication. Our theory is that once the IMB model of adherence to HAART frames future interventions, more rigorous, standardized interventions will become available. We aim to examine its use in different interventions and identify the different target populations.

Methodology: Electronic databases of peer reviewed journals were searched for articles during 3/1/2014 and 4/15/2014. Studies were eligible for inclusion if they investigated an intervention for adherence to HAART applying the IMB model in any aspect of their methodology. Reviews/commentaries/editor's notes were not included.

Results: Initial searches of electronic databases returned 61 citations. From these, 8 studies were included. One study did not report any results because it was ongoing. There were no gender specific populations but some of the researchers were interested in populations that were affected by HIV/AIDS as well as additional disorders. Two studies targeted populations with a substance abuse history while one also included patients with low literacy. Only one study investigated an exclusively African American population. Mean ages of the participants for all the studies ranged from 34.6 years to 47.1 years. Only two studies reported statistically significant increases in their measured adherence outcomes in the intervention group as compared to their control group.

Conclusions: Poor adherence to HAART is a public health issue. Continued application of the IMB model to inform creation of interventions is a step towards curbing this problem.



211 The Role of Foreign-Born Status as a Predictor of Linkage to HIV Care in a Large US Metropolitan Health System

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Background: We sought to determine whether linkage to care after HIV diagnosis is delayed in foreign-born (FB) compared with US-born individuals.

Methodology: We identified patients in the Partners HealthCare System (Boston, MA) aged ≥ 18 years with a new HIV diagnosis between 2000 and 2012. Place of birth (US vs. FB) was determined using a previously validated algorithm. Substance abuse diagnosis (i.e. alcohol, opioid, and cocaine and/or amphetamines) was characterized by presence of an ICD-9-CM code. We compared baseline CD4 counts using Wilcoxon rank-sum test. The primary outcome was timely linkage to HIV care defined as the presence of an HIV-coded encounter with a primary care or infectious disease physician within 90 days of the index HIV test. We performed multivariable logistic regression on the probability of not linking to HIV care, controlling for hypothesized confounders (birthplace, age, sex, race, substance abuse and location of HIV diagnosis).

Results: We identified 619 individuals with a new HIV diagnosis of whom 36% ($n = 225$) were FB. Baseline median CD4 was 350/ μ l (IQR 144-559/ μ l) in US-born compared with 258/ μ l (IQR 87-482/ μ l) in FB ($p < 0.001$). The proportion who linked to HIV care within 90 days was lower in US-born (77% [95% CI 72-81%]) compared with FB (87%, [95% CI 82-91%]). In multivariate analysis, FB status facilitated timely linkage (OR 0.43 [95% CI 0.25-0.72]). Older age (OR 1.21 [95% CI 1.00-1.48] per decade), female sex (OR 1.97 [95% CI 1.25-3.10]), and opioid abuse history (OR 2.31 [95% CI 1.17-4.56]) were risk factors for not linking within 90 days.

Conclusion: FB HIV-infected individuals presented to care with more advanced disease than US-born. Once tested, FB were more likely to link to HIV care promptly. Public health interventions to improve FB engagement in HIV care should target earlier HIV testing.

212 School, Disclosure, and Stigma: A Qualitative Study of Adherence Issues Among HIV-Positive Adolescents and Their Caregivers in China

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Background: Adolescent adherence to antiretroviral therapy (ART) has been understudied, and few evidence-based interventions have been developed for this group. As preparation for a larger study focused on HIV-positive adolescents, we conducted a qualitative study in China to explore views toward ART and adherence among adolescents and their caregivers, to examine facilitators of and barriers to adherence in this population, and to learn about caregivers' roles and challenges.

Methodology: We conducted in-depth interviews (IDI) with 20 adolescent/caregiver dyads at an ART clinic in Nanning, China. Using NVivo software, we summarized major themes, prioritized concerns raised based on the frequency of specific topics, and explored all unusual reports of barriers that related to adherence challenges in adolescence.

Results: Mean age of adolescents was 12.3 years (SD 1.7), and the majority (14/20) were boys. Caregivers were on average 42.4 years old (SD 11.2 years), predominantly female (12/20) with primary school education (12/20). Both adolescents and caregivers described collaborative systems for medication management, with a spectrum of child responsibility. Most adolescents expressed worries about being seen taking their medication, particularly at school; several reported dropping out due to challenges related to HIV status. Caregivers spoke about challenges of helping youth manage their medication-taking given school schedules, in addition to concerns about finances, stigma, and how to disclose their children's HIV status to them. Many were particularly worried about adolescents' ability to adhere during middle school, when most children in this region live away from home. Caregivers also expressed concerns about children's future relationships and desires for adolescents to become independent and self-disciplined.

Conclusions: The complexities of peer, school, and family factors represent important challenges for adolescents on ART in this Chinese context, particularly as children age. Adherence support strategies for youth must consider culturally-specific factors, constructive disclosure, and support for caregiver/adolescent relationships.



213 Factors Associated With Intentional Inadequate Adherence to Antiretroviral Therapy (ART) Among PLWH

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Background: Inadequate adherence is associated with mental health and substance use. Inadequate adherence is complicated and may be intentional. We examined the frequency of and factors associated with intentional inadequate adherence.

Methodology: Patients at UW Madison HIV clinic complete a touch-screen-based assessment including adherence, drug/alcohol use, depression/anxiety, stigma and risk behavior measures. Patients on ART completed an item asking about intentionally skipping doses in the last 30 days and a visual analogue scale of adherence. We examined demographic and clinical factors associated with skipped doses including alcohol and drug use, depression/anxiety, quality of life, symptom burden and individual symptoms, risk behaviors, stigma, current and nadir CD4, and current and peak viral load. We used logistic regression adjusting for age, race, and sex to examine factors associated with intentional skipped doses.

Results: 766 patients were included of whom 85% were men, and mean age was 45 years. Of these, 105 (14%) reported recent intentional inadequate adherence. Mean 30-day adherence was 68% vs. 84% among those who did and did not intentionally skip doses. In univariate analyses, intentionally skipping doses was associated with anxiety, depression, fatigue, fevers, nausea, stigma, recent CD4 and VL but not CD4 nadir or substance use. In adjusted analyses, factors associated with intentionally skipping doses included panic symptoms (OR 1.9, 95% CI: 1.1-3.4), stigma (OR 2.6, 95% CI: 1.0-6.8), while an undetectable viral load was associated with decreased odds of skipping doses (OR 0.3, 95% CI: 0.1-0.4). At-risk alcohol use, binge drinking, overall drug use, and drug use by individual class were not associated with intentionally skipping doses.

Conclusions: Inadequate adherence may be intentional. Mental health symptoms but not substance use were associated with intentionally skipping doses. Interventions that focus on substance use may have limited benefit for people not adherent on purpose. Inadequate adherence due to intentionally skipping doses may require different interventions.

215 Health Literacy and Numeracy Explains Race Differences in Medication-Taking

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Background: Disparities in HIV outcomes among African Americans Living with HIV/AIDS (AAWH) persist. These disparities may be related to errors in ART medication-taking driven by additional disparities in health literacy. This study tested whether low health literacy and health numeracy explained potential differences between AAWH and non-AAWH in actual and potential medication-taking behavior.

Methodology: A total of 382 participants, 235 AAWH and 147 non-AAWH, were enrolled from HIV clinics in metro-Atlanta. Participants completed baseline measures of health literacy, numeracy, HIV specific health literacy, and two functional measures of medication taking ability; one measure of knowledge of one's actual prescription instructions and one measure of a simulated regimen evaluating knowledge and potential events that could disrupt adherence.

Results: Participants were 49 years of age on average (SD = 8.8) and had been taking their current regimen for at least 6 months. AAs and non-AAs differed in their simulated regimen scores with AAs demonstrating more errors. No differences in knowledge of actual regimen were found. Mediation models tested whether the health literacy/numeracy measures mediated both actual and simulated ART measures. Findings revealed that both general and HIV-specific health literacy as well as numeracy mediated the simulated ART regimen scores; however, no mediation effects were noted for participant's actual medication regimens.

Conclusions: Knowledge of one's own regimen among those prescribed for some time, does not appear to be related to race or health literacy. However, decision-making important for avoiding lapses in prescriptions or other mismanagement issues appear to be more problematic for AAs with low health literacy or numeracy. Programs to aid problem solving with this group may improve this risk.

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217 All Day Girl's Event Promotes Increased Knowledge About HIV and Improves Adherence and Retention in Care

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Introduction: It is difficult to get adolescents together for mutual support and education. In our experience, girls have been less inclined to participate in the existing support groups and retreats available in the community. HIPAA, confidentiality laws, and policies make it difficult for health care providers to connect patients for support.

Description: The Bill Holt Clinic and Southwest Center collaborated to host a retreat in October 2014 for teenage girls aged 15 to 18 years. The day included a mix of relaxation, fun, HIV education, and support for girls living with HIV. Five of the eleven girls who were invited attended. Sessions included: a skincare lesson, facing fears about HIV, a self-esteem workshop, and a writing exercise about their experiences living with HIV or a new HIV diagnosis. The day ended with a guided imagery and meditation session.

Lessons Learned: During the day, the girls exchanged phone numbers, Instagram accounts while interacting with one another intimately. The event brought together girls diagnosed as teens and girls who were maternally infected at birth. This experience engaged one newly diagnosed girl further into care with a better understanding of the importance of medication adherence. Through her experience in the girl's day, this young girl learned from her peers about medication side effects and benefits, disclosure, dating, and other teen girl related issues/concerns. The retreat demonstrated the importance of peer engagement in adherence, retention in care, and support services. A small group setting appeared less intimidating for the youth who participated in the event and opened their minds to participating in future group activities.

Recommendations:

Identify activities and events targeted to girls and aggressively market these events. Look at adherence and health measures in the months following the event to determine any effects of the event.

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

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Introduction: Though the burden of HIV prevalence disproportionately impacts marginalized groups in the United States, advances in effective ART offer potential for equivalent reductions in HIV-related morbidity and mortality. However disparities in access to uninterrupted ART among uninsured and underinsured clients related to ADAP processing times, wait lists, and prior authorization programs present challenges to patients, clinical providers, pharmacy suppliers, and support staff in HIV care. Therefore we evaluated viral load (VL) outcomes for persons who acquired ART via HarborPath, a centralized web-based portal aimed to streamline timely receipt and uninterrupted access to HIV medications.

Methodology: We retrospectively examined VL changes using a pre-post design within an academic HIV Clinical Cohort in Alabama from January 2013-January 2015. Patients who were approved to enroll with at least one filled ART prescription and a VL value at baseline (closest to enrollment, up to 1 year prior) were included for analysis. Effect of participation in the program was assessed by comparing VL suppression (<200 copies/mL) at baseline versus follow up after 6 weeks (but within a year) following enrollment.

Results: A total of 594 patients were enrolled, with a mean age of 39 years, 78% Male, 71% Black/African American, 8% IDU, and 85% uninsured. Nearly two-thirds (60%) had suppressed VL at enrollment. Median time from application to enrollment approval was 1.5 days, and time from application to medication distribution was 4.0 days. Of the 488 patients for whom both baseline and follow up VL were available, VL suppression increased significantly from baseline, from 60% to 81% ($p < .001$) respectively.

Conclusions: Eligible patients who enrolled in an ART drug program using the HarborPath portal for central processing and distribution demonstrated significant improvement in virologic suppression at follow-up. This program shows promise for improving clinical outcomes by providing ease of ART access for uninsured and underinsured persons with HIV.



219 A Pharmacist Driven Adherence Program – Using Motivational Interviewing Within the IMB Model to Improve Adherence in 340-B Patients

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Introduction: CCN Pharmacy, a 340B contracted pharmacy, piloted an HIV adherence program in which clinical pharmacists telephonically engaged patients to increase medication adherence. All actions, interventions, results and comments were tracked by a software system designed and developed by CCN.

Description: Patients were proactively targeted if they were new to HIV treatment or their HIV regimen changed; patients were reactively targeted if they had a medication possession ratio (MPR) of less than 90% or more than 120% or if they were late to refill their medicine(s). MPRs were calculated using the previous six months of fill data. Pharmacist would determine during initial counseling session if targeted patients were non-adherent to their medicines or at risk for non-adherence. If so, the pharmacist would help develop a customized intervention plan through motivation interviewing and IMB models and would continue to engage patient until it was determined they were adherent.

Lessons Learned: During the six month pilot period, 151 patients were targeted, of which 30 were never engaged, 69 were found to be adherent and 50 were found to be non-adherent in the initial call. The most common barriers reported for non-adherence were forgetfulness, side effects and health literacy. 22 patients achieved adherence through the program and 28 were still actively engaged at the end of the 6-month period.

Recommendations: Because a high percentage of patients were found to initially be adherent, the MPR was lowered to less than 80%, and MPRs were calculated using the previous twelve months of fill data. To better address adherence barriers, a text, voice, and email dosage reminder program was developed, and pharmacists increased focus on disease state counseling and side effect reduction strategies. CCN is expanding the adherence program to all interested contracted clinics and has expanded the program to include hepatitis C.

220 Wisconsin's Linkage to Care Specialists: Successes in Navigating Complex Systems to Address Barriers to Retention in Care

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Background: Wisconsin's Linkage to Care Specialists work with small caseloads of clients for 6-9 months within HIV medical clinics and community-based organizations. They provide intensive, client-centered support to individuals who are newly diagnosed, recently incarcerated, out of medical care, or at risk of disengaging in care. They coordinate services, referrals and appointments; attend appointments with clients; and aid in navigation of health care and other service systems. We qualitatively examined clients' experiences with housing assistance systems and Department of Corrections, and investigated how Specialists helped address barriers associated with navigating these systems in comparison with previous experiences with case managers.

Methodology: In-depth interviews were conducted with 30 current or former clients of Specialists, focusing on the services Specialists provided, and past and remaining barriers to medical care. Data were coded for key themes using MaxQDA software and used to conduct targeted readings regarding housing barriers, barriers associated with previous incarceration, and previous experiences with case management.

Results: Many clients required encounters with bureaucratic systems due to complex needs such as housing instability and financial insecurity. In contrast to their experiences with parole officers, previous case managers, and other representatives of these bureaucratic systems ostensibly tasked with addressing these needs, clients described Specialists as "advocates" who were able to overcome barriers to care and services that clients could not overcome on their own. Specialists were seen as caring and "not just there for a job," in contrast with individuals in other systems of support. Many indicated that this advocacy and support motivated them to take care of their health.

Conclusions: Small caseloads and flexibility on the part of Specialists may have resulted in many clients successfully navigating complex service systems, in contrast with other representatives of bureaucratic systems, which suggests the continuing need for patient navigation programs.



221 Emotion Regulation and Adherence in Daily Life

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Background: This study presents data on emotion regulation and daily medication taking in young minority MSM living with HIV and examines negative affect as an underlying process variable. Negative affect is often associated with disengaging from behaviors or incentives (Carver & Scheier, 2011; Klinger 1975; Lewis, Sullivan, Ramsay, & Alessandri, 1992). Therefore, this study aimed to determine whether higher emotion regulation skills were associated with consistently performing daily behaviors, and if negative affect contributes to explaining this link.

Methodology: As part of a larger study, 80 Black men living with HIV (age 18-32) completed the Difficulties in Emotion Regulation Scale and reported their adherence to daily medication taking for the past four days. They also reported negative affect with an emotional well-being scale.

Results: Pearson correlations revealed a positive association between emotion regulation skills and daily medication taking among participants. The Sobel test indicated that emotional well-being mediated this association ($z' = -3.13$, $p < 0.01$).

Conclusion: We found a direct effect linking higher emotion regulation skills with more consistent daily medication taking. We found an indirect effect via negative affect, highlighting the role of negative affect as an underlying mediator. These results are in line with our hypothesis that higher emotion regulation skills are associated with more consistently performing daily behaviors and that negative affect mediates this link. A better understanding of the role of emotion regulation for consistently performing frequent daily behaviors is important for psychological interventions. Future research should address whether improving emotion regulation skills via training can facilitate the performance of daily behaviors.

222 Reflections on Risk: A Qualitative Analysis of Counseling Notes From the PrEP Demo Project in Washington, DC

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Background: The Demo Project provided HIV prevention services to MSM as a "toolkit", which included PrEP, condoms, HIV/STI testing, and counseling. Staff conducted brief, client-centered counseling, targeting risk reduction related to sex, substance use, and adherence and documented main content of sessions in counseling notes.

Methodology: To better understand the content covered in counseling and its potential role with participants, counseling notes from 18 participants covering 52 weeks were compiled and qualitatively analyzed. Using grounded theory, researchers identified main themes in counselor-participant discussions.

Results: Counseling notes suggested that discussions focused on a wide range of topics that extended beyond medication management. Across sessions, descriptions of being in the project included a sense of accountability/commitment towards PrEP adherence and feelings of "pioneering and helping the cause." Notes suggested that use of PrEP may have impacted overall motivation towards health protection, where participants were documented as sharing "[it] feels good to take steps to be healthy." Discussions included perceptions of sex partners also taking PrEP; they were seen as "lower risk" because they were "getting tested and taking care of [themselves]." Strategies to manage HIV-risk included condom use, sexual positioning, disclosure of HIV status, sex venues, number of partners, and substance use. For some, counselors noted that participation in the study was the "most involved in healthcare [they] have ever been." To this end, participants described plans to both continue PrEP as well as concerns about PrEP access. Additionally, participants reported feeling a decrease in anxiety about HIV while on PrEP ($n = 18$). Notably, all of the participants who did not continue PrEP post-study ($n = 5$) discussed a return of their HIV-related anxiety.

Conclusion: Themes of prevention synergies, reduction in HIV-related anxiety, and motivation towards proactively caring for oneself were identified. PrEP programs might consider combining risk reduction efforts with brief medication adherence counseling.



224 ICARE For You: A Practice Based Approach to Improving HIV Treatment Adherence

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Introduction: Supporting consistent engagement with HIV treatment requires the capability to address multiple barriers to care. We provide our experiences of a practice-based multifaceted intervention using established resources to improve HIV virologic suppression and reduce gaps in care at an urban HIV clinic in Rhode Island.

Description: In January 2013, the Ryan White-funded Immunology Center Adherence and Retention (ICARE) Program was established at The Miriam Hospital in Providence, RI. ICARE is a multidisciplinary team of physicians, adherence nurses, case managers, social workers, a secretary, clinical psychologist, and peer health advocates. Following a baseline assessment in conjunction with the In+Care Campaign, ICARE began a practice-based approach with quarterly clinic database reviews to identify patients with gaps in care (>9months) or detectable HIV plasma viral load (PVL >200 copies/mL) followed by: 1) clinic-based outreach and barrier assessment by ICARE; 2) coordination with community based AIDS service organizations (ASO) for additional case management services; and 3) referral to the Rhode Island Department of Health (DOH) Return to Care program for those where clinic/ASO outreach was unsuccessful. ICARE team members meet twice monthly to review progress.

Lessons Learned: Between 1/1/2013 and 1/1/2015, 542 patients with PVL >200 copies and 253 with gaps >9months were identified. Interventions implemented include phone/letter/email outreach, referrals for substance use/mental health/housing, and peer advocate support. Subsequently, 405 (75%) individuals achieved virologic suppression at least once, though virologic rebound occurred for 80/405 (20%). Of the 253 with gaps, 130 (51%) have returned to care, 38 (15%) moved, 8 (3%) died, 3 (1%) are incarcerated, and 11 (8.5%) experienced another gap; 73 remain in outreach with 31 active DOH referrals.

Recommendations: A multidisciplinary Ryan White funded clinic-based intervention supported by community-based ASOs and DOH resources highlights an ongoing effort to improve consistent engagement with HIV treatment. Collaborative programmatic interventions are needed to address the dynamic nature of retention.

226 The Sue Bujold Floor: Providing Women-Centred Palliative Care in a Low-Income Urban Community

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Introduction: The Canadian Hospice Palliative Care Association has prioritized the integration of hospice palliative care into non-traditional settings, including shelters, prisons, and the street. Atira Women's Resource Society (AWRS) serves women and their children who are living in Vancouver's Downtown Eastside (DTES) and marginalized by experiences of violence, poverty, social isolation, and/or struggles with mental wellness. The Sue Bujold Floor opened in September 2014 to address the growing need for low-barrier palliative care services among women at risk of homelessness.

Description: AWRS maintains eight individual palliative care suites on a dedicated floor of a DTES housing development; the program staff works with healthcare providers in the community to develop appropriate management plans for each resident of the floor. The supportive focus of the program promotes comfort and ensures respect for women with deteriorating chronic illnesses, including HIV, hepatitis, and other life-limiting disease. Consideration is given to supporting medication adherence, managing pain and other symptoms of illness, and providing a range of social, emotional, and practical supports.

Lessons Learned: Chronically ill women who are marginalized by their experiences of homelessness and poverty are excluded from traditional palliative care models and deprived of associated health benefits. By virtue of their lived experiences, the women accessing services on the Sue Bujold Floor are experts with whom we can develop policy and practice improvements. AWRS incorporates resident feedback into evolving guidelines for care provision in this setting.

Recommendations: We are not aware of comparable programs that serve women exclusively, and recognize the importance of sharing this experience with other providers of health and palliative care. Qualitative studies will identify gaps in care and the impact of the program. Knowledge gained should be translated for use by other health and community organizations that serve women who are marginalized and in need of palliative services.



227 Mitigating Social and Economic Vulnerabilities in HIV/AIDS Affected Households in Uganda; A Case of the SCORE Project in Uganda

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Introduction: The abstract demonstrates the impact of SCORE project's (Sustainable Comprehensive Responses for vulnerable children and their families) socio-economic strengthening interventions on 3,379 households affected by HIV/AIDS in 35 districts of Uganda following three years of programming.

Description: SCORE is a multi-sectoral, five year project implementing a variety of interventions, targeting more than 25,000 households. Interventions are themed under four objectives that include economic strengthening, food security and nutrition, child protection and family strengthening. SCORE works with moderately and critically vulnerable households that are characterized by low incomes, education, child headed families among other factors that are either a result of HIV/AIDS or are compounding factors that increase HIV/AIDS risk. Of the households currently under SCORE, 19% (3,379) are affected by HIV/AIDS; have at least one member living with HIV/AIDS.

Lessons Learned: The analysis of outcomes in SCORE households that received economic strengthening activities shows improvement with regard to a range of drivers of HIV/AIDS in Uganda. Average income doubled from 41,840 to 87,200 Uganda Shillings, the occurrence of child abuse reduced from 38.09% to 13.43%, school enrolment increased from 74.96% to 85.25%, and school absenteeism falling from 33.07% to 14%. Overall, 71% of SCORE households have moved from a vulnerability bracket to a lower one, that is; from critically vulnerable to moderately or slightly vulnerable, and from moderately to slightly vulnerable.

Recommendations: SCORE introduced to OVC programming in Uganda three main innovative features. 1) Family centered, tailored interventions, which "fit the project to the people", rather than standardized one-size-fits-all packages. 2) Emphasis on household resilience, severely constraining any handout. 3) Focus on sustainably graduating the households out of project. These can be replicated in different contexts in developing countries.

228 Self-Reported Barriers to HIV Care and "Severity" of Out-of-Care Status

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Background: We examined three "out-of-care" criteria and their relationship to self-reported barriers to HIV medical care, hypothesizing that more severely out of care patients would report more psycho-social barriers and those less severely out of care would report more structural barriers.

Methodology: Patients recruited for a re-engagement in HIV care study were characterized according to the severity of their out-of-care status: 2 or more no-show visits in the past year (mild), 7 months or more since last appointment (moderate), or failing to meet the HRSA-HAB definition of being in care (severe). Across the three groups, we compared responses to a series of 14 (yes/no) barriers to care questions (e.g. transportation, inability to pay, denial, stigma). Cross-tabulation with chi-square analysis was used to evaluate whether differences existed.

Results: Among 169 patients (Male: 65.0%; African American: 77.5%, White: 19.5%, Other: 3.0%), there were significant differences among the three groups in the percentage of participants who reported wanting "to avoid being seen at the clinic" as a barrier to care (2-no show (n = 62): 17.7%, 7-month (n = 27): 11.1%, HRSA (n = 80): 30.0%; p = .06) and in the percentage of participants reporting a "lack of transportation" as a barrier to care (2-no show: 75.8%, 7-month: 59.3%, HRSA: 53.8%; p = .02).

Conclusions: Although there were no significant differences in percentages of participants reporting the other 12 barriers, these results suggest that personal barriers such as stigma may have greater impact for longer term out of care patients who could possibly benefit from intervention aimed at addressing stigma issues. Conversely, tenuously in-care patients might derive more benefit from more practical interventions such as transportation assistance.



229 Screen, Refer, Treat, Repeat: The Use of a Comprehensive Mental Health Screening Program to Maximize HIV Care Outcomes

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Introduction: Compared with the general population, persons living with HIV/AIDS (PLWHA) are more likely to develop mental disorders which can present as a significant barrier to linkage and engagement in HIV medical care. The Virginia Department of Health (VDH) developed a comprehensive screening and referral process to identify and address mental health barriers among PLWHA. The intervention was designed and implemented at a large university medical center in Richmond, Virginia through a Special Projects of National Significance (SPNS) grant from the Health Resources and Services Administration (HRSA).

Description: The intervention involves the use of five validated, publicly available mental health screening instruments to assess clients for depression, anxiety, cognitive functioning, substance abuse and prescription abuse. Screening results are used to refer persons to counseling and other psychological services. Retention in HIV care and viral load results are monitored over time, and the screening instruments are repeated every 6 months.

Lessons Learned: Preliminary results demonstrate improvements in 12-month retention in care rates and viral suppression among intervention clients. 181 clients were served by the intervention from 9/1/2013-8/31/2014 and retention increased from 62.4% in 2012 to 79.0% in 2013 and viral suppression increased from 54.7% in 2012 to 69.6% in 2013. Retention in care was measured as evidence two or more HIV care markers (CD4 or viral load test, HIV care visit, or antiretroviral prescription) within the 12-month period that were at least 60 days apart. Viral suppression was measured as the last viral load within the 12-month time period if <200 copies/mL.

Recommendations: Programs serving PLWHA should consider implementing routine mental health assessments to address potential barriers to continuous HIV medical care. To ensure mental health screening programs are successful, agencies must invest in the necessary infrastructure and staffing to provide a seamless mental health screening, referral and treatment system.

230 Effects of Depressive Symptoms and Drug Abuse on Adherence Self-Efficacy: A Baseline Comparison of HIV-TB Comorbid Patients in South Africa

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Background: South Africa has the highest burden of tuberculosis-comorbid patients in the world, with 65% of TB patients also HIV-infected. Optimal adherence to antiretroviral therapy (ART) is a key predictor of positive health outcomes, and adherence self-efficacy (ASE) is related to ART adherence. Little is known, however, about the distinct psychosocial characteristics of TB and HIV co-infected patients in South Africa and to what extent depressive symptoms and current drug abuse problems influence their self-efficacy for ART adherence.

Methodology: Four hundred fifty-eight HIV-positive adults commencing ART from an ongoing adherence intervention RCT in South Africa completed baseline questionnaires assessing perceived ASE for ART, mental health, and presence of substance/alcohol problems. Twenty-two percent were TB-comorbid, and 73% female. After stratifying by TB status, multivariate logistic regressions were used to evaluate risk factors for perceived high and low ASE. Gender, household income, having children and employment status were also included in the models.

Results: Among TB-comorbid patients, those with presence of a mental health issue were 5.78 times as likely to have low ASE ($p = 0.04$) than those without. Women were 5.04 times as likely as men to have high ASE ($p = 0.04$). Unemployed status and low household income also increased the odds of having low ASE, but were not statistically significant. Among HIV-only patients, those with presence of substance/alcohol problems were 2.61 times as likely to have low ASE ($p = 0.03$) than those without. Women were 4.35 times as likely as men to have low ASE ($p = 0.04$), but those with children were 7.49 times as likely to have high ASE ($p = 0.05$) than those without.

Conclusions: Demographic factors, mental health and drug problems may exert different effects on one's perceived ASE for ART depending on whether one is HIV-infected or HIV-TB co-infected when initiating ART. Distinct targeted clinical approaches may be needed for each group.



231 Antiretroviral Treatment Adherence and the HIV Treatment Cascade in Central America

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Background: Central American countries have implemented antiretroviral therapy (ART) programs in different ways. The Central America and Dominican Republic Health Ministers Council (COMISCA) and Pan American Health Organization, with technical assistance from the USAID/Central America Capacity Project (CAMPLUS), used the Continuum of Care Monitoring for HIV model to harmonize monitoring indicators and strengthen analytic capabilities in the region.

Methodology: The CAMPLUS Project, with regional experts, developed a guide to track ART adherence using viral load and to document the HIV treatment cascade (diagnosis, linkage to/retention in care, ART initiation, viral suppression) in El Salvador, Guatemala, and Panama. The analysis focused on HIV clinics in 2013.

Results: In El Salvador (20 clinics, 23,000 PLHIV), 69% know their infection status, 49% were linked to HIV care, 34% have remained in care, 31% are receiving ART, and 22% and 16% have viral loads less than 1,000 and 20 copies/ml, respectively.

In Guatemala (17 clinics, 52,784 PLHIV), there were no records of numbers diagnosed, with knowledge of results, or linked to care. The analysis indicated that 35% have stayed in care, 31% are receiving treatment, and 18% and 16% have viral loads less than 1,000 and 50 copies/ml, respectively.

In Panama (17 clinics, 15,423 PLHIV), most (82%) know their status, 63% are linked to care, 55% have stayed in care, 50% are receiving ART, and 32% and 28% have viral loads less than 1,000 and 50 copies/ml, respectively.

Conclusions: In the three countries, 30%-50% of PLHIV are receiving treatment. By establishing a baseline, the monitoring system can promote increased adherence and improved quality of life. Countries must identify an early diagnosis strategy, particularly for key populations, while strengthening referral and care systems. Health services and community organizations should strengthen coordination to achieve better retention and adherence, ultimately improving the quality of life for PLHIV.

232 Structural, Psychological and Clinic-Based Barriers to Re-Engagement Among Patients Lost to Follow-Up From HIV Care in Eastern Africa

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Introduction: Enrollment at a new site is common after loss to follow-up (LTFU) among patients on antiretroviral treatment in Africa, but little is known about the rate and drivers of re-engagement. We assessed patient-reported barriers to care and their associations with re-engagement after LTFU in eastern Africa.

Methodology: In 14 clinics in Uganda, Kenya and Tanzania participating in the International Epidemiologic Databases to Evaluate AIDS (IeDEA). We intensively traced a random sample of LTFU ART patients (>90 days late for last appointment) in the community. Reasons for non-return were solicited with open-ended questions, and responses were coded into categories and grouped into structural (e.g., lack of transportation, livelihood responsibilities), psychosocial (e.g., stigma, denial) and clinic-based (e.g., waiting times) dimensions. Date of re-engagement was self-reported. We analyzed associations between patient-reported barriers and re-engagement using survival analyses.

Results: Among 364 patients LTFU and alive at tracing (median age 33 years and 67% female), 59% reported structural, 46% psychosocial, 23% clinic-based and 12% no specific barriers. After adjustment for age, sex, CD4 level, and clinical barriers, the incidence of reengagement at 90 days was 47% among those with only a structural, 23% in those with psychosocial and structural, 22% in patients with only clinic-based (i.e., neither a structural nor a psychosocial reason) and 9% in patients reporting only a psychosocial barrier. Psychosocial barriers had a 12% (95% CI: 1% to 24%; $p = 0.04$) larger absolute effect on re-engagement in the presence of a structural barrier as compared to the absence of a structural barrier.

Conclusions: Psychosocial reasons for LTFU tend to be associated with more durable lapses in care, while structural barriers were associated with shorter lapses. Our findings suggest that interventions for increasing retention in care should focus on psychosocial barriers, particularly among patients who also face structural barriers.



233 Use and Adherence to Antiretroviral Therapy Among Pregnant US Women: Results From the Women's Interagency HIV Study

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Background: Antiretroviral therapy (ART) is highly recommended during pregnancy. Suboptimal ART adherence can lead to adverse health outcomes. We sought to characterize changes in ART adherence associated with pregnancy in a cohort of HIV-infected women.

Methodology: Self-reported pregnancies between April 2002 and March 2013 were included. We assessed adherence to ART at the time of self-reported pregnancy outcome (index visit) and six months later (index+1). Participants reporting $\geq 95\%$ adherence to their prescribed ART regimen were considered adherent. We used log-binomial regression with generalized estimating equations to estimate prevalence ratios (PR) for predictors of ART adherence associated with pregnancy.

Results: A total of 502 pregnancies occurred among 297 women. Sixty-two percent of pregnancies occurred among African-American women, and 47% had ≥ 3 prior children. For 363 (72%) pregnancies, women were on ART at index. Median (IQR) age was 33 (29-38) years for treated pregnancies, 30 (26-35) years for untreated ($p < .001$). Among 144 women $\geq 95\%$ adherent at index, 20 (14%) were sub-optimally adherent at index+1; in bivariate analysis, significant predictors of sub-optimal adherence at this follow-up visit were black race (vs. non-black; $p = 0.01$) and those who drank alcohol (vs. abstainers; $p = 0.03$).

Conclusions: In this cohort of HIV-infected US women, recommendations notwithstanding, the prevalence of ART use at the time of pregnancy was only 72%, and 23% of treated pregnant women had discontinued therapy by six months later. Black women and those with more children were less likely to adhere to ART. Subsequent analyses will examine mediation by pregnancy outcome (i.e., live births vs adverse outcomes), and will examine these relationships separately by treatment era, accounting for changes in recommendations for treatment of pregnant women during the study period. Findings from this work have potential implications for the care of young minority female HIV patients who become pregnant.

234 Food Insecurity, Non-Adherence to Antiretroviral Therapy, and Missed Clinic Visits Among Low-Income HIV-Infected Individuals in a Resource-Rich Setting: A Qualitative Study

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Background: Food insecurity is highly prevalent among low-income people living with HIV/AIDS (PLHIV) in resource-rich countries. Food insecurity leads to higher morbidity and mortality among PLHIV via effects on engagement in care, including access to healthcare and adherence to antiretroviral therapy (ART). The mechanisms through which these effects occur in resource-rich settings are poorly understood. Here we aimed to explore these mechanisms using qualitative methods.

Methodology: We conducted semi-structured in-depth interviews with 34 low-income PLHIV receiving food assistance in the San Francisco Bay Area. Topics included experiences with food insecurity and its perceived effects on physical health, mental health, attendance at clinics and hospitals, and adherence to ART. Interviews were audio-recorded and transcribed verbatim. Coding and analysis of transcripts proceeded according to content analysis methods using an inductive-deductive approach.

Results: Participants perceived that food insecurity had direct impacts on physical health, mental health, and engagement in care. Participants described how several downstream effects of food insecurity could contribute to missing healthcare appointments and non-adherence to ART. These included: (1) feelings of hunger, fatigue, and anxiety; (2) worsened side effects of ART in the absence of food; (3) preoccupation with procuring food; and (4) concerns about being seen taking ART with food at food assistance sites due to HIV stigma. Furthermore, both the physical effects of hunger and a chronic feeling of being unable to take care of oneself (epitomized by food insecurity) contributed to stress and symptoms of depression, which also undermined adherence among participants.

Conclusions: Our study extends previous research by describing the mechanisms through which food insecurity may undermine engagement in care and worsen mental health outcomes among PLHIV in a resource-rich setting. These findings emphasize the importance of addressing food insecurity as an essential part of comprehensive HIV care.



235 Challenges and Barriers to the Use of Wisepill to Measure Adherence Among Perinatally HIV-Infected Adolescents in the VUKA Trial in South Africa

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Introduction: Adherence is a significant barrier to actualizing the full potential of antiretrovirals (ARVs) especially among adolescents who are at high risk for non-adherence. Wisepill is a real-time electronic monitoring device (EMD), increasingly being used as an objective adherence measure. Yet, few studies have reported on its use with adolescents, particularly in low-to-middle-income countries (LMIC) with staggering numbers of HIV-positive youth.

Description: We present the feasibility and experience of using Wisepill to assess adherence in an RCT of a family-based risk reduction intervention for perinatally HIV-infected youth (ages 9-14; n = 119) in South Africa. Wisepill stores the patient's ARVs and sends real-time signals to a server each time it is opened. Medications must be refilled and batteries recharged regularly.

Lessons Learned: While most participants learned to use Wisepill, numerous barriers to implementing it correctly and for the duration of the study emerged. In the first month, 39% of the devices did not send a signal for at least 1 day and 27% for 5 or more days. Devices offline for at least 1 day had de-activated SIM cards (43%); "dead" batteries (5%), or lack of cellular network connection (52%). Families also needed reminders to recharge batteries. Some lost interest in or felt burdened by Wisepill, preferring their own pillboxes. Some caregivers reduced monitoring of their child's adherence, assuming Wisepill did that. Improving device implementation required considerable time for training/supporting caregivers, and lay, medical, and research staff.

Recommendations: While EMDs are expensive and resource-intensive for routine clinical care, they likely provide a more accurate picture of adherence than self-report. However, EMDs like Wisepill require a strong infrastructure related to preparation, training, participant engagement, and data monitoring. This may prove challenging in LMIC, where device costs can be prohibitive. Further research is needed to examine feasibility of necessary supports to utilize Wisepill effectively.

236 Psychiatric Disorder and Antiretroviral Medication Adherence Over Time in a Cohort of Perinatally HIV-Infected Youth

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Background: Although psychiatric disorder has been predictive of ARV medication non-adherence in HIV-positive adults, there is limited research in this area among perinatally HIV-infected (PHIV+) youth, a population at high risk for non-adherence. This is one of the first studies to examine the relationships among psychiatric disorders, ARV non-adherence, and detectable viral load (DVL, >400 copies/ml) over time in this population.

Methodology: Data from two time points (approximately 2.5 years apart) from PHIV+ youth (N = 165; ages 13-24 at Time1) participating in a longitudinal study of HIV-affected youth in NYC, were analyzed. Variables included psychiatric disorder (DISC-IV), ARV non-adherence (self-report of last missed dose within past month) and DVL (medical charts). Simple and multiple logistic regression examined associations between psychiatric disorder and 1) non-adherence or 2) DVL within and across time points. Multiple regression analysis for Time2 outcome was adjusted for age, sex, time, and the Time1 outcome.

Results: At Time1, 53% met diagnostic criteria for any psychiatric disorder including substance abuse (PDSA); 60% were non-adherent, and 53% had DVL.

- **Simple regression analyses.** DVL was associated with three of seven categories of psychiatric diagnosis at Time1 [any behavioral disorder (BD) (OR = 3.09, p = 0.008), any psychiatric disorder (PD) (OR = 1.96, p = 0.037), and PDSA (OR = 1.93, p = 0.037)], and only BD at Time 2 (OR = 5.77, p = 0.035). Non-adherence was associated with only PDSA at Time2 (OR = 2.40, p = 0.022).
- **Multiple logistic analyses** of Time1 psychiatric diagnoses and Time2 non-adherence or DVL found one significant association: Time1 PDSA and Time2 non-adherence (OR = 2.52, p = 0.035). Analyses of Time1 non-adherence or DVL and Time2 psychiatric diagnoses found only one significant association: Time1 non-adherence and Time2 mood disorder (OR = 4.95, p = 0.045).

Conclusions: Clinicians treating PHIV+ youth transitioning to adulthood should consider co-occurrence of psychiatric disorder and non-adherence, as well as the bidirectional relationship between psychiatric disorder and medication adherence over time. Evidence-based interventions addressing both may be critical to well-being in this population.



238 Preexposure Chemoprophylaxis for HIV Prevention In Transgender Women

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Background: A subgroup analysis was performed of transgender subjects participating in the iPrEx trial - a randomized controlled trial of FTC/TDF for HIV preexposure chemoprophylaxis (PrEP) in men who have sex with men (MSM) and subjects with a male birth-assigned sex with a gender identity on the transgender spectrum.

Methodology: By an intention-to-treat analysis, efficacy of PrEP in Transgender (T) or Woman (W) failed to reach significance (FTC/TDF: 3.54 v. Placebo: 3.57 HIV-positive per 100 patient years[PY]) $p = .97$ and 2.06 v. 3.98 per 100 PY ($p = .001$) seen in NTW subjects (those not identifying as Transgender or Woman). A test for difference in efficacy of FTC/TDF failed to reach significance (3.54 vs. 2.06 seroconversions per 100 person-years, $p = .17$). Combining TW participants with those taking feminizing hormones (H) to the analysis showed a trend toward lower efficacy (FTC/TDF: 3.63 v. Placebo 3.29 per 100 PY, p for interaction = 0.08). Of the 12 T/W/H subjects who seroconverted during the iPrEx trial, none had detectable TDF or FTC levels by intracellular (N = 9) or plasma (N = 3) analysis.

Results: TDF and FTC drug levels were measured at 8 weeks in a random sampling of 470 subjects in the intervention arm. No difference in prevalence of therapeutic drug levels was detected between T/W and NTW subjects. However analysis of drug levels in a random sample of 303 subjects in the intervention arm measured at several points in time over the course of the intervention demonstrated that significantly fewer T than NTW subjects had drug levels always detected (13% vs 32%) while more were found to have inconsistent levels (61% vs 36%) ($p = .031$).

Conclusion: Further study of HIV chemoprophylaxis in transgender women is needed to determine the factors which underlie observed differences in drug levels as compared to MSM. Such findings will then inform the development of PrEP interventions for transgender women.

239 The Role of Acculturation and HIV Related Factors Among Hispanic MSM in the PrEP Demonstration Project-Miami

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Background: HIV incidence is three times greater among Hispanics compared to non-Hispanics with the majority of new infections occurring among men who have sex with men (MSM). Little is known regarding the role of acculturation as it relates to HIV prevention strategies among Hispanic MSM. For HIV prevention interventions such as PrEP to be effective and acceptable to Hispanics, the role of cultural factors must be explored.

Methodology: Miami-site participants (n = 157) in the open-label U.S. PrEP Demonstration Project were categorized by self-reported ethnicity, language preference, and country of origin. Baseline survey responses regarding serostatus disclosure discussions, risk perception, and beliefs about PrEP efficacy were compared across categories using chi-square analysis.

Results: The majority of participants were of Hispanic origin (73.9%) and born outside the U.S. Language preference was evenly split (50% preferred Spanish, 50% preferred English). Significant differences in disclosure behavior, risk perception, and PrEP efficacy beliefs were noted. Among participants born outside of the U.S., 59.7% had serostatus discussions with all of their partners compared to 34.6% of U.S. born participants ($p = 0.01$). Spanish speaking Hispanic participants ranked their likelihood of HIV acquisition in the next year as 41 on a scale of 0-100, whereas Hispanic English speakers indicated a likelihood of 34 and non-Hispanic English speakers indicated a likelihood of 27 on the same scale ($p = 0.01$). A higher percentage of Spanish speaking participants (21.7%) indicated that PrEP was completely effective compared to non-Spanish speaking participants (2.63%) and participants who equally spoke both English and Spanish (3.13%, $p = 0.048$).

Conclusion: Acculturation may impact HIV serostatus disclosure, HIV risk perception, and PrEP efficacy beliefs among PrEP users in Miami. A nuanced understanding of acculturation is needed to implement appropriate prevention strategies in diverse Hispanic populations.



240 Peer Interventions to Improve Engagement in the HIV Care Cascade: A Systematic Review

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Background: Improving patient engagement HIV care is critical for maximizing the impact of antiretroviral therapy (ART) worldwide. Peers represent one strategy to improve adherence to ART and linkage/retention to HIV care. While a number of studies have been implemented, many come from high-income countries and vary in terms of quality. In order to summarize the current evidence and identify future directions for research, we conducted a systematic review of studies that employed HIV-positive peers to bolster linkage, retention, and/or adherence.

Methodology: We searched articles indexed in Pubmed, PSYCinfo, and CINAHL between 1996-2014 using search terms to identify peer-based interventions with relevant outcomes. Additional studies were identified through hand-searching. Studies were restricted to those published in English, with no restrictions on geographical region or study design. Peers were required to be HIV-positive. Statistical pooling was not possible owing to the heterogeneity of outcomes measured.

Results: In total 8,344 studies were identified through the three databases, with 25 additional articles from other sources. After removing duplicate records and reviewing abstracts, 49 studies were included in the full text review. Twenty met the inclusion criteria. Included studies were primarily focused on improving adherence or retention in HIV care, with only one focused on linkage to care. Twelve studies (60%) were conducted in sub-Saharan Africa. Overall findings indicated that peer interventions improved adherence to ART and retention in HIV care. Several studies with no intervention effects were non-inferiority trials, demonstrating that compared to standard care, peers in low-resource settings helped to offset staff burden while maintaining patient outcomes.

Conclusions: Sufficient evidence exists to support the use of peers for improving adherence to ART and retention in HIV care, particularly in resource-limited settings. Additional research is needed to demonstrate the impact of peer-based interventions on linkage to care in both high and low/middle-resource settings.

242 Food Insecurity, Emotional Distress and Engagement in Care Among Women With HIV in the Dominican Republic: A Qualitative Study

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Introduction: Food insecurity is quantitatively associated with poor HIV outcomes including suboptimal adherence to antiretroviral therapy (ART) among women living with HIV in resource-poor settings. However, few qualitative studies, and none in Latin America and the Caribbean, have been published to elucidate the pathways through which food insecurity compromises HIV-related outcomes.

Methodology: A qualitative study was conducted in the Dominican Republic among urban-dwelling women living with HIV and receiving ART (n = 30). In-depth interviews explored the lived experience of food insecurity and its impact on HIV-related outcomes. Interviews were conducted by local trained study staff, audio-recorded and transcribed. Content coding procedures were used to identify salient themes based on a codebook, while permitting emergent themes.

Results: Almost all participants reported having current or recent food shortages, as well as poor diet quality due to the inability to afford food. Emotional distress caused by an uncertain or insufficient supply of food was particularly evident for women with dependents. While women caring for young children expressed particularly high motivation to access and adhere to ART, they also described more hopelessness about their ability to manage their HIV due to food insecurity and engaged in negative coping strategies including sacrificing food for themselves and transportation to the clinic to feed their children. Women who felt they could tap family, neighbors or state institutions for food support described less distress, fewer competing demands between food and healthcare, and better ART access and adherence than women without such support.

Conclusions: Emotional distress due to food insecurity was highly salient and a key pathway through which lack of food negatively impacted HIV-related outcomes, especially for women with dependent children. Interventions to improve food security, including access to formal or informal food support networks, are needed to reduce emotional distress and optimize HIV outcomes among women in low-resource settings.



243 Mortality and the HIV-Positive Woman: A Case Series

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Introduction: Unlike for other countries where rates of female deaths due to HIV/AIDS related causes remains high, female deaths due to HIV/AIDS related causes in the U.S. occurs at a relatively low rate of 1.3 per every hundred thousand women.

Description: The goal of our case series was to describe circumstances surrounding deaths of HIV-positive women cared for at the UCSF Women's HIV program (UCSF-WHP).

Lessons Learned: During any given quarter there are typically 130 active patients at the UCSF WHP. Between 2004 – 2014, nineteen women died. Three patients were new to clinic, all others had been engaged in care with at least 2 visits per year and most seen far more often. 8/19 women were not taking antiretroviral therapy. 6/19 women carried a documented diagnosis of depression, 2 women were diagnosed with schizophrenia. 6/19 had documented substance abuse at or near the time of death. Only 3/19 deaths were likely attributable to HIV/AIDS related causes, mostly due to non-adherence to ART. Remaining deaths were attributable to: violence (2/19), suicide (3/19), substance abuse (5/19), cancer (2/19), lung disease (1/19), car accident (1/19), or unknown (2/19).

Recommendations: HIV-positive women engaged in care remain at high risk of dying from potentially preventable non-medical causes. Despite having a robust multidisciplinary care team, these deaths suggest missing elements of the care model. Next steps include: increased screening for trauma and PTSD; implementation of a quarterly "risk of death" meeting to proactively identify patients at high risk of mortality from mental health, violence, substance abuse or medical causes; and implementation of an evidence-based model to address trauma in primary care. Our goal is to use information from the case series to build upon and improve the longstanding Ryan White model of multidisciplinary HIV care to achieve improved health outcomes for women living with HIV.

245 Real-Time Antiretroviral Therapy Adherence Monitoring in Rural Alabama: A Proof of Concept Study Using Wisepill Technology in the United States

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Background: Wisepill, a wireless pill container that utilizes mobile phone and internet technology to transmit real-time dosing behaviors, has been tested for ART adherence monitoring in Africa but has limited use in the United States. Traditional forms of electronic adherence monitoring, are logistically prohibitive in many rural U.S. clinics and do not provide real-time data. Wisepill has the potential to overcome many of the limitations of traditional adherence measures, however data regarding the feasibility and acceptability of using Wisepill in rural areas of the US. is currently lacking.

Methodology: This study presents proof-of-concept data from the first 6 months of Wisepill ART adherence monitoring among 18 patients in the U.S. Deep South followed for a total of 127 person months. Adherence was measured by Wisepill and self-report (AIDS Clinical Trials Group Adherence Questionnaire). Comparisons of the two adherence measures were conducted using intraclass correlation analysis.

Results: Median daily adherence was 72.0% as measured by Wisepill. A low degree of concordance was observed between Wisepill and self-report (Intraclass correlation, ICC = .265, 95% CI -.004-.462, P = .005). After dichotomizing adherence to above or below 90% daily, concordance between Wisepill adherence and self-report was 14.7%, Cronbach's Alpha coefficient = 0.224. Technical problems consisted of battery or cellular failures, causing a loss of real-time events of 671. However, the majority of events were recovered when patients were seen for their follow-up visit.

Conclusions: Wisepill adherence monitoring seems to be feasible for use in rural U.S., settings, however real-time monitoring seems to be limited due to cell signal loss. Significant discrepancies seem to exist between self-report and Wisepill data, which allows for more detailed and immediate ART adherence analysis. The potential for adding Wisepill to longitudinal ART adherence protocols in the US should be considered to evaluate its power to predict clinical outcomes.



246 'The ART of Synergy': Qualitative Study on Barriers to HIV Treatment Adherence Among PLWH in Central America

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Background: Eligibility criteria and sub-optimal coverage inhibit many PLWH in Central America from receiving the health benefits of ART. Social, structural, and individual factors also impede effective treatment and care. Across Central American countries, between 13-46% of PLWH abandon ART within one year of initiation. In 2012, as part of the USAID-funded combination prevention program, PASMO conducted formative research to explore barriers and strategies for achieving holistic treatment adherence among PLWH.

Methodology: A study conducted in Nicaragua, El Salvador, Costa Rica and Panama among PLWH included—men who have sex with men (MSM), transgender women (TW), female sex workers (FSW), men at risk (MAR) and women from the general population. 61 in-depth life histories and 20 focus groups were conducted with a life history approach to identify key moments in the treatment continuum when adherence was compromised and to generate consensus regarding the key challenges. From those, 19 life histories and 7 focus groups were conducted among MSM. The life history approach allowed for an emic account of the facts bringing new meaning to them.

Results: Some study participants reported receiving ART from medical providers, psychological support with counselors, and social support in PLWH support groups. MSM reported better adherence to ART when having received not only medical attention, but also psychological and social support. However, the study identified a lack of synergy among all three areas of care with little evidence of coordination among medical providers, counselors and support groups.

Conclusions: Treatment should be redefined in a holistic way (bio-psycho-social). Once treatment is redefined as a holistic process, adherence to ART will become more meaningful and desirable for patients. In this sense, medical appointments, psychological therapy and participation in support groups should be part of treatment. Synergy in these areas will facilitate adherence and hence improved health conditions.

247 HAART Adherence in People Living With HIV Using an Integrative Healthcare Service Facility

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Introduction: The advent of highly active antiretroviral (HAART) therapy has dramatically improved morbidity and mortality for people living with HIV (PLHIV). Achieving and maintaining HAART adherence may be difficult for some PLHIV. The Dr. Peter Centre (DPC), in Vancouver, Canada, is a non-profit integrative care facility for PLHIV experiencing multiple social and health barriers. This analysis aims to investigate prevalence and correlates of optimal HAART adherence among a sample of DPC clients.

Methodology: Enrolment in the study was limited to HIV-positive participants 19 years and over who enrolled in the DPC on or after February 27, 2011. Eligible participants completed a peer-administrated quantitative online survey evaluating DPC client characteristics, including mental health and treatment adherence. Clinical data was ascertained through the BC Centre for Excellence's Drug Treatment Program and linked to the survey data. Adherence to HAART was defined as the number of days prescribed medication over the number of days an individual was eligible for treatment in the previous twelve months, dichotomized at $\geq 95\%$ (adherent) vs. $< 95\%$ (non-adherent).

Results: A quarter of non-adherent survey participants report receiving no current mental health support (25% versus 0%; $p = 0.003$) out of 92 participants (34% adherent, 63% non-adherent). Overall, non-adherent survey participants report receiving less mental health support from a regular physician (49% versus 77%; $p = 0.027$) or ever receiving support from a psychiatric facility (10% versus 31%; $p = 0.027$). In addition, non-adherent survey participants have lower viral load suppression (78% versus 97%; $p = 0.027$). Comparing survey participant perceptions before and after admission the Dr. Peter Centre, fewer non-adherent survey participants expressed feeling completely ready and capable of taking charge of their own health (29% versus 67%; $p = 0.034$).

Conclusions: Particular attention needs to be paid to the unique mental support needs of individuals who are non-adherent. Integrated HIV-related health services are necessary to meet the complex clinical, mental, and emotional needs of marginalized people living with HIV.



248 Innovative Strategies To Address HIV Related Stigma Resulted in Improved Adherence to ART in a Resource Limited Setting

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Introduction: When the PEPFAR program was rolled out in Uganda, very few facilities were ready to offer ART adherence services. The overwhelmed infrastructure, inadequately trained staff in public health facilities were hindering patient adherence to ART in Uganda. Very few children were enrolled on ART. Patients were not keeping appointments and many were failing on ART. Joint Clinical Research Centre (JCRC), a pioneer organization in the provision of ART in Africa, with PEPFAR support was able to rapidly address issues related to HIV related stigma, ART adherence, by successfully implementing a 7 year PEPFAR program called TREAT (Dec 2003-Sept 2010), and a follow on 5 year Program called THALAS (June 2010-June 2015). The JCRC model aimed at addressing HIV stigma, increasing access to OVC care takers, widows, fishing communities and vulnerable populations. The model was to ensure that OVCs and other vulnerable populations get access to ART, by addressing key root causes of Stigma, and affecting patient adherence to ART.

Description: JCRC working closely with public health facilities, CBOs and the private sector, introduced innovative solutions including peer support groups, dance and drama to give a new face to ART, empowering communities to own and find local solutions to HIV related stigma. JCRC adopted a simplified method, by building the capacity of the public health facilities to deliver quality ART services through renovations, extensions of ART clinics and training. A robust drug logistics system ensured all facilities had constant supply of ART. The system supplemented the national drug management system. Strategies to increase access to vulnerable populations and hard to reach communities in IDP camps in Northern Uganda, high risk groups (the military, fishing communities), pediatric focused training to ensure creation of a child friendly environment, training OVCs and caretakers. JCRC trained health workers at all levels, management and leadership courses were offered in collaboration with leading US institutions. A unique ART communication campaign "TREAT For Life", to reduce HIV stigma and promoted ART literacy and to reduce stigma was rolled out in all regions of Uganda. School children participated in launch activities to ensure their stigmatized parents got the message. Regional Centres of Excellence (RCEs) were established to ensure rural areas had access to ART and comprehensive adherence programs. Community leaders were trained to address stigma, and mobilize patients. Decentralized training opportunities for health workers in rural settings were initiated, and RCEs provide QC for district hospitals.

Lessons Learned: The IEC communication campaign increased patient adherence to ART, reduced stigma, and promoted early treatment seeking behaviors among patients. Partnership with CBOs and PMTCT partners has ensured the family is initiated into care at an early stage, and linkages with OVC focused CBOs has resulted in addition services.

Recommendations: More investments are required in peer support groups and community liaison volunteers to reduce stigma and promote adherence to ART.



249 Single Tablet HIV Regimens Facilitate Improved Outcomes Among Treatment Naïve Patients

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Background: The pharmacologic management of HIV has trended toward decreasing pill burden to improve patients' adherence and thus clinical outcomes. Limited data exist to prove daily single tablet regimens (STR) yield better outcomes than multi-tablet regimens (MTR) dosed once daily.

Methodology: Pharmacy fill data, demographics and laboratory results were analyzed for antiretroviral naïve patients starting regimens whose backbone included tenofovir (TDF) and emtricitabine (FTC) at Thomas Street Health Center in Houston, TX, between 2008 and 2011. We assessed adherence as having >80% days covered, retention as defined by HRSA, time to switch from original regimen, and virologic suppression, during the first year. Multivariate models adjusted for propensity scores.

Results: Of 1,084 subjects, mean age was 41.4 years and 786 were men (72.5%), 59.8% were Black non-Hispanic, 31.2% Hispanic, 8.5% white non-Hispanic and 0.5% other. Among the 674 (62.2%) STR subjects, 94.4% were prescribed coformulated TDF/FTC/efavirenz. Among the 410 MTR subjects, 35.4% were prescribed TDF/FTC/atazanavir/ritonavir and 64.6% TDF/FTC/darunavir/ritonavir. Retention in care year one was achieved in 80.7% of STR patients vs. 72.4% of MTR patients (OR 1.51; 95% CI 1.12-2.03; $p = 0.007$). Virologic suppression year one occurred among 81% of STR patients vs. 72.9% of MTR patients (OR 1.40; 95% CI 1.04-1.89; $p = 0.027$). In any given quarter, STR patients were more likely to be on their original regimen and virologically suppressed (OR 1.40; 95% CI 1.15-1.72; $p = 0.001$). Among patients in care and on initial regimen, a greater proportion of STR patients filled over 80% of prescriptions (OR 1.31; 95% CI 1.06-1.61; $p = 0.011$), though attenuated in propensity analysis (OR 1.24; 95% CI 1.00-1.54; $p = 0.053$). All other differences persisted in propensity adjusted multivariate modeling.

Conclusions: In a non-clinical trial setting, STRs yield similar adherence and better retention and virologic suppression than MTRs. These observational data suggest comparably effective STRs may facilitate improved clinical outcomes.



250 Seek, Test, Treat and Retain (STTR) for People Who Inject Drugs (PWID) in Kenya: An Update of this Stepped Wedge Study

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Background: HIV infections in sub-Saharan Africa increasingly occur among people-who-inject-drugs (PWID). Needle-and-syringe-programs (NSPs) and PWID-specific-ART support have been nearly non-existent, though Kenya is among the first to implement NSP at a country-wide level starting in 2013. We present data from an implementation science study to improve testing, linkage and retention in HIV care of PWID in Kenya.

Methodology: This stepped-wedge cluster-randomized-design evaluation uses respondent-driven-sampling (RDS) to reach PWIDs for HIV-1 prevalence and viral load determination [SEEK]. We collect study data in additional time periods as PWID service sites roll out, including behavioral data collected using tablets, rapid HIV testing [TEST], POC CD4 determination for HIV-positives, and assignment of peer case managers (PCMs) to those with CD4 <500 copies/ μ L to link to ART with adherence [TREAT]. Both PCMs and PWID receive small conditional cash transfers for PWID adherence to HIV care visits [RETAIN].

Results: 1,346 individuals were screened during the third intervention period with 1,293 found to be eligible and enrolled (96.1%). Most enrolled participants were male (88.2%). Median age was 32 years; age ranged from 18 to 82 years. Median age at first injection was 27 years. 213 of 1,293 (16.5%) were HIV-positive. About 14.1% (n = 30) of those with HIV infection (n = 213) were newly diagnosed by our study. 54 participants were eligible to be assigned to a PCM and initiate ART. Of those, 50 initiated ART, 49 successfully continued on ART, 0 stopped taking ART, and 1 died. Thus 98% were retained in care (49/50 retained). In total we have now enrolled 3,745 unique PWIDs over the four time waves.

Conclusions: The combination of RDS and rapid testing is an effective strategy for finding PWID with HIV infection, including those not previously diagnosed. Linkage to care by PCMs has been very effective for ART initiation and retention.

251 Real-Time Evaluation of an Enhanced Linkage Intervention for Newly HIV-Infected Patients: the Linkage to Care Specialist Project

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Introduction: The L.A. LGBT Center is one of the region's largest HIV testing and care facilities. In response to the National HIV/AIDS Strategy linkage to care (LTC) goals, the LGBT Center hired a linkage to care specialist (LTC-S), after which LTC rates increased from 70% to 90%.

Description: This demonstration project prospectively evaluates this LTC strategy, in which the LTC-S meets one-on-one with newly-diagnosed patients and tailors his intervention based on individual need. This involves setting additional meetings, following up with clients, and providing referrals. The purpose of the LTC-S project is to track which individuals see an HIV medical provider within 3 months following diagnosis and determine the cost associated with implementing the project. A new assessment designed for this study, administered within 2 weeks post-disclosure and at follow-up, explores early reactions by focusing on domains of fear, stigma, knowledge, attitudes, and support.

Lessons Learned: At present, 80 individuals have been enrolled. All participants are male and report having sex with men (93% gay, 7% bisexual). Most are Latino (45%) or White (32%), with 91% (n = 73) linking to care within 3 months post-disclosure. Linkage has taken an average of 22.5 days (SD = 13.7), with 2.3 hours (SD = 1.1) of staff time dedicated to linkage activities. This project demonstrates that enrolling participants in care close to diagnosis is feasible and acceptable, as long as a patient-centered approach is taken. Preliminary results indicate that while most clients are knowledgeable about HIV, many report moderate levels of stigma and fear at baseline. In addition, bilingual and bicultural individuals may be best suited to deliver LTC-S services to diverse urban populations.

Recommendations: Current HIV testing facilities and social service programs may benefit from incorporating a LTC-S into their programs to improve LTC rates in a manner that is acceptable to both patients and service providers.



252 The Navigation Program: Innovative Methods for Finding and Re-Engaging Lost HIV Clinic Patients

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Introduction: An estimated 47% of HIV-infected persons in Los Angeles County (LAC) were retained in care in 2011. The Navigation Program used a combination of Disease Investigation Services (DIS) locator techniques and a modified Antiretroviral Treatment Access Study (ARTAS) strengths-based case management intervention to locate and re-engage lost patients at seven LAC clinics.

Description: Eligible lost clinic patients included HIV-infected persons aged 18 and older with any of the following: a) no reported VL or CD4 measures in the previous 12 months; b) no reported VL or CD4 in 7-12 months with most recent VL >200 copies/ml; c) newly-diagnosed and not linked within 3 months; or d) recent incarceration with no regular provider. HIV care status, residency, vital status and contact information was obtained via HIV/STD surveillance, clinic records and public databases. Once located, a modified ARTAS intervention was administered to promote re-engagement. HIV surveillance data was used to verify eligibility and track retention.

Lessons Learned: Among 1,139 lost clinic patients, 60% were ineligible (i.e., in-care elsewhere, deceased, not LAC residents or incarcerated); 29% had invalid contact information; 4% declined and 7% were located and enrolled (n = 78). The majority of patients were Latino (71%), male (78%) and uninsured (57%). An average of 4.8 appointments and 11.6 hours of staff time was needed to re-engage patients. A total of 73 patients (94%) have been re-engaged to care, with most (85%) re-engaging within six months of first contact. Respondents reported needing multiple referrals (avg = 4.8) for oral health (n = 60%), nutrition (35%) and mental health (27%) services. Competing needs (50%), financial assistance (26%) and transportation (17%) were major barriers to obtaining care. Among those enrolled, 82% (n = 60) were retained in care at 12 months. The percentage virally suppressed was higher at 12 months of follow-up (63%) compared to time of enrollment (50%; p < 0.01).

Recommendations: These data suggest that a combined DIS and ARTAS approach can effectively identify lost HIV clinic patients, promote re-engagement in HIV care and improve the proportion virally suppressed.

253 Does a Baseline Information-Motivation-Behavior Skills (IMB) Model of "Retention in HIV Care" Predict Retention in Care and HIV Viral Load Improvement at Six Months in Hospitalized, Out-of-Care Persons Living With HIV?

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Background: Although the IMB Health Behavior Model is well-known, it has only recently been extended to retention in HIV care. An IMB "retention in HIV care" measure, operationalizing retention-related information, motivation, and behavior skills, has been developed and evaluated. We tested whether measurements from IMB-Retention in HIV Care at baseline predicted retention in care and HIV viral load improvement at six months.

Methodology: English-speaking, out-of-care, HIV-positive individuals completed IMB-Retention in HIV Care at baseline, with IMB-related measures of belief in care, access to care, trust in physician, stigma, social support, general self-efficacy, appointment and medication self-efficacy, life chaos, and positive and negative coping. A conceptual model was developed: Motivation predicted behavioral skills, both of which predicted retention in care and HIV viral load improvement. We assessed bivariate relationships across model variables (Spearman's rho) and conducted a path analysis (PA) to identify significant direct, indirect, and total effects of baseline IMB model components on 6-month outcomes. PA's strength is its ability to simultaneously estimate multiple regression equations in examining complex relationships. For PA we analyzed the model variables' covariance structure.

Results: Our sample, with measurements at baseline on 13 predictor variables and at six months on two outcome variables, included N = 251 patients. In the PA motivation had significant total effects on behavioral skills, retention in care, and HIV viral load improvement. Behavioral skills had a near-significant total effect on HIV viral load improvement, and retention in care had a significant total effect on HIV viral load improvement. The overall PA model displayed good fit to the data (chi-square = 39.7, p = 0.14, RMSEA = 0.03).

Conclusions: Consistent with IMB-Retention in Care model hypotheses, motivation and behavior skills played important roles in predicting 6-month outcomes. The IMB-Retention in HIV Care model is currently being used to evaluate the impact of 3-month and 6-month IMB status on outcomes.



254 Project Engage: An Innovative Technique for Finding and Linking Marginalized Out of Care HIV-Positive Persons in Los Angeles County

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Introduction: Project Engage (PE) was designed to find hard-to-reach out of care (OOC) HIV-positive persons and link them to HIV care.

Description: Recruitment strategies included a combination of snowball sampling, using trained recruiters from local HIV clinics and directly through the use of outreach workers and flyers. OOC was defined as an HIV-positive individual with either: 1) no HIV care visits in >12 months; 2) no HIV care for 7-12 months and most recent VL >200 copies/ml; 3) newly-diagnosed and not linked within 3 months; or 4) recently released from jail with no identified primary HIV provider. Participants were incentivized \$40 for completing a baseline survey. Recruiters and OOC persons received \$40 when a referred OOC person linked to care. OOC status was verified using HIV surveillance data. Staff advocated for linkage to care and helped negotiate barriers.

Lessons Learned: Currently 140 participants are enrolled including 61 recruiters and 79 OOC persons living with HIV. Among OOC persons, 28 (35%) were enrolled through direct recruitment and 51 (65%) through snowball sampling. The participating OOC persons are African-American (38%), MSM (67%), uninsured (48%), recently incarcerated (52%), homeless (78%) and recently engaged in exchange sex (28%). On average, OOC persons had not seen a provider for 13 months and 24% were on ART at enrollment. Participants reported an average of 9 sexual partners (previous 6-months) and 34% had a suppressed VL prior to enrollment per HIV surveillance data (mean = 121,582 copies/ml). It took an average of 31 days to link a participant to HIV care and 7.2 hours of staff time. Among OOC persons, 75% (n = 59) were linked to care, and of those enrolled for six months (n = 55), 75% were retained in care. Program acceptability was high.

Recommendations: A combined methodology of snowball sampling and direct recruitment is effective for finding severely marginalized OOC HIV-positive persons and critical for supporting linkage to HIV care efforts.

256 The PsychoMedical Model-Facilitating Care Along the Continuum for Substance Users Living With HIV/AIDS

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Introduction: Substance users have been deemed a notoriously hard-to-reach and hard-to-treat population. Active drug users are less likely to receive Highly Active Anti-Retroviral Treatment (HAART) than other HIV-positive patients and have derived less therapeutic benefit from HAART than any other at-risk population (Broadhead, et al., 2002). Once treatment has been initiated, IDUs are less likely to adhere to medications and more likely to discontinue HAART outright. Lower rates of access and adherence among IDUs lead to sub-optimal clinical outcomes (Wood, Kerr, Tyndall & Montaner, 2008); and only an estimated 10-15% of HIV-positive drug users are in drug treatment at any given time (Broadhead, et al., 2002).

Description: PSYMED is an evidence-based intensive counseling, case management, and patient navigation intervention for active drug users which combines motivational interviewing counseling, clinical care support, referral for drug treatment, and individual behavior change strategies. PSYMED engages active drug users and facilitates their linkage into healthcare and drug treatment, support participant retention in HIV care and ART adherence, and assist them in reducing sex and drug related risk-taking behaviors. PSYMED is derived from research conducted by Robles et al., 2004, from the Universidad Central del Caribe- School of Medicine, Puerto Rico, with Latino injection drug users. Funded by the National Institute of Drug Abuse, the goal of the study was to test the effectiveness of a combined counseling and case management behavioral intervention that used behavioral readiness staging and motivational interviewing techniques to engage injection drug users, facilitate their entry into drug treatment and the health care system, and increase their self-efficacy in identifying and modifying drug and sex-related HIV risk behaviors.

Lessons Learned: Approximately 15% (n = 37) of the 285 participants in the experimental group were HIV-positive and linked to healthcare, drug treatment, and psychiatric services. At six-month follow up, all intervention participants were: Twice more likely to have entered drug treatment; less likely to have continued injection drug use; almost twice as likely to have increased self-efficacy in needle-sharing situations; less likely to pool money to buy drugs; and less than half as likely to share needles. In community practice settings, PSYMED [the packaged version of this research] has been successfully used to engage or reengage active drug users in healthcare and medical treatment after once they have tested HIV-positive. PSYMED is one of few interventions specifically targeting drug users that is research driven and found to be effective among community/clinical practitioners.

Recommendations: This presentation will focus on the following components: Explain the overall goal and major objectives of PSYMED-to identify HIV-positive drug users, link them to care and health services, provide support for antiretroviral therapy and retain them in care; Identify the research and theories supporting PSYMED; Describe the core elements and key characteristics of PSYMED; Identify the six sessions and the booster session that makes PSYMED a unique cognitive behavioral intervention; Discuss the behavioral determinants of risk that are specific to HIV-positive drug users.



257 Utilization of Process Improvement Methodologies in the HIV Continuum: Mapping for Linkage-to-Care Quality and Results

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Introduction: Effective and sustainable linkage to HIV care and treatment is a high priority in the HIV Care Continuum. Following an HIV diagnosis, it has been estimated that only 72% of those with positive HIV test results have been linked to care within a four (4) month period. It has been noted that only an estimated 19% of HIV infected individuals are engaged in the full spectrum of the HIV Treatment Cascade to achieve undetectable viral load suppression through ART (Antiretroviral Therapy). It has also been noted that many newly diagnosed HIV-positive individuals have difficulty making it through the early stages of the treatment cascade including initial linkage to care. There are several factors that could impact initial linkage-to-care including: poorly constructed linkage to care models, inefficient linkage processes, poorly constructed medical service agreements and lack of adherence to linkage protocols. Process improvement initiatives utilizing process methodologies is a systematic way to perform objective process analysis. The effective application of tools and techniques, including process mapping can bring critical awareness to the strengths and weaknesses of a linkage model and lead to informed decisions on improvement.

Description: In a case study of newly installed HIV testing and linkage-to-care services for adolescents and young adults at Children's National Medical Center, Washington, DC, process mapping was utilized to assess strengths and weaknesses in the linkage to care model to identify opportunities for improvement. A capacity building intervention was facilitated through a CDC (Centers for Disease Control and Prevention) capacity building assistance partnership to assist Children's with installing a new HIV testing and linkage to care program. After testing activities and commenced and HIV positives were identified, a process analysis was conducted to look at variables and effectiveness of the linkage to care protocol. In building the capacity to improve outcomes in the Linkage-to-Care component of the HIV Treatment Cascade, Process Mapping and other diagnostic methodologies have been used to identify opportunities for improvement. Process Mapping is a method of visual analysis of a linkage to care model and provides a pictorial reference to the coordination of collaborative partnership in the HIV Care Continuum. The Mapping process facilitates a systematic review of personnel, procedures, tasks, standards and regulations.

Lessons Learned: Facilitation of the Linkage-to-Care Process Mapping intervention heightened the awareness factor that is the first and most critical element in the improvement process. Through process mapping Children's National Medical Center was able to better understand the elements of their linkage to care model and identify areas of improvement including incorporation of enhanced performance indicators, capturing patient data, and strengthening partner relationships with the Social Work Department. The Process Improvement methodology implemented with Children's opened a first wave of improvement initiatives for health and medical outcomes of program clients.

Recommendations: In order to impact long-term health and medical outcomes of persons infected with HIV, it is important for community and clinic based providers of HIV prevention services to frequently revisit Linkage-to-Care models to assess strengths and opportunities for improvement in the linkage protocol to increase the number of HIV-positive individuals linked to care after diagnosis. It is recommended that providers adopt and utilize process improvement methodologies like process mapping to visually identify processes, process groups, tasks and services integration entry points for systematic analysis. In order to fully integrate this process improvement initiative into the protocol, it is recommended that a workgroup be formed to schedule, implement, analyze and incorporate change in the linkage to care system.



258 Knowledge of Prevention and Adherence to Antiretroviral by HIV-Positive Adolescents Attending a Treatment Site in Lagos, Nigeria

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Background: In Nigeria, there is paucity of data as regards HIV-positive adolescents on treatment with regards their knowledge of HIV prevention, management and adherence.

Methodology: This was a cross-sectional study carried out with the use of questionnaires administered to 100 adolescents attending a treatment site in Lagos. The data obtained were collated and analyzed using SPSS version 17.

Results: More than half (66.0%) of the respondents were females and the mean age was 17.9 ± 2.8 years. One-third (75%) knew that infection with HIV can be prevented when condom is properly worn. Most (88%) of the respondents were on AZT, 3TC & NVP combination. They all knew the names of their ARVs. Thirty-five of the respondents believe that HIV can be completely cured. Self-reported 7 days recall dose adherence was 84% while adherence to time was 19%. The two main tools used as reminders were setting of alarms (47%) and use of family members (35%). The main reasons for missing drugs were; 'being busy with other things' (18%) followed by forgetfulness (11%). Almost all (99%) have average idea of the implication of not taking their drugs when and how they should. However, only 27% know they can develop resistance if their drugs are not taken when and how it should. Most (84%) admit to feeling uncomfortable around friends.

Conclusion: The knowledge of prevention, management and adherence of the adolescents in this treatment site is above average. There is however need for additional counseling to correct the belief that HIV can be cured, to emphasize the need for strict adherence to time and the possible consequences of non-adherence.

260 Positive Links: Tailored Mobile App Improves Engagement in Care

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Background: People living with HIV (PLWH) face complex challenges to engagement in HIV care. Many of these are partially addressed during clinical care, but others remain unmet. The Positive Links (PL) program promotes engagement by pairing a tailored smart phone application that delivers HIV education and management tools, wellness promotion strategies, and social support with responsive staff support that extends care beyond clinic.

Methodology: The PL program has enrolled 52 individuals based on provider referrals. The PL team provided participants with a smartphone with a voice and data plan, loaded with the PL app. The participants also have access to the PL care coordinator through the application and in-person. Participants completed baseline and six month surveys. App use data are collected continuously. Clinical data were collected from medical records. The total period of participation is 18 months.

Results: 70% of participants are male. 44% are black. 46% are men who have sex with men. Mean age is 35, and mean federal poverty level is 55%. Participants reported high levels of stigma and stress at baseline. Housing insecurity (21%), transportation (19%), and food insecurity (37%) were identified as challenges. Participants used the app regularly. Mean number of interactions in 180 days was 297 (range: 0-598). At baseline, 44% (23/52) had attended 2 visits separated by 90 days in the past 12 months. At six month follow-up 87% (45/52) achieved this ($p < 0.001$). A dose-response effect was observed relating level of app interaction by quartile to greater appointment adherence ($p = 0.02$) and, for high use of the community message board, to viral suppression ($p = 0.05$).

Conclusions: The PL program provides "warm technology" by combining a tailored mobile-based application with care coordination. It significantly increased engagement in care and showed promising trends towards improved clinical outcomes in a high-risk population of PLWH.



262 Greater Intervention Contact Time is Associated With Less HIV Viral Load Suppression

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Background: Prior studies suggest that the amount of exposure to an intervention may be associated with health outcomes. However, less is known about this relationship with respect to HIV clinical outcomes. Therefore, among a cohort of HIV-positive women, we examined the relationship between intervention contact time and HIV viral load (VL) suppression.

Methodology: The multisite SPNS Women of Color Initiative recruited women with varying levels of engagement in HIV medical care at 9 U.S.-based demonstration sites (clinics and/or community-based organizations), each with a different intervention design. For a sample of participants, total intervention contact time per participant was measured for a 2-week period within 6 months after study enrollment. To account for clustering of observations within individuals, generalized estimating equations analysis was conducted to determine the relationship of total intervention contact time to VL suppression over the follow-up year, controlling for age, race/ethnicity, high-risk behaviors, baseline VL suppression and time from baseline to the 2-week sampling period.

Results: Among our analytic sample ($n = 406$), median age was 41.4 years, 60.6% were non-Hispanic Black, and 32.3% Hispanic. At baseline, 35% reported current high-risk sexual behaviors, 10.6% high-risk drug use behaviors, and 33.3% had VL suppression. Median total intervention contact time during the 2-week sampling period was 0.5 hours (IQR 0.20- 1.38). In multivariate analysis, women with greater intervention contact time were less likely to achieve VL suppression (aOR = 0.93; 95% CI: 0.86-0.99).

Conclusions: Among HIV-positive women enrolling in a multisite initiative, greater initial intervention contact time was associated with less VL suppression. This finding suggests that women who early on require more time-intensive encounters may be at increased risk for poor clinical outcomes. As such, greater initial intervention contact time may be used as a possible marker of risk to identify participants for whom enhanced support is needed.

263 Neurocognitive Correlates of Adherence in Youth With Behaviorally Acquired HIV

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Background: Youth with behaviorally acquired HIV (YLWH) are at-risk for both neurocognitive disorders and medication non-adherence; however, little is known about the relationship between these two important clinical outcomes in YLWH.

Methodology: Longitudinal study of the impact of early (i.e., CD4 >350) versus standard of care (SOC; CD4 <350 cells/mm³) on neurocognitive functioning in treatment naïve YLWH. Comprehensive neurocognitive assessments (including global intellectual functioning, adaptive functioning, memory, motor skills, attention, and executive functions), brief psychiatric (depression and emotional/behavioral symptoms) and substance use screening measures were administered at baseline and week 144. Adherence was assessed via self-reported recall for the 7 days preceding the visit, using >90% criterion to define adherence. Fisher's exact and Wilcoxon Rank-Sum test were used for categorical and continuous scale analysis, respectively.

Results: $N = 111$ treatment-naïve YLWH, mean age 21 years, 87% male, 65% Black/African American, 24% Hispanic, with mean 16.5 months since diagnosis, who initiated treatment post-enrollment were included in analyses. Better verbal learning recognition ($p = 0.049$), poorer visual memory recall ($p = 0.035$), lower depression severity ($p < 0.001$), and lower global symptom index (GSI; $p = 0.017$) at baseline predicted better adherence at week 144. At week 144, only GSI ($p = 0.033$) and lower tobacco use risk ($p = 0.021$) related to better past week adherence.

Conclusions: The significant relationship observed between adherence and emotional/behavioral functioning measured at baseline and week 144 emphasizes the potential impact of mental health concerns on adherence and health outcomes, highlighting the need to address mental health issues to sustain optimal adherence among YLWH. Memory functioning measured prior to treatment initiation predicted adherence; however, the differing relationships between adherence and episodic memory processes across verbal and visual domains, and the role of tobacco use risk, require further study.



264 Does Advance Care Planning (ACP) Increase Medication Adherence Among HIV-Positive Adults?

Maureen Lyon (presenting)¹

¹ Children's National, Washington, DC, USA

Background: Among patients with HIV advance care planning (ACP) may influence adherence by serving as reminder of mortality. ACP involves shared decision making regarding end of life decisions among patients, chosen surrogates and healthcare providers.

Methodology: As part of an IRB-approved 2-arm randomized controlled clinical trial, we explored the relationship between an ACP intervention on patient-reported medication adherence (Visual Analog Scale) and chart verified viral load (VL) at 3-months post-intervention. Only persons prescribed ART were included in this interim analysis (n = 45). Undetectable VL was defined as plasma HIV-1 RNA VL <50 copies/mL. Generalized Estimating Equations (GEE) examined intervention effects.

Results: Mean age, 51 years; 55% male, 86% African American, 70% heterosexual; 58% less than 300% of Federal poverty level. 61% were sexually infected; 9% via injection drug use; 30% congenital/iatrogenic/unknown. Self-reported adherence and VL were not significantly correlated at either baseline (p = 0.3636) or 3 month post-intervention (p = 0.5472). There was no intervention effect on viral load (p = 0.2114), nor interaction between time and intervention (p = 0.6877) in GEE model. The proportion of undetectable VL increased for both intervention group (from 74% to 81%) and control group (from 89% to 94%). Self-reported adherence at ≥90% decreased in both groups for intervention from 93% to 85% and for control from 100% to 94%. Because of the restricted range in variance, p values could not be calculated.

Conclusions: The analysis did not identify a significant effect for ACP. There was not enough variance in the data, i.e. overall high levels of adherence and undetectable viral loads were high, making it difficult to find significant differences (ceiling effects). The incongruent decline in self-reported adherence may reflect increased honesty, as trust increased; for regardless of treatment arm, viral suppression trended towards improvement over time, potentially because of increased contact with care providers or mortality reminders with supportive surrogates.

266 "In Our Stories": HIV-Positive Women's Perspectives on an Evidence-Based Intervention

Sannisha Dale (presenting)¹, Tiffany Grimes², Lauren Miller³, Alyssa Ursillo⁴, Mari-Lynn Drainoni⁵

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Introduction: A qualitative study was conducted among HIV-positive women to assess what aspects of WILLOW (a group CDC evidence-based interventions targeting HIV transmission risk reduction) women valued and how their lives were impacted as a result of their WILLOW participation.

Method: Forty HIV-positive women were randomly selected from a list of women who completed WILLOW at a large hospital in the Boston area. Eight women were unreachable and of the remaining 32, 31 women completed a 1-hour interview that was audio recorded, transcribed, and analyzed using Grounded Theory methods. Of the 31 women, 80.6% identified as African-American and their mean age was 48.

Results: Findings revealed that women valued the personal stories told by each other and positive group dynamics consisting of safety, trust, openness, getting feedback, bonding, and socializing. Women also shared that as a result of WILLOW they embraced a strong woman image, joined other groups, changed old behaviors, accepted their HIV status, gained an optimistic outlook on life, and learned to speak up and advocate about issues within relationships and in their communities.

Conclusions: These qualitative findings emphasize factors that may contribute to the acceptability of an intervention among women with HIV and the broad influences that an intervention may have beyond the specific targeted outcomes. Interventions for HIV-positive women may benefit from incorporating the sharing of stories in their curriculums and factors that build positive group dynamics.



267 Gaps in Ancillary Services Among HIV-Infected Substance- Using Ryan White Recipients in Los Angeles County

Rhodri Dierst-Davies (presenting)¹, Linda Bourque², Amy Rock-Wohl¹

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Background: Substance use among HIV-infected individuals is strongly correlated with increased morbidity and mortality. Historically, lower income HIV-infected persons in the United States accessed services through programs funded by the Ryan White (RW) Care Act. This study examines the effects of substance use on ancillary service gaps among a representative sample of RW recipients in Los Angeles County, California.

Methodology: Data from the 2011 Los Angeles Coordinated HIV/AIDS Needs Assessment were utilized. A two-stage, stratified, probability-proportional-to-size sampling design was used to identify a representative sample of agencies/clients. Individual levels weighting was used to adjust the effective sample size from 400 to 18,951 persons, similar to the 19,915 recipients in the RW system during the surveillance period. Approximately 30% (119 unweighted, 5,743 weighted) of recipients reported recent substance use. Nested Poisson and logistic regression analysis determined factors associated with both reporting service gap(s), as well as the number of gaps reported.

Results: Logistic regression revealed an elevated risk for reporting service gap(s) (RR range: 2.87-3.45) among substance users. Risks of reporting additional gaps by substance users (Poisson regression) were less robust (RR range: 0.89-1.30). Among substance users, stimulant users (RR range: 1.54-1.75) reported an elevated risk of reporting additional gaps. Increased risks for service gaps were also reported by mental health status, females and those reporting lapses in medical care. When stratified by barrier type, stimulant users identifying resource-based barriers were at increased risk of reporting additional gap(s) (RR = 1.62) compared to those reporting information-based barriers.

Conclusion/Implications: Findings suggest that substance users were not only at increased risk of reporting service gaps, but within this group, stimulant use affected the number of gaps reported. Additionally, substance users are more likely to report lacking resources to obtain needed services. Providers should focus efforts to ensure that substance users have sufficient resources to obtain the full spectrum of needed services.

271 Quality of Life, Viral Load, and Self-Reported Adherence in Adolescents Living With HIV

Allison Kimmel (presenting)¹, Yao Cheng¹, Jichuan Wang¹, Maureen Lyon¹

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Background: Quality of Life (QoL) is an important measure to capture a comprehensive understanding of patient well-being. Use of QoL measures in conjunction with biological endpoints may be useful in the evaluation of treatment regimens and guide patient care.

Methodology: Baseline data were collected from 105 adolescents living with HIV from the FAmily-CEntered Advance Care Planning trial from six urban, hospital-based clinics. Varni's 1998 Pediatric Quality of Life Inventory assessed QoL, range 0-100 (the higher the score, the better QoL). Viral load was abstracted from medical record (coded as <90% adherence vs. ≥90% adherence). T-tests were used to test the relationship of adherence and viral load with QoL. An exact median two-sample test was used to test the same relationship by the source of transmission.

Results: Only adolescents prescribed ART were included in analysis (N = 94). Participants were: 54% male, 95% African-American/black, 7% Hispanic/Latino, 77% perinatally-infected, mean age 18 years (range 14-20). Fifty-one percent reported adherence ≥90%. Sixty-two percent had viral load <400 copies/mL. Participants with adherence ≥90% had non-significantly higher mean scores than those with adherence <90% (Total 85 vs. 84, p = 0.7599). Participants with viral load <400 had non-significantly higher mean scores than those with viral load ≥ 400 copies/mL (Total 85 vs. 83, p = 0.3862) and marginally significantly higher mean score in School functioning (73.3 vs. 66.1, p = 0.0864). Non-perinatally infected participants with adherence ≥90% had significantly higher median of emotional score than those with adherence <90% (83 vs. 68, p = 0.0019).

Conclusion: Quality of Life scores were high regardless of biological endpoints, although those with better adherence and lower viral load had slightly higher scores, similar to previous adult studies. Longitudinal study is needed to best understand this relationship.



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 Appiagyei¹, Julia Hill², Prianca 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

Background: In May 2014, the Centers for Disease Control and Prevention released comprehensive clinical practice guidelines for health care providers on the use of Pre-Exposure Prophylaxis (PrEP). These guidelines recommend that providers consider offering PrEP as a prevention option to injection drug users and high risk sexually active adults. Because the extent of adoption of these recommendations among providers is currently unknown in NC, we conducted a statewide survey to determine the uptake of these guidelines among primary care physicians.

Methodology: We randomly sampled 10% of the entire population of NC primary care physicians (defined here as family and internal medicine) and mailed a self-administered survey using the Dillman total design method during October 2014-April 2015. Although the survey mainly focused on HIV screening practices, physicians were also asked questions regarding their use of PrEP. Physicians specifically were asked if they had ever prescribed PrEP. They were also asked to describe patients for whom PrEP was prescribed. Fifty-nine percent (n = 327) of eligible participants (n = 584) responded (59% response rate).

Results: Only 25 of 327 respondents (7%) reported having ever prescribed pre-exposure prophylaxis (PrEP) to their patients. Most (16/25) of these PrEP prescribers were male physicians who worked in urban practice settings. Of those who reported prescribing PrEP, 56% (14/25) reported prescribing it for men who have sex with men, 36% (9/25) for heterosexuals and 8% (2/25) for injection drug users.

Conclusion: To our knowledge, this is the first statewide survey of PrEP prescribing practices among primary care physicians. Few primary care physicians in North Carolina report having ever prescribed PrEP. These findings may apply to other states as well. More research is needed to understand the provider barriers to disseminating and implementing PrEP in primary care practices.

277 Scale Up of HIV Services: A Best Practices Strategic Collaborative Model for Urban Jurisdictions and Metropolitan Areas

Marsha Martin (presenting)¹, Sam Rivera¹

¹ Urban Coalition for HIV/AIDS Prevention Services, Washington, DC, USA

Background: Begun as an informal collaborative of community representatives and local government officials funded to provide prevention services from the US Centers for Disease Control and Prevention, the Urban Coalition for HIV/AIDS Prevention Services, UCHAPS -- and the strategic framework upon which it is based -- involves the establishment of partnerships of people living with HIV/community leaders and health department representatives/government officials from heavily impacted urban jurisdictions in the US.

Description: Operating under the philosophy of inclusion, representation and parity, the Urban Coalition for HIV/AIDS Prevention Services is comprised of delegations of members from community and government in equal number, elected from select urban centers. UCHAPS cities/jurisdictions are among the epicenters of the urban HIV epidemic and are often at the forefront of piloting new interventions and demonstrating efficacy. Jurisdictional delegation members represent the best thinkers and leaders in HIV locally.

Results: Using a peer to peer based model of technical assistance between its member delegations, the coalition meets quarterly to review and discuss a topic of particular interest, or pressing need: sharing information, ideas and resources gathered from the day to day realities of managing and implementing HIV programs. As HIV prevention pioneers, UCHAPS jurisdictions are often on the leading edge of responding to HIV prevention challenges, using knowledge and lessons learned from the field.

Conclusions: The UCHAPS collaborative strategic framework is based on the belief that by working together in partnership, the local HIV response can be better managed and better implemented. Community and government at the same table, in equal number, with equal decision making authority, sharing the burden of implementation, creating and managing the response together. The coalition is co-chaired by a civil society representative and a government official. UCHAPS jurisdictions have achieved reductions in incidence through application and exchange of evidence-informed best practices in public health.



278 Syndemics of Psychosocial Problems and HIV Risk: A Systematic Review of Empirical Tests of the Disease Interaction Concept

Alex Tsai (presenting)¹, Bridget Burns¹

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Background: According to the theory of syndemics, diseases co-occur in particular temporal or geographical contexts due to harmful social conditions (disease concentration) and interact at the level of populations and individuals, with mutually enhancing deleterious consequences for health (disease interaction). This theory has widespread adherents in the field of HIV prevention, but the extent to which there is empirical support for the concept of disease interaction remains unclear.

Methodology: In January 2015 we systematically searched seven bibliographic databases and tracked citations to highly cited publications associated with the theory of syndemics.

Results: Of the 784 records, we ultimately included 31 published journal articles, 5 dissertations, and 1 conference abstract. Most studies were based on a cross-sectional design (30 [81%]), conducted in the U.S. (29 [78%]), and focused on men who have sex with men (20 [54%]). The most frequently studied psychosocial problems were related to mental health (31 [84%]), substance abuse (32 [86%]), and violence (27 [73%]); while the most frequently studied outcome variables were HIV transmission risk behaviors (28 [76%]) or HIV infection (9 [24%]). To test the disease interaction concept, 11 (30%) studies used some variation of a product term, with less than half of these (5/11 [45%]) providing sufficient information to interpret interaction both on an additive and on a multiplicative scale. The most frequently used specification (28 [76%]) to test the disease interaction concept was the sum score corresponding to the total count of psychosocial problems. Although the count variable approach cannot provide information about the extent of interaction between psychosocial problems, these studies were much more likely than others to incorporate incorrect language about “synergy” or “interaction” (13/28 [46%] vs. 0/9 [0%]; $\chi^2 = 6.44$, $P = 0.01$).

Conclusions: More evidence is needed to assess the extent to which diseases interact, either at the level of populations or individuals, to amplify HIV risk.

284 Peer Navigators in the Ryan White HIV/AIDS Program: Models, Successes and Challenges

Rupali Doshi (presenting)¹, Ameila Khalil¹, Tracey Gantt¹

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Introduction: Recent data demonstrates that over 90% of new HIV infections are attributable to people living with HIV (PLWH) who are either unaware of their diagnosis or have not been retained in HIV care. Improvements in retention in care are expected to reduce HIV incidence. Patient navigators serve as one of the critical links between providers and patients to facilitate access to services and improve the quality and cultural competence of health care service delivery. Navigators, which can include health care professionals and lay workers, can help to reduce disparities in care and even avert or circumvent potential obstacles. The use of patient navigation has been most prominent in cancer screening and treatment. Peer navigators share common medical experiences with patients. They can leverage shared experience to foster trust and create a sustainable forum for seeking help, share information about resources and coping strategies, and build health literacy. Given the similarities between cancer and HIV (complexity of disease and treatment, multiple medical tests and appointments needed, and history of stigma), it has been postulated that use of HIV peer navigators could result in improvements in retention in care. However, the evidence base for HIV peer navigation programs remains limited.

Description: There have been multiple models of HIV peer navigation programs funded by the Ryan White HIV/AIDS Program (RWHP). We will describe successful programs implemented in Nashville, Chicago, and Charleston.

Lessons Learned: Successes of the RWHP-funded peer navigation programs include improvements in retention in HIV care and adherence to medical appointments and improved engagement with the health care team. Challenges to implementation include funding, training, certification, human resources development, and maintenance of patient confidentiality.

Recommendations: More research is needed to examine the effects of HIV peer navigation on retention and re-engagement in care outcomes, in order to improve health outcomes for PLWH and reduce HIV transmission.



285 Assess the Feasibility of Establishing HIV Testing and Linkage Program in District Prison Malir (DPM), Karachi, Pakistan

Anees Siddiqui (presenting)¹

¹ District Prison Malir, Karachi, Sindh, PAKISTAN

Background: Prisoners are at increased risk of acquiring human immunodeficiency virus (HIV) infection, a recent study in DPM shows that 2% were HIV-positive, 5.9% had HBV and 15.2% were suffering from HCV. Confinement provides an opportunity to access primary health care and HIV testing services particularly for risk groups. District prison Malir houses one of the highest numbers of inmates in the country. At the moment there are 2,200 prisoners in the facility. Current HIV care and testing services are provided by an NGO which are frequently interrupted because of one reason or another.

Method: We conducted in-depth interviews of inmates and service providers in March 2015 to assess the feasibility of establishing a free testing and linking to care program.

Results: Majority of the prisoners had very limited knowledge about the HIV infection, and were also not fully aware about the care and preventive services available in or outside of prison even though ARVs are provided free of cost by the government. All providers suggested that VCT services should be provided without interruptions. There was consensus among service providers that instead of an outside party such as an NGO, prison staff may be trained and assigned to provide testing which will increase ownership on part of prison administration, and a peer outreach and animated SMS may be used for establishing linkages with care services.

Conclusion: The treatment and care services may include the following: mental illness treatment and referral, substance abuse assessment and treatment, appointments for HIV and other medical conditions, and referral for assistance to community programs that address basic survival needs. These findings can help in designing a program through which HIV-positive ex-offenders can be provided medical care and link them to these services following prison release.

286 Brazilian Strategy for Expansion of the Diagnosis of HIV-1 Infection

Ana Pires (presenting)¹

¹ Ministerio da Saúde, Brasília, Distrito Federal, BRAZIL

Background: In 2013, the Ministry of Health published the new decree on HIV-1 diagnosis in Brazil. Five algorithms were proposed aiming to create alternatives to increase access to diagnosis as well as enable testing implementation in different settings. These algorithms were based on a laboratory staging concept developed by Fiebig et al who observed that HIV-1 assay reactivity progressed sequentially and highly consistently in seroconverting individuals.

Methodology: Serological diagnosis is conducted with at least two tests, one for screening and a second, more specific, to confirm the result. The first two algorithms combine the use of rapid tests - finger prick or oral fluid (OF) - hence expanding access to diagnosis and allowing early treatment initiation. The third and fourth algorithms allow earlier HIV diagnosis, as they combine third- and fourth-generation immunoassays as screening and viral load quantification for confirmatory results. Despite being less cost-effective, when compared with the others algorithms proposed, the fifth algorithm is routinely most used and combines a third-generation immunoassay screening followed by the Western blot as a confirmatory test.

Results: The decree is groundbreaking in the use of Oral Fluid tests in Brazil since this technology increases testing accessibility while reducing the biological risk. The incorporation of this technology of rapid diagnostic meets the strategy recently adopted in Brazil of treatment as prevention (TasP) which requires coverage improvements aiming at early diagnosis. As the OF implementation doesn't require laboratory infrastructure, its use enabled the screening test piloting projects with key populations supported by Civil Society Organizations.

Conclusions: With the publication of this decree, the Department of STDs, AIDS, and Viral Hepatitis expects that professionals and services make an adequate choice of the algorithm according to their local reality, so as to enable access to all the individuals who want to know their serological status.



291 Challenges in Retention of Patients in Continuum of HIV Care in Delhi- Experience of a Decade and Way Ahead

Anil Gupta (presenting)¹

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Introduction: Retention of patients in HIV-care is critical for success of Anti Retroviral Treatment (ART) programme to reduce HIV-related morbidity & mortality and prevent emergence of drug resistance.

Description: In last decade in Delhi (April 2004 to March 2014), overall 24% HIV-positive patients were lost-to-follow-up (LTFU) at step-1 (testing to enrolment into HIV-care), 7.8% at step-2 (enrolment to ART eligibility), 23.7% at step-3 (eligibility to initiation of ART), and 16.6% at step-4 (initiation to lifelong ART) of retention cascade. About 2/3rd losses at step-4 were within 1st year and 80% within 2 years. The retention of the patients in pre-ART care was 3 times lower than those initiated ART. Only 27.4% patients were in active pre-ART care during 2013.

Results: The intensified LTFU tracking (ILT) undertaken during November 2013 through March 2014 was not successful in tracking 97% pre-ART LTFU clients due to incomplete addresses/or migration since address proof of patients on enrolment into HIV-care was not mandatory prior to 2009. Amongst patients tracked, 1.5% were alive, 0.24% had disengaged from care while 1.2% had died. After ILT overall "On ART" and "Pre-ART" LTFU rate in the last decade was 15.5% and 45.2%, respectively. The retention cascade of last year from April 2013 to March 2014 showed improvement through strategies adopted in Third Phase of National AIDS Control Programme (NACP-III; 2007-2013), and "On ART" and "Pre-ART" LTFU rates declined to 9.4% and 7.4%, respectively. However, the desired at least 90% retention at various steps of the cascade could not be achieved.

Lessons Learned: National policy of delivering ART services through limited number of standalone ART centers in India, despite its significant success, has limitation of leaky treatment cascade.

Conclusions: The study has implications for policy makers to decentralize the ART programme by its appropriate integration with general health services and task shifting to improve continuum of care.

292 Effectiveness of Antiretroviral Therapy in Children Living With HIV/AIDS in a Tertiary Health Institution in Nigeria

Comfort Sariem (presenting)¹

¹ Department of Clinical Pharmacy and Pharmacy Practice, University of Jos, NIGERIA

Background: HIV in children is mainly due to vertical transmission which occurs during pregnancy, labour, delivery, or breastfeeding. About 3 million children are living with HIV/AIDS (WHO, 2013). Highly Active Anti-Retroviral Therapy (HAART) is treatment globally accepted for HIV/AIDS management. The aim of this study was to determine the effectiveness of antiretroviral drugs in Plateau State specialist Hospital (PSSH), Jos, Nigeria by measuring treatment outcomes in children (0 – 15years), finding out if any association existed between demographic data and treatment outcomes and determining the prescription pattern of ARV drugs in children living with HIV/AIDS enrolled for at least one year at PSSH.

Methodology: A cross-sectional retrospective hospital based study design was utilized for the study. Having obtained ethical clearance and permission from the health research and ethics committee of the hospital, data collected was entered into statistical packages for the social science (SPSS) software version 20.0 for analysis. Descriptive statistics, percentages, mean and standard error of mean (SEM) of demographic data and treatment outcomes were generated from the study.

Results: A total of 200 children were involved in the study. The HAART most frequently prescribed was lamivudine and zidovudine with either nevirapine or efavirenz. There were more males (60%) than female children. About 54% were less than five years old. There was an increase in enrollment from 2006 to 2013. Majority (90%) were given co-trimoxazole. A significant difference was observed in weight as age progressed. There was no significant difference ($p > 0.05$) between demographic data and CD4 count across all ages of the children. There was however a significant increase ($p < 0.05$) in weight and CD4 count as treatment progressed from baseline among the under- five year olds, compared to the older children (6-15) years.

Conclusion: Antiretroviral drugs can improve children's health and prolong their lives if treatment is initiated before the age of 2 years.



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To Whom It May Concern:

This letter is a confirmation that _____ attended the 10th International Conference on HIV Treatment and Prevention Adherence, held June 28-30, 2015, at the Eden Roc Miami Beach in Miami, FL, USA. This 2.5-day conference was jointly sponsored by the International Association of Providers of AIDS Care (IAPAC) and the Postgraduate Institute for Medicine (PIM).

Sincerely,

José M. Zuniga, PhD, MPH

President/CEO

International Association of Providers of AIDS Care





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