68708 Adherence to Antiretroviral Therapy Among HIV-Infected Subjects in a Low-Income Setting in the Niger Delta of Nigeria

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Background: Since the early days of antiretroviral therapy, adherence has emerged a milestone to success. The objective of this study was to evaluate the factors militating against adherence to antiretroviral therapy among HIV-infected individuals in the resource limited setting of the Niger Delta of Nigeria.

Methods: A structured interviewer-administered questionnaire from consecutively recruited 187 HIV-infected patients on combination antiretroviral therapy of two nucleoside analogues; stavudine and lamivudine and one nonnucleoside (nevirapine) was used. Association between the independent variables and adherence were analyzed using chi square analysis.

Results: This study observed an adherence level of 49.2% and identified the following as factors associated with non-adherence: cost of antiretroviral, educational status, medication adverse effect, occupational factors, and high pill burden of prescribed regimen (p <0.05). There is an urgent need for universal access and sustainability of antiretroviral therapy particularly in resource limited settings.

Conclusions: There is need for supervised medication delivery. Efforts should be made towards simplifying the therapeutic regimen to reduce the pill burden and substitution with treatment combination and strategies that minimize negative adverse effects, coupled with the re-intensification of patient's education and counselling.

69033 Adherence to Combined ARV Prophylaxis Among HIV-Positive Pregnant and Lactating Women in Addis Ababa Health Centers, Ethiopia

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Background: Being one of the countries severly hit by the pandemic, Ethiopia had 75,420 HIV-positive pregnant women with 14,148 annual new pediatric HIV infections in 2007. Multi-drug ARV prophylaxis for women was introduced in the country in 2007 and as such little is known about adherence to this prophylaxis among HIV-positive pregnant and lactating women.

Methods: A cross-sectional study using structutred questionnaire was conducted from May to August, 2009 among 152 pregnant, delivering and postpartum women in Addis Ababa health centers. Simple random sampling was used to identify study participants. Secondary data on PMTCT was also collected.

Results: Self-reported 7-day dose adherence to ARV prophylaxis was found to be 94.1%, indicating 5.9% non-adherent women (3.4% pregnant and 1.97% postpartum women). Two children also did not complete the prophylaxis. The most frequent reasons for non-adherence were simply forgetting (20.8%), feeling sick (16.7%), and being away from home (12.5%). Fiftey-seven (37.5%) women in this study did not know the HIV status of their parnters. On the other hand, secondary data from the health centers indicated that 29.4% of women received the prophylaxis during the past 11 months.

Conclusions: This study indicated that adherence is reasonably good but it is still below the recommended level. Significant numbers of women also did not know the HIV status of their partner. Health professionals working in the health centers shall support clients to develop individual plans to address the reasons for non-adherence. Couple counseling and testing should be promoted so that women will know their partners' HIV status.

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69278 Factors Affecting ART Adherence of Youth Living with HIV/AIDS in Nigeria

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Introduction: Globally about 6,000 youths aged 15-24 years get infected with HIV/AIDS every day. In sub-Saharan Africa, 70% of young people are living with HIV/AIDS. HIV/AIDS is more than a health issue, it affects many facets of human life and does not represent age, colour, race and gender. Youth are the worst hit by this epidemic and are vulnerable to HIV/AIDS. Despite the accessibility of antiretroviral therapy in the federal capital territory, Abuja, Nigeria, many youth living with HIV/AIDS do not adhere to antiretroviral treatment absolutely.

Description: In the federal capital territory, Abuja, Nigeria, 30 youth living with HIV/AIDS on ART for at least six months were recruited from different support groups. Their adherence to ART was assessed using in-depth interviews and focus group discussions.

Lessons Learned: The respondents revealed that the reasons for their non-adherence to antiretroviral therapy include, pill burden, side effects, stigma, forgetfulness, TB medication, financial constraints and lack of social support.

Recommendations: Many youth living with HIV/AIDS on antiretroviral treatment are concerned about treatment, therefore they need support with side effects, opportunistic infections and making decisions concerning ART treatment. Youth centers and outreach programs should be prioritized by governments, community members and non-governmental organizations.

69310 Training Patient Advocates to Help Negotiate Structural Barriers to ART Adherence

Ashraf Kagee (presenting)

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Introduction: Patient advocates (PAs) are lay persons with minimal training who are employed by non-governmental organisations to help patients overcome some of the structural barriers to adherence to antiretroviral therapy (ART). In 2010 a group of South African PAs received a training programme in the provision of counselling and support to equip them with skills to help patients better adhere to their treatment regimens.

Description: PAs enrolled in this pilot programme were 12 women, none of whom had completed high school and some of whom were themselves ART users. They received a small stipend for their advocacy work, which included visiting patients at home, accompanying them to clinic appointments, and monitoring their medication adherence. In the context of some patients defaulting from treatment, the support of PAs and other lay counsellors to support patients has become an increasingly relied upon option. Yet, most the training that PAs typically receive is minimal. The presentation focuses describes a training programme for PAs. The training programme involved didactic workshops and role plays focused on basic counselling skills as well as problem-solving, exploring logical consequences, setting goals, and exploring alternatives. These activities were focused specifically on adherence to care, i.e. regular clinic attendance, and adherence to medication regimen, i.e. pill-taking. PAs received a total of 9 two-hour training workshops held over the course of three months in 2010 presented by a qualified psychologist with considerable experience in health psychology research and practice.

Lessons Learned: Not all PAs benefited from training despite revisiting the counselling skills several times. Those who were able to retain some of the skills presented were more verbal and willing to practice their skills outside of the training programme than those who were not. It is likely that ongoing training and supervision of PA's and lay counsellors by qualified professional counsellors and psychologists will be the best way to ensure competent support services are delivered to patients.

Recommendations and future plans: The project will continue with the training and ongoing assessment of lay counsellors. Patients' level of adherence will be monitored as they continue to receive psychosocial support from PAs to help them negotiate the structural barriers to adherence.

69317 Thae Negative Impact of Anxiety on HIV Care

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Background: Individuals with HIV experience fluctuating levels of distress throughout the course of HIV infection.

Methods: This cross-sectional study was conducted to examine the prevalence of and associations between anxiety symptoms that were measured using the General Anxiety Disorder 7 (GAD-7) and sociodemographic and clinical markers among individuals followed at an urban HIV clinic. Demographic characteristics, anxiety symptoms, and behavioral risk factors were collected through individual interviews during regular scheduled clinic visits.

Results: A total of 635 individuals participated in the study, 69% male and 68% African American. Twenty-two percent of the sample reported symptoms of moderate anxiety and 11% reported severe anxiety symptoms. Patients with severe anxiety had significantly greater alcohol intake in a week than those with moderate or mild anxiety (mean difference 1.6 vs. 7.7, p <.01) and among patients who smoke, anxiety symptoms were higher than in non-smokers (p <.001). There was no significant difference in risky behaviors among the three categories of anxiety (p = .305). Individuals with severe anxiety had higher viral loads (26.9 vs 18.6), lower self-reported medication adherence (14.3 vs. 8.1), and lower CD4 cell counts (14.7 vs. 8.6; p <0.05 for all).

Conclusions: Given the association between anxiety and poor rates of HIV viral suppression, screening for anxiety is an important aspect of routine care. Specific interventions for anxiety can then be tested to improve outcomes in the HIV outpatient setting.

69348 Behavioral Activation Environmental Reward and Reasons for HIV Medication Nonadherence among HIV-Positive Substance Users

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Background: Highly active antiretroviral therapy (HAART) demands near perfect adherence to be effective. Depressed substance users are at particularly high risk for poor HAART adherence. Cognitive-behavioral therapy (CBT) has been used to improve depression and adherence in this group. While effects of CBT on depression are well-understood, effects of CBT on HAART adherence are not as clear, particularly for the behavioral components. The current study examined the relationship between behavioral targets of CBT - measures of behavioral activation - and reasons for HAART nonadherence.

Methods: Participants (n = 36) were recruited at an urban residential substance abuse treatment facility (86.8% Black, 51.4% male, mean age = 43.11) during their first week of treatment. Participants completed self-report measures assessing reasons for HAART nonadherence using the AIDS Clinical Trials Group (ACTG) questionnaire and two measures of behavioral activation: the Reward Probability Index (RPI), measuring environmental reward, and the Behavioral Activation for Depression Scale (BADS), measuring levels of activation.

Results: There were significant correlations between the RPI and reasons for nonadherence. The environmental suppressors subscale of the RPI, measuring availability of reward and perception of aversive and unpleasant experiences, was significantly related to the following reasons for nonadherence: being away from home (r = -.51, p <.01), busy with other things (r = -.53; p <.01), simply forgetting (r = -.51, p <.01), having too many pills to take (r = -.47, p <.01), wanting to avoid side effects (r = -.49, p <.01), feeling depressed or overwhelmed (r = -.53, p <.01), having problems taking pills at specified times (r = -.48, p <.01), and feeling good (r = -.50, p <.01). The BADS was significantly related to missing doses due to a change in routine (r = -.35, p <.05) and sleeping through dose time (r = -.44, p <.05).

Conclusions: This is the first study to assess the relationship between behavioral activation and reasons for HAART nonadherence. Increasing levels of environmental reward may be a key target for CBT to improve adherence in this high-risk group.

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69414 Psychosocial Characteristics Fail to Mediate the Relationship of Lifetime Traumatic Experiences with HIV-Related Health Behaviors and Health Outcomes

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Background: Traumatic life experiences such as childhood sexual and physical abuse have profound and far-reaching implications for health and health-related behaviors. A growing literature documents the high prevalence of past trauma in people living with HIV/AIDS (PLWHA) and the association of past trauma with secondary transmission risk behaviors, HIV medication adherence, clinical outcomes, and even all-cause mortality. Yet the causal pathways explaining these relationships remain poorly understood.

Methods: The present study uses data on 611 outpatient PLWHA from the Coping with HIV/AIDS in the Southeast study to test the extent to which trauma's influence on later health and behaviors operates through the following mediators: adult mental health, substance abuse, recent stressful life events, coping styles, self efficacy, social support, and trust in the medical system.

Results: In models adjusting only for sociodemographic confounders (estimating total effects), greater past trauma exposure was associated with 12 behavioral and health outcomes including increased odds or hazard of recent unprotected sex (OR = 1.12 per each additional type of trauma, 95% CI = 1.01-1.25), poor medication adherence (OR = 1.13, 1.03-1.25), emergency room visits (OR = 1.14, 1.05-1.23), hospitalizations (HR = 1.14, 1.05-1.23), and HIV disease progression (HR = 1.11, 0.98-1.25). In multivariable models controlling for all hypothesized mediators, point estimates for health care utilization outcomes were reduced by about 50% whereas point estimates for behavioral and incident health outcomes remained largely unchanged, suggesting no mediation. In nested models, the inclusion of recent stressful life events led to the largest shift in point estimates while the inclusion of coping styles, self efficacy, social support, trust, and current mental health changed point estimates little. For nearly all outcomes, point estimates remained elevated even after adjusting for all hypothesized mediators.

Conclusions: These data suggest that past trauma influences adult health and behaviors through pathways other than the mediators considered in this model, such as psychoneuroimmunologic processes.

69415 A Model of Observance Assistance: The House of Observance of the Center Oasis of AAS

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Background: The stake under treatment of a large number of persons under ARV required highlighting the therapeutic observance. This should be congealed on a new vision, the activities of helps has the observance being punctual, our beneficiary made absences for the treatment ARV because they had enough information about the ARV and about the resistances. They did not respect the appointments of the activities of help to the observance while every meeting of subsidy ARV has a very precise theme. We did not manage to touch them at all the meetings, and so the idea of the creation of a House of Observance was born.

Project Description: The House of observance is a therapeutic educational community center, of promotion of the health and the preparation on the way back for the active social life of the persons under treatment ARV. Contrary to the brief and punctual activities of help to the observance, the specificity of the house of observation is to offer a temporary withdrawal of the environment of life which allows to intervene more in depth and in a more long-lasting way on the quality of life of the PLWHA. The House of Observance privileges a global approach of the observance which replaces the taking of treatments against the AIDS in the psychological context, social and economic of the life of the persons and their environment.

Results: This project allowed the persons under treatment ARV to integrate into their lifestyle, to contribute to the restoring of the equity in the access to the treatment ARV for the benefit of the most vulnerable persons. Our approaches were based on the psychosocial, medical, economic, political determiners, etc. This house of observance is opened to every person under treatment ARV, starting a treatment or in change of treatment. Furthermore the person has to have difficulties of taking the ARV, be in a good health, not present a contagious infection. It is necessary to note that 608 persons having stayed and after a period one year, 89% saw their CD4 counts increased by more of 60 cells/mm^3, 8% had CD4 counts <50 cells/mm^3, 3% saw their CD4 count lowered, in more 80% took >5kg, 14% <5kg, 4 % did not change weight and 2% fell with weight.

Conclusions: This house had impacts because more than 85% of the persons who led activities and who had given up because of the disease resumed their activities 07 months after their passage in the house of observance. We think of widening the house of observance to other associations.

69441 HIV Treatment Adherence, Tanzania

Frederick P Doya (presenting)

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Introduction: Adherence to antiretroviral (ART) medications is critical in optimizing the clinical outcome of patients and in preventing the emergence of resistance. Daily visits and observations of the patients taking the medicines not only insure compliance but also affords the opportunity to provide support to patients, monitor them for symptoms of adverse reactions to ART and/or HIV-related complications, answer questions about the medicines or their side effects, and stress secondary prevention messages.

Background: Loss to follow-up of HIV-positive patients is extremely low in our clinics because of the comprehensive support provided to all patients regardless of whether they are yet receiving ART. Even if HIV-positive patients are not receiving directly observed ART or prophylactic therapy, the community health worker will perform routine visits to access the ongoing needs of the household and look out for health problems in the family. Patients are seen on a monthly basis at the ART clinic.

Implementation Issues: Comprehensive support should be given whenever possible to help adherence. Nonadherence patients should be counseled on the risk of treatment failure and generation of drug resistance. Importantly, a home visit and careful socioeconomic assessment can often reveal the broad range of factors contributing to the patient's nonadherence, such as increased economic or nutritional hard-ship, illness of a family member, medication intolerance, and/or domestic violence.

Recommendations: HIV infection presents a complicated array of medical and psychosocial management issues. While sophisticated diagnostic tests are not available in most resource-poor settings, we feel confident that many lives can be saved if treatment of HIV and its related opportunistic infections proceeds even in the absence of laboratory and radiological facilities. The more HIV care can be delivered at the local level, the more patients will be treated with ART and other life-saving interventions.

69593 Adherence to Antiretroviral Medicines among Adult HIV-Positive Patients at the Korle Bu Teaching Hospital in Accra, Ghana

Phyllis Antwi[1] (presenting), Adwoa Adjei[2]

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Background: It is very important to assess adherence to antiretroviral therapy (ART) to understand why treatment fail. However, measurement of adherence especially in the clinic setting is very difficult as there is no single method that best measures it. The main objective of this study was to measure adherence to ART among HIV patients (PLWH) at the Korle Bu Teaching Hospital (KBTH) using, pill counts and self-report and also to identify factors that contributes to optimal adherence.

Methods: The design was a cross sectional descriptive study which used systematic sampling to collect quantitative and qualitative data from adult ARV users who have been on ARTs for at least three months and attended clinic at KBTH between May and July 2009. A t-test was performed to compare mean adherence and Multivariate logistic regression was used to determine factors that were associated with adherence. Analysis included 229 patients.

Results: Of the three methods used, optimal adherence rate ($\geq$95%) was highest for 7-day recall (100%), followed by three-month pill count method (98%), and three-month visual line self report recorded the least adherence rate (77%). Overall rate of adherence was found to be 92%. Quality of care was found to be a factor that contributes to optimal adherence, a finding that was also buttressed during the qualitative study.

Conclusions: Pill count recorded high optimal adherence in contrast to visual line self report which matched results from most African countries. Although there was an overall high optimal adherence compared to other developing countries, overall adherence was still below minimum expected adherence of 95%.

69786 Predictors of Adherence among Patients on Highly Active Antiretroviral Therapy in Nigeria

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Background: Adherence is very important in the clinical management of HIV infected people. There is increasing treatment failure to first line therapy in Nigeria and a need to improve adherence to prevent drug failure, disease progression and improve treatment outcome. This study evaluated adherence using drug refill schedule pattern.

Methods: Data of 2261 patients who were on antiretroviral drugs for at least a year was analyzed. Compliance with pharmacy refill appointments was used as a proxy measure for adherence and was calculated as the difference in days between the refill appointment and the actual refill visit. The outcome measure was poor adherence which was defined as missing any scheduled appointment within the first year of therapy by more than 7 days. Multivariate logistic regression was used to evaluate the predictors of adherence.

Results: Mean age 35.4±8.3years; male 42%; female 58%; 13.8% treated for TB; 18.6% and 81.4% started on efavirenz and nevirapine-based regimens respectively. Only 20.3% came within 7 days of all their appointments in the first year. Patients that lived outside the facility local government area were more likely to miss at least one scheduled appointment in the first year OR = 1.4 95% CI: 1.1-1.8; patients with both of their first 2 refills scheduled for less than 30 days were less likely to miss their appointments OR = 0.6 95% CI: 0.5-0.7; those that had any refill from the fourth refill onwards scheduled for less than 30 days were more likely to miss their appointment OR = 4.1 95% CI:1.9-8.8.

Conclusions: The frequency of drug refill is a major predictor of treatment adherence. Better adherence is achieved if the initial two refills in treatment initiation are given for two weeks and subsequent appointments for at least one month. Additionally, there is a need to scale-up treatment sites to reduce traveling distance.

69882 Community Home-Based Care: Indicator for HIV Prevention and Treatment Adherence

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Introduction: The home-based care strategy on prevention, treatment, care and support is reducing household vulnerability and improving treatment adherence for PLWHA. The positive living project and Community Home-Based Care Project (CHBC) in Nigeria are the main focus of this paper. These 2 projects which involved numbers of NGOs, CBOs and community members has yielded successes and challenges in tackling HIV/AIDS prevention and treatment adherence with a focus on offering services to PLWHAs and families in their home.

Description: The CHBC project by CiSHAN and CEDPA in Nigeria aimed at reducing morbidity and mortality rate of PLWHA was successfully implemented through care and support programmes focusing on clinical management, treatment, adherence counseling, nursing care and psychosocial support. Community members were selected and trained along side health workers in the community to provide quality home-based care services for PLWHA and family members. The success have reduced the vulnerability of PLWHA and improved their treatment adherence. During the LOP, supports were formed which were used for sustainability of the project; even after the end of the CEDPA project, those support groups still remain and functional. Some of the challenges facing the HBC providers is non availability of some of their client at a point in time due to relocation and some of them cannot afford hospital admission because of poverty therefore increased the workload of the care givers.

Lessons Learned: The isolation that stigma had on PLWHAs has been reduced. PLWHAs have been encouraged to take charge of their lives through support group meetings. Treatment adherence has been improved with the help of home service.

Recommendations: There should be networking of all HIV care providers so that PLWHA can access services anywhere in the country. CHBC should be intensify and be included in every prevention and treatment interventions to achieve better results.

69883 Text Me! Development of a Technology-Enhanced Antiretroviral Medication Adherence Intervention for HIV-Infected Adolescents

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Background: An estimated 5,259 13-24 year-olds were diagnosed with HIV in 2006, representing 25% of those living with HIV in the US. Although HIV can be managed effectively with antiretroviral medication, greater than 90% adherence is required for optimal management. Across studies, medication adherence among HIV-infected youth remains suboptimal.

Methods: In 2010, 30 HIV-infected adolescents participated in a semi-structured qualitative interview. Participants were 13-24 years-old, and diverse with respect to mode of HIV infection, gender, and race/ethnicity. Participants were asked questions relevant to their treatment adherence, including their experiences taking antiretroviral medications, perceived barriers to treatment adherence, and suggestions for developing interventions aimed at improving adherence. Interview transcripts were subject to thematic analysis.

Results: Forty percent of participants were behaviorally infected; 60% were infected perinatally. Fifty percent were male, 41% were female and 9% identified as transgender. Thirty-six percent were Black, 18% were White, and 59% identified as Latino. Participants expressed a need for individualized, technology-enhanced interventions that address medication adherence within a context of co-occurring psychosocial problems. Technological themes included: 1) the usefulness of text messages as daily reminders for taking medication; 2) the potential value of a peer-support discussion board to ask questions and discuss issues related to adherence; 3) the importance of an intervention that allows for flexibility and personalization (e.g., with individualized text messages); and 4) concerns about confidentiality with regard to reminder messages sent via social networking sites (e.g., Facebook). Generally, participants felt that programmatic effectiveness would be augmented by the addition of a peer-support component. The importance of peer-support is particularly relevant given that many participants voiced an unwillingness to be instructed by others (especially authority figures), specifically regarding their medication adherence.

Conclusions: Findings highlight the potential success of technology integrated into behavioral interventions that address adolescent-specific barriers to HIV treatment and medication adherence.

69886 Using Capacity Planning Models to Estimate Organizational Costs of HIV Care within the US Department of Veterans Affairs

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Objectives: The objectives were to obtain the sufficient capacity to perform a rigorous evaluation of organizational costs associated with increases in HIV screening rates, based on expertly-chosen criterion.

Background: As policy-driven researchers, it is not enough that we substantiate that a given HIV quality improvement research project is effective; it should also be elucidated clearly to non-research facility managers for whom costs associated with proposed changes are paramount. Business case modeling provides us with that link.

Design: Longitudinal design linked to estimates of HIV-related facility expenditures in one large, university-affiliated VA facility in Southern California. Models were constructed using MS Excel. Inputs were derived from providers familiar with patient care factors. We estimated first-year costs in specific categories under two scenarios: 1) increasing screening rates from 0-5%, 2) increasing from 0-10%. Endpoints included antiretroviral and drug costs, patient flow estimates, testing/treating HIV patients, changes in staff, pharmacy and lab costs.

Results: Our analysis showed that organizational costs of $425,027 (including costs related to lab, personnel, and pharmacy) in the first quarter could be sufficient at a HIV testing rate of 3%, and more than doubling HIV testing to 10% has an additional cost impact of $82,646 on quarterly organizational costs. Our model provided an anticipated cost estimate for facilities considering increasing HIV testing.

Conclusions: The effectiveness of cost modeling has important implications for organizational impacts associated with changes in care delivery. Stakeholders and facility/organizational managers should consider the use of capacity planning models of this sort to extrapolate future costs based on current actions.

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69888 Implementing a Rapid HIV Testing/Linkage to Care Project Among Homeless Individuals in Los Angeles County: A Collaborative Effort between Federal, County, and City Governments

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Background: The homeless population, though vulnerable to HIV infection, traditionally lacks access to HIV testing diagnostics and linkage to care (LTC).

Project Description: This project, an ongoing collaborative effort involving Gilead Sciences, the US Department of Veterans Affairs (VA); County of Los Angeles, Department of Public Health, Office of AIDS Programs and Policy; and City of Los Angeles AIDS Coordinator's Office, is evaluating barriers and facilitators to 1) providing HIV rapid testing to homeless shelter clients; 2) linking HIV-positive individuals to care through a) the VA, or b) Los Angeles County Department of Health Services, depending on veteran status. HIV oral rapid tests are offered by HIV counselors. In cases with (preliminary) positive test findings, a confirmatory test and clinic appointment is arranged, and taxi voucher is provided. Summary sheets are kept including tests conducted and client's veteran status.

Results: Data analysis is ongoing to review performance. A year of data indicates significant progress in testing ?733 clients tested (31 veterans), 7 confirmed positive (1 client did not receive confirmatory results). LTC confirmed for 5 clients; One client did not return for confirmatory results and was not LTC; other client refused LTC. Challenges included development of confirmatory test procedures, gap between confirmation and LTC, LTC follow-up.

Conclusions: This collaboration between governmental agencies has been successful, and can be used as a model for future collaborative efforts of this type. Efforts are ongoing to better track clients by the use of a new linkage to care model. It is hoped that this new model of linking immediately upon preliminary reading will expedite LTC.

69889 Adherence to HIV Treatment and Care Among Previously Homeless Jail Detainees

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Background: HIV-infected persons who enter the criminal justice system (CJS) often have weak engagement with community health-care systems and social instability, including homelessness.

Methods: Baseline surveys from 743 HIV-infected jail detainees prescribed or eligible for HAART from a multisite study were assessed for variables associated with linkage to care: 1) reporting an HIV provider, 2) taking HAART, and 3) being adherent ($\geq$95% of prescribed doses) to HAART 7 days before incarceration. Results were stratified by homelessness [homeless (42%) and non-homeless (58%)], defined for the 30 days pre-incarceration.

Results: Pre-incarceration, homeless subjects were more likely to use illegal drugs (83% vs. 75%, p = 0.01) and ever be prescribed psychiatric medications (54% vs. 40%, p <0.001), but less likely to be insured (67% vs. 82%, p <0.001). Compared to housed subjects, homeless subjects were less likely to report having an HIV provider (65% vs. 82%, p <0.001), take HAART during the 7-day pre-incarceration period (45% vs. 62%, p <0.001) and have >95% adherent (32% vs. 38%, p <0.001). Among the homeless, illegal drug use and prescription of psychiatric medications were not associated with linkage to care variables, while having health insurance was the most significant factor correlated with having an HIV provider (AOR 5.0, 95% CI 2.6-9.6) and with taking HAART (AOR 12.8, 95% CI 3.8, 42.9), but not with >95% adherence.

Conclusions: Homelessness is associated with a lower engagement with HIV care at the time of incarceration. Despite existing safety nets provided by Ryan White funding, having health insurance is significantly associated with having an HIV provider and receiving HAART. Once prescribed HAART, however, health insurance does not significantly influence adherence. Innovative interventions are urgently needed to engage individuals who interface with the CJS to facilitate health care access and retention, especially those that facilitate and retain HIV-infected persons in stabilized housing.

69893
Barriers and Facilitators Towards Antiretroviral Treatment Adherence in Nepal: A Qualitative Study

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Background: Antiretroviral (ARV) treatment has significantly improved the quality of life of people living with Human Immunodeficiency Virus (HIV). Patient adherence is crucial to get the best results out of ARV. Numerous studies have observed that poor adherence is linked to various barriers and adherence to several facilitators. Aim This study explores the potential barriers as well as facilitators with ARV treatment adherence among patients using and service providers prescribing ARV.

Methods: In-depth semi-structured interviews were conducted with 17 purposively selected ARV prescribed patients, 14 service providers and three key policy makers. Interviews were conducted in Nepali and transcribed texts were translated into English and analyzed using a thematic analysis.

Results: The major barriers that affecting adherence included individual beliefs and behaviours, substances abuse, forgetting or being too busy, lack of family support, religious and rituals obstacles, stigma and discrimination (including fear of being recognized), cost (travel, registration and diagnostic), distance to health service, short-period prescription, limited counseling services, transport problems and adverse side-effects. This study also suggests a number of factors facilitating adherence: positive beliefs about ARVs, ambivalence towards ARVs, making ARV a part of everyday life, being responsible for a family, limited family support and trusting the advice of health care providers.

Conclusions: Adherence of ARV treatment can be difficult for there are many interacting factors affecting a patient's behaviour. Our study suggests that financial incentives, better accessibility of treatment services, social and family supports and promoting education and counseling to deal with social stigma and discrimination may be useful ways to overcome ARV barriers. Health providers should try to ensure that the ARV doses fit into patients' daily routines by explaining side effects and how to handle these should they occur. Policy makers should be aware of and address the key barriers to adherence which limits the use of currently available services.

69899
Safety Improvements of Targeted Medication Reconciliation and Increased Communication between Providers in Hospitalized HIV-Positive Patients

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Introduction: HIV-positive patients have complex medication regimens that are difficult to manage and maintain. A review of our system's HIV patient population and their access to care was conducted. Reports by practitioners of incorrect initiation of home regimens during hospital admissions were reported. Our group met to determine strategies to alleviate these issues by undergoing a review of our HIV system. Current home regimens were not being accurately continued during hospitalization as well as at discharge. The complexities of HIV regimens open this patient population up to multiple medication use issues, such as drug-drug interactions, adverse drug reaction, and patient confusion which all contribute to adherence issues. A deficit in overall HIV knowledge was also identified in the pharmacy staff, thus increasing the potential for medication related issues. Lastly, access to medication was addressed as needed based on case manager assessment.

Description: It was determined the best strategy to alleviate the incorrect medication regimens was to perform a focused medication reconciliation. During this review any adverse drug reactions, potential adverse drug reactions, drug-drug interactions, and medication therapy issues would be identified. Identification of HIV patients admitted to the institution were compiled by the Ryan White case managers and distributed daily to the entire pharmacist staff and the HIV clinic staff. This list would trigger the focused medication reconciliation process. Any findings or changes that were made were communicated back to the case managers, the inpatient attending physician and the outpatient providers. Upon distribution of the list, the case manager would perform an evaluation of medication access and adherence assessment. Any identified issues were addressed during hospitalization.

Lessons Learned: Improved communication and focus on the medication profile have lead to increase patient awareness and adherence.

Recommendation: This project would be easily replicated with HIV or other complicated disease states at other institutions.

POSTER ABSTRACTS

69901 Linkage and Retention of HIV-Positive Youth in Care

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Introduction: Responding to a rise in HIV rates in the United States, particularly around young men who have sex with men (MSM) the Adolescent Initiative has creatively designed a linkage to care program that is not only clinic based, but moves to the development of linkages with other community service organizations providing HIV counseling and testing to improve care engagement.

Description: The Adolescent Initiative provides comprehensive, multidisciplinary services to HIV-infected and at risk adolescent within The Children's Hospital of Philadelphia. We have extensive experience and expertise in providing HIV specialty care to African-American adolescent females and young MSM aged 12-24. Begun in 1993, the Adolescent Initiative at The Children's Hospital of Philadelphia was one of the first clinical programs dedicated to the prevention, care and research of HIV in adolescents. Our program has been recognized nationally by the Health Resource Services Administration as a model for "Best Practices" for linking and retaining HIV-infected youth in care. Through this poster presentation we will describe our current multidisciplinary linkage to care process. Outcomes from these linkages will be discussed.

Lessons Learned: As a result of these linkages our referrals of newly diagnosed HIV-positive young MSM have significantly increased.

Recommendations: Development of a comprehensive linkage to care process that includes community testing sites, local health departments and sites providing specialty clinical HIV care to youth is imperative to linking and retaining these youth in care.

69909 Peer Interventions for Adherence to HIV Clinical Care: A Systematic Review

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Background: Attendance at primary HIV care appointments is a crucial component of successful HIV treatment, which requires adherence to both antiretroviral (ARV) medications and scheduled clinic visits. Despite reviews that illustrate the function of peers for medication adherence with HIV and other chronic conditions, few researchers have expressly described the role that peer interventionists play toward improving adherence to HIV care and its related outcomes.

Methods: We conducted a systematic review using standardized search terms for English language peer reviewed manuscripts, published between 1998 and 2010, pertaining to peer interventions that aim to improve adherence to HIV care. Keyword combination search terms using CINAHL, PsycINFO, PubMed, Web of Science, and WilsonWeb yielded 2,629 related abstracts that were appraised by 2 independent reviewers. A total of 14 HIV peer interventions that specifically address adherence to care were included in the systematic review.

Results: Findings support that peers, working independently or as part of an HIV clinical care team, promote care access and re-engagement, enhance reported quality of life, and increase patient-provider trust and communication. Though limited, studies also demonstrated that peer-based programs can significantly impact medical outcomes (viral load and CD4 count) by improving adherence to both ARVs and clinic appointments. Successful peer interventions featured frequent patient contact, life-skills development, appointment accompaniment, treatment counseling and education, and comprehensive assessment and assistance for patients' unmet needs, particularly during the first three months of care.

Conclusions: As peer-based interventions show promise for engaging and retaining HIV patients in care, future studies should evaluate the utility of integrated peer interventions for optimal HIV treatment and outcomes.

69912 Optimizing HIV Testing in Resource-Constrained settings: Lessons from Nigeria

Oluyemisi A Akinwande (presenting), Frank Oronsaye, Kemi Erinfolami, Seun Aladesanmi, Juliet Iseniyi, Modupe Isibor, Bassey Nsa Eyo, Mame Awa Toure, Bola Oyeledun

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Background: Sixty-five percent of people requiring ART in Nigeria are yet to be reached in spite of universal testing and rapid ART scale-up. With the current global constraints resources for in HIV testing and treatment, it is needful to devise ways of maximizing available limited resources to optimize HIV care. ICAP implements a semi-focused HIV testing in Nigeria to increase the yield of positive clients in HIV testing using the available limited resources.

Methods: The HIV semi-focused testing strategy was introduced in 31 secondary health facilities across 6 states in Nigeria April 2010. A risk assessment checklist was developed to identify and prioritize clients for HIV testing according to sexual and medical history. Adults with 2 major criteria and those with 1 major and 2 minor criterion were prioritized for HIV tests while universal testing was continued to all pregnant, pediatric and TB clients. HIV counseling was carried out by trained nurses and testing by certified laboratory scientists and technicians in line with the National HIV Testing Algorithm.

Results: Data was reviewed for a period of 5 months pre- (11/09-03/10) and post- (04/10- 09/10) intervention. Pre-intervention, 51,257 clients were counseled and tested of which 10,477 (20%) tested HIV positive. Post-intervention, 18,859 clients were tested and 5141 (27%) tested positive. Two sample t-test with unequal variances for total positive position showed a significant difference between the means of positive clients pre- (2095 ± 184) and post- (1028 ± 210) intervention (t = 8.5 p <0.00).

Conclusions: The targeted HIV testing strategy adopted identified more HIV-positive clients within a short time and using less human and material resources. Effective innovative strategies are needful for optimizing ART care in the face of declining HIV care resources in resource-constrained settings.

69914 Removing Barriers to HIV Care through Nursing Innovations in Nigeria

Oluyemisi A Akinwande[1] (presenting), Abiola Ajibola[2], Ismaila Lawal[1], Jonathan Abiodun[1], Juliet Iseniyi[1], Uduak Akpan[1], Bamidele Osibo[1], Uthman Idayat[1], Bassey Nsa Eyo[1], Bola Oyeledun[1]

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Background: Nigeria has a large number of PLWA and very low ratio of health staff to clients. Socio-cultural and gender factors also impede access to care in Nigeria. There is a need to devise innovative ways to increase access in a culturally acceptable manner and without compromise to quality. ICAP expanded care from secondary to primary health facilities and re-defined nursing roles in the context of HIV in Nigeria.

Methods: Male and Female Nurses in 111 PMTCT sites across 6 states were trained between 8/09 -12/09 on modified PMTCT modules which included HIV counseling and real time testing using rapid test kits. Females Nurses were thereafter posted to ANC and Male nurses posted to points of testing with low male testing.

Results: Uptake of HIV testing among males increased by 76% following the use of male nurses as counselors (from 908 clients between 2/09-10/09 to 1,598 between 11/09 and 7/10), with an increase in positivity rate from 32-35% leading to increase enrollment of males into care. HIV testing among pregnant women also increased from 1.3% as a result of the intervention (from 153,480 in 2007-2008 to 158,476 in 2009-2010)

Conclusions: Contextual modification of nursing training, use of nurses in non-traditional nursing roles and gender considerations has helped navigate barriers to care thereby increasing access. Negotiation with laboratory cadre of staff facilitated acceptance of testing among nurses. Innovative techniques to increase access and expansion of the capacity of nurses are needed for HIV care in resource-constrained settings.

POSTER ABSTRACTS

69922 Readiness Index (Short Version) Psychometrics and Relation to Adherence

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Background: This project evaluates the psychometric properties of the Readiness Index Short Version (RI-9), a brief questionnaire of motivation to change general health behaviors. There is great clinical and research interest in developing methods for predicting readiness to adhere to antiretroviral (ART) medications. Fleury's 30-item Readiness Index (RI) was validated in a prospective study against HIV viral loads and was subsequently recommended for use in ART adherence research. The shorter 9-item version (RI-9) may be more feasible to administer, but psychometric properties have not been well established.

Methods: 452 HIV-positive older adults completed telephone surveys (70% men; 57% AA; 36% W; 7% other; 6% H/L). Exploratory Principle Components Analysis (2 and 3 factor varimax rotation) of the IR-9 on a 50% random sample was conducted and confirmed with the remaining 50%. We assessed concurrent validity with 30-day ART adherence and non-HIV chronic disease medication adherence.

Results: The analysis indicated there were two IR-9 factors: a 3-item Re-evaluating Lifestyle scale and a 6-item Change Planning and Commitment scale. The alpha for the 3-item subscale was .60 and .83 for the 6-item subscale. Higher IR-9 Re-evaluating Lifestyle scores but not the Change Planning and Commitment scores were associated with greater concurrent nonadherence to medications for ART adherence ($r = .23$, $p < .0001$) and non-ART medication adherence ($r = .35$, $p < .0001$).

Conclusions: For the IR-9 we found a 2-factor, rather than the 3-factor structure found in prior research. We found only one factor, the Lifestyle subscale, was significantly related to medication adherence. Future research is needed to assess the factor structure in other populations and to assess the predictive validity of the 9-item Readiness Index subscales in relation to medication adherence and other health behaviors.

69927 Understanding Depression and its Impact on Adherence to HAART in People Living with HIV/AIDS in South Africa

Lena Andersen[1] (presenting), Ashraf Kagee[2], Steven Safren[3], Conall O'Cleirigh[3], Dan Stein[1], John Joska[1]

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Background: To tailor an intervention to the needs of a specific population, it is essential to understand the experiences of the people in question. In the case of people living with HIV/AIDS (PLWHA) in South Africa, little is known about individuals' subjective experiences of depression despite the elevated prevalence rates in this population. The purpose of this study was to document the experience and manifestation of depression in PLWHA, its impact on adherence to HAART, and the contributing psychosocial stressors. Information obtained from the qualitative interviews will be used to inform the cultural adaption of a cognitive-behavioral therapy intervention aimed at enhancing adherence and reducing depression known as CBT-AD.

Methods: Twenty semi-structured interviews were conducted with depressed, HIV-positive adults receiving HAART at two primary ARV clinics in the Langa and Khayelitsha townships in Cape Town. Participants were primarily Xhosa-speaking women between the ages of 35 and 55. Interview transcripts were thematically analyzed.

Results: Participants were unfamiliar with depression as a psychiatric illness. Their depression, although always involving sadness, was largely manifested physically. Symptoms consistently identified were lethargy and somatic complaints. Stressors consistently identified were HIV-related stigma, lack of income, and poor social support. "Fear of others discovering their HIV status" consistently emerged as the root of non-adherence, while other barriers included ARV side effects and poverty-related issues such as lack of food to take medication with. All participants requested help with their depression.

Conclusions: The interviews reveal that depression is often manifested physically. This has important implications for the assessment of depression in this population and for the psycho-educational component of an intervention. Consideration of the barriers to adherence identified in this study must be given when designing a much-needed intervention for depression in primary ARV care.

69929 Tracking HIV-Positive Patients Lost to Follow Up in a Secondary Level Facility: General Hospital Ijebu Ode Harvard Paper Apin Program Experience

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Background: The attempts to retain HIV patients in care are still fraught with lost to follow up (LFU) cases. Patient retention in care is critical to the evaluation of health care services and to determining the effectiveness of HIV/AIDS care and treatments. Treatment and care services commenced at GH I-Ode in July 2008 and by October 2009, an alarming 217 (21.3%) out of 1,015 enrolled patients were picked from the database as lost to follow up.

Description: A list of LFU patients was electronically generated from the visit and pharmacy databases using a LFU utility setting the date limits at 180 days for clinic visit or drug pick up. The list generated is assigned to a counselor who arranges to contact the patient by telephone or home visit. The different reasons for not attending clinics are then documented and collated for analysis.

Lessons Learned: Most of these patients, (97% of 217) about 97% were recruited in 2008 at the commencement of the program. Majority (98% of 217) 98% of these patients were on care and only 2% were on treatment receiving HAART. Only 24% (52) of these patients has their contact details, either telephone or home address, documented. Patients with contact details were contacted:7 patients' mobile phone numbers were either invalid or unavailable. Ten were reported dead by relatives, 2 have negative confirmatory (Western Blot) result and as such were discontinued from care, 4 received post-exposure prophylaxis, 8 were no longer interested in the treatment program, 1 has been transferred out of site without discontinuation form filled, 10 claimed to be receiving treatment in other centers without referral notes and 4 were inmates at Ijebu Ode prison. Of the 52 reached, 32 returned to the program which offered a recovery rate of 62% in response to the phone calls and home visits.

Recommendations: Inadequate documentation of contact details makes it difficult to get in touch with patients when lost to follow up; this should be strengthened. Efforts should be channeled to address the several reasons for lost follow up in patients which include: delay in availability of laboratory results especially CD4 count and HIV confirmatory test, travel and relocation, lack of disclosure, and myths.

69939 ACT HEALTHY: A Brief Behavioral Treatment for HIV-Positive Substance Users with Depression

Christopher Seitz-Brown (presenting), Katelyn Anderson, Sylvette LaTouche-Howard, Anna Lavelle, Briana Lindberg, Alyson Listhaus, Jessica Magidson, Khalid Naji-Allah, Stacey Daughters

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Introduction: The two most common comorbid conditions with HIV are substance use disorders and depression, and individuals with comorbid HIV, depression, and substance dependence face a more chronic and treatment-resistant course. To date, there are a limited number of interventions tailored to the specific needs of HIV-infected substance users, such as targeting depression as well as anti-retroviral medication adherence.

Description: ACT HEALTHY is a brief, behavioral intervention specifically designed to meet the needs of depressed low-income HIV positive substance users in an urban residential substance abuse treatment center. It combines a behavioral activation treatment for depressed substance users with a cognitive-behavioral treatment for HIV medication adherence. ACT HEALTHY's focus is on providing clients with an understanding of the cyclical relationship between the quality and quantity of their activity involvement, affecting depressive symptoms, HIV medication adherence, and substance use. Participants receive 8 residential sessions followed by 8 weekly outpatient sessions. The current study will describe ACT HEALTHY in detail and provide preliminary outcome data on HIV medication adherence, depression, and substance use.

Lessons Learned: Obstacles encountered in this treatment include retention of participants for outpatient sessions, coordination among multiple treatment providers, flexibility within the context of a manualized intervention, and difficulty with homework adherence. Potential solutions will be discussed.

Recommendations: ACT HEALTHY is a novel, behavioral activation-based approach that simultaneously targets depression and HIV medication adherence and may also demonstrate positive effects on relapse prevention among a triply diagnosed population. Given the brief, straightforward nature of the intervention, ACT HEALTHY has the potential to be integrated into substance abuse treatment facilities, and to show great public health significance.

POSTER ABSTRACTS

69946 Non-Adherence to Antiretroviral Therapy (ART) in HIV-Infected Patients in New York City (NYC): Findings from the Medical Monitoring Project (MMP)

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Background: Very high levels of adherence to antiretroviral therapy are required for effective suppression of HIV viral load, which predicts outcomes of therapy and development of resistance. The epidemiology and correlates of adherence are not well understood.

Methods: A cross-sectional, probability sample of HIV-infected adults aged ≥18 years who received outpatient HIV care in NYC from January 1 to April 30, 2007, were interviewed for the MMP. Those currently receiving ART were analyzed. Bivariate logistic regression was used to examine the association of ART adherence with demographic factors, ART treatment characteristics, and illicit drug use.

Results: Of the 231 (83% of 279 recruited) patients currently on ART, 75% were male; median age was 45 years; 43% were Black, 39% Hispanic, 14% White, and 4% Asian/Pacific Islander/other race/ethnicity. A single-dose, once-daily ART regimen was reported by 17%. ART dose non-adherence (any dose missed in the past 2 days), timing non-adherence (divergence from scheduled doses in the past 2 days), and food non-adherence (departure from dietary instructions in the past 2 days) were reported by 15%, 33%, and 30%, respectively; 44% reported non-adherence on any of the measures. Dose non-adherence was significantly associated with having any high school education or less vs. greater than a high school education (OR = 2.6, 95% CI = 1.17-5.67) and marijuana use in the past 12 months (yes vs. no) (OR = 2.3, 95% CI = 1.07-4.9). Gender, race, age, duration on treatment, and use of multiple-dose daily regimens were not associated with dose non-adherence.

Conclusions: At least 1 in 6 HIV-infected individuals in this NYC sample reported suboptimal ART dosing adherence. Those who did not have more than a high school education and those with recent marijuana use appear more likely to report suboptimal adherence. Assessment of educational level and drug use behavior should be included in patient evaluation at the initiation of treatment.

69962 Ventromedial Prefrontal Cortex Function and Health Literacy in Persons Treated for HIV Infection

Raymond L Ownby[1] **(presenting)**, Shauna Berry[1], Drenna Waldrop-Valverde[2]

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Background: Health literacy has increasingly been recognized as a critical factor in health status, utilization, and outcomes. It has previously been related to medication adherence in persons treated for HIV infection, but it is not clear what cognitive abilities link it to complex behaviors such as adherence. The Iowa Gambling Task (IGT) is a measure of risk taking and has been related to deficits in implicit learning from experience as exhibited by persons with damage to the ventromedial prefrontal cortex. The ability to appreciate the consequences of behaviors is plausibly related to health behaviors, but has not been investigated in relation to health literacy in persons treated for HIV infection. We have previously shown that health literacy is related to problem solving in HIV-infected individuals, but no study has investigated the relation of implicit learning to health literacy in this population. The purpose of this study was to evaluate the relation of health literacy to performance on the IGT.

Methods: As part of an ongoing study of medication adherence in HIV infection, 22 persons treated for HIV infection completed a battery of cognitive measures that included the Vocabulary, Information, Block Design, and Matrix Reasoning subtests of the Wechsler Adult Intelligence Scale-III, the Tower of London, and Test of Functional Health Literacy in Adults. Regression models were used to evaluate the relation of these measures to change in performance on the IGT across trials, reflecting implicit learning.

Results: After correcting for both crystallized and fluid intelligence (WAIS-III subtests) as well as problem solving (TOL), health literacy was a significant predictor of performance on the IGT (p = 0.003).

Conclusions: Results confirm the relation of health literacy to implicit learning in persons treated for HIV infection. Implicit learning may mediate the relation between adherence and health literacy.

69964 Health Literacy in Persons with HIV Infection is Related to Problem Solving

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Background: Health literacy has increasingly been recognized as a critical factor in health status, utilization, and outcomes. It has been related to medication adherence in persons treated for HIV infection. We had previously reported that health literacy is related to problem solving skills in persons treated for HIV infection. The purpose of this study was to evaluate the relation of measures of higher-level cognitive function (psychomotor speed, executive skills, and problem solving) to health literacy in a new group of persons with HIV infection.

Methods: As part of an ongoing study of medication adherence in HIV infection, 33 persons completed a battery of cognitive measures that included the Vocabulary and Block Design subtests of the Wechsler Adult Intelligence Scale-III, Purdue Pegboard, Trail Making Test, Tower of London, and Test of Functional Health Literacy in Adults. Regression models were used to evaluate the relation of these measures to health literacy-related reading comprehension and numeracy.

Results: After controlling for basic verbal ability (WAIS-III Vocabulary, $p < .001$), a measure of fluid intelligence (WAIS-III Block Design, $p < .07$) approached statistical significance while problem solving (TOL, $p = .004$), and executive function (Trails B, $p = .03$) were significant predictors of TOFHLA reading comprehension score. Psychomotor speed (Purdue Assembly, $p = .37$) was not a predictor. In the same model predicting TOFHLA numeracy scores, WAIS-III Vocabulary ($p = .006$), Block Design ($p = .002$), and Tower of London ($p = .001$), were predictors, while Trails B ($p = .36$), and Purdue Assembly ($p = .33$) were not.

Conclusions: These results support our previous observation that health literacy skills may be related to fluid intelligence and problem solving. A better understanding of the role of health literacy in medication adherence and in other important health outcomes may depend of an understanding of the ways in which it is related to higher-level cognitive abilities.

69970 The Unwritten Process: Challenges Preparing Adherence Data from the Extended Safety trial of Tenofovir Disoproxil Fumarate (TDF) for HIV Pre-Exposure Prophylaxis (PrEP) among Men who have Sex with Men (MSM) in 3 US Cities

Brandon M O'Hara[1] **(presenting)**, Sonal Pathak[1], Roman Gvetadze[1], Albert Liu[2], Brandi Collins[1], Marta Ackers[3], Lynn Paxton[3], Melanie Thompson[4], Susan Buchbinder[2], Kenneth Mayer[5], Vasavi Thomas[3], Lisa Grohskopf[3], Kata Chillag[3]

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Introduction: Results from the CAPRISA 004 microbicide and iPrEx oral antiretroviral prophylaxis trials reinforced the importance of adherence in HIV prevention trials. The critical data collection, management, and documentation decisions that precede trial outcome analyses are rarely described. These steps are labor-intensive and require multidisciplinary input. We describe challenges in preparing adherence data from the first PrEP safety trial among MSM. Solutions required balancing concerns about feasibility and accuracy.

Description: Medication Event Monitoring System (MEMS), pill count, and Audio Computer-Assisted Self-Interview (ACASI) data were used to triangulate adherence. MEMS and pill count data were collected at regular study visits. Items about nonstandard MEMS use, self-reported adherence, reasons for nonadherence, sexual behavior-related use patterns, and pill sharing were administered by ACASI. Difficulties associated with MEMS included: drug packaging and stability requirements, malfunction, cap loss, and acceptability. Technical issues associated with ACASI were relatively rare, and included administration of incorrect questionnaires. Problems with pill count included: failure to return pills at correct study visit, pill and bottle loss, insufficient detail linking dispensed and returned bottles, and visit noncompliance.

Lessons Learned: Considerable time and expertise were needed to characterize incomplete and contradictory MEMS and pill count information. We used a variety of sources including drug interruption logs, comments on case report forms, and staff reports to describe anomalies. Using a schema based on source reliability, we created an exhaustive line-listing of irregularities.

Recommendations: Data collection, management and analysis plans require sufficient flexibility to allow for unanticipated issues including variation in site practices. Cross-trial discussions of the mechanics of data preparation are essential for establishing best practices. Development of validated biomarkers may address some limitations of existing measures. Collection of in-depth qualitative data about acceptability and practices such as pocket dosing and pill sharing can enrich interpretation of standard adherence measures.

POSTER ABSTRACTS

69975 Determinants of Virological Suppression in HIV-Positive Patients on Antiretroviral Therapy with Self-Reported Poor Adherence: the Swiss HIV Cohort Study

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Background: Although high adherence to antiretroviral therapy (ART) is the mainstay of successful HIV treatment, some patients remain suppressed despite poor adherence. We hypothesize that this could be the result of pharmacological and/or genetic host factors.

Methods: Eligible individuals were Caucasians, on regimens containing lopinavir (LPV) or efavirenz (EFV), and reported poor adherence (defined as missing doses of ART ≥1 time a week in the last 28 days) on ≥2 consecutive visits ≥12 weeks apart. Viral suppression was defined as having all HIV-1 RNA <400 copies/ml during the study. Potential predictors of viral suppression were compared separately for LPV and EFV patients.

Results: From January 2003 until May 2009, 69 individuals on LPV and 37 on EFV were eligible. The median poor adherence period was 32 weeks with 20.3% of LPV and 18.9% of EFV patients reporting missed doses on a daily basis. Mutations were found on CYP3A4 (rs6945984) (18.8%), SLC01B1*5 (35.9%), and ABCC2 (rs717620) (40.6%) in LPV patients and CYP2B6*6 (46.9%) in EFV patients. No mutations were found to be associated with viral suppression (p-values >0.20). Reporting missing >1 doses a week was associated with a lower probability of viral suppression compared to those missing 1 dose a week (LPV: odds ratio (OR) 0.25, 95% confidence interval (CI): 0.07-0.85; EFV: OR 0.11, 95% CI: 0.01-0.99). In both groups, the longer they were suppressed prior to reporting poor adherence the more likely they were to remain suppressed (LPV: OR 1.06, 95% CI: 1.02-1.10; EFV: OR 1.04, 95% CI: 0.99-1.08).

Conclusions: Genetics did not appear to play a role in the sustained viral suppression of individuals with prolonged periods of poor adherence. EFV and LPV were very forgiving of suboptimal adherence and the longer one remained suppressed on the regimen, the more protected they were against viral failure during periods of poor adherence.

69977 Me, My Health & My Medicines

Jennifa Miah[1] **(presenting)**, Diane Melvin[2]

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Introduction: In HIV, the relationship between children's understanding of the diagnosis and adhering to complex medicines is unclear. This interactive workbook was developed to support school aged children in navigating through these complex processes.

Description: "Me, My Health & My Medicines" is a workbook for primary school aged children growing up with HIV. It was developed as a child appropriate resource for use in health care settings in the UK to link HIV with health. It focuses on ideas to enhance understanding, both of health and individual wellbeing, and uses ideas from child development, communication and narrative models. The booklet was compiled in consultation with children and young people living with HIV.

Lessons Learned: Importance of personalized and "active" participation the child can work through the booklet at their own pace and can relate ideas and examples in the booklet to their own lives and health experiences. Making personal narratives enhances understanding and makes the workbook appropriate for children of different ages and from diverse backgrounds. Partnership and involvement of parents and carers Inclusion of parents or carers in using the booklet increases the likelihood of conversations about health, taking medicines and diagnosis continuing outside health settings. Continuity and updating Continuing conversations before and after naming of the diagnosis and taking some active control of medicine taking and their health may improve the child's long-term adherence.

Recommendations: A range of resources are needed to support disclosure and adherence for children growing up with HIV. This booklet is not the definitive text but provides a template of ideas and stories to help conversations between children, parents and professionals. Whilst the stories may differ depending on culture and context, the underlying concepts behind the booklet remain the same.

69983 Patient Perspectives on Physician-Patient Communication on ARV Adherence

Michael B Laws[1] **(presenting)**, Gary Rose[2],
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Background: Although there have been observational studies of physician-patient communication regarding medication adherence, and intervention trials intended to improve communication, little is known about patient perspectives on clinical communication about ARV adherence.

Methods: We conducted 4 focus groups in each of two east coast cities with people living with HIV. The discussion guide included psychosocial and treatment history of living with HIV; relationship with current HIV provider; and experiences discussing ARV adherence with providers. Participants also responded to audio recordings of re-creations of actual physician-patient dialogues. Groups at site 1 were stratified by education level; at site 2 by salient substance abuse history.

Results: 81 individuals (about 40% female) participated in the 8 groups. At site 1, participants were ethnically diverse including African Americans, non-Hispanic whites, Latinos and Native Americans. At site 2, all but three were African American. All attended HIV specialty clinics. Most were long-term survivors but a few were recently diagnosed. Many told stories of life changing moments, before which they avoided treatment or were non-adherent, often related to substance abuse. Trauma history and psychiatric co-morbidity were prevalent. Nearly all reported very satisfactory and emotionally close relationships with their current providers, who often knew a great deal about their life worlds and personal struggles. A common theme was appreciation for the provider being accessible. Another was the importance of the provider being clear and firm about ARV adherence and other health related behaviors, which was seen as a sign of caring. Most endorsed highly directive and even judgmental physician behaviors in the audio prompts, with the exception of participants in the high-education groups.

Discussion: Most participants appreciated strong physician directiveness regarding ARV adherence, but only in the context of a trusting and caring relationship. More highly educated participants were likely to prefer a more collaborative interaction style.

69984 Structured Analysis of Provider-Patient Communication about ARV Adherence

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Background: Several observational studies have characterized physician-patient communication about medication taking in primary care, and in specific diseases including diabetes and glaucoma. However, comparable descriptive data in HIV care has been lacking.

Methods: We coded transcripts of routine HIV care visits from 4 widely separated HIV specialty clinics in the US, 1 visit per patient, using the Generalized Medical Interaction Analysis System, which codes for both the speech act and topic of both provider and patient utterances.

Results: The 415 patients were 60% African American, 34% female. Providers included NPs and MDs. A mean of 10.5% of utterances were on the topic of ARV treatment (median 30 utterances, 6.5%), including prescribing and side effects as well as adherence. This is less than the proportion devoted to psychosocial and logistics (e.g., scheduling and referral) topics. 331 visits (80%) included discussion of ARV treatment (not necessarily adherence), but only 54 (13%) included any problem solving about ARV adherence. Within discussion of ARV treatment, a mean of 37% of provider utterances were questions soliciting factual information; but only 10 visits included any questions soliciting patient's goals, feelings or opinions. Only 1 provider asked a question checking a patient's understanding of information. Providers' verbal dominance was similar (55% of utterances) within the adherence topic to the overall visit. Of 183 patients reporting less than perfect adherence, 82% of visits featured some discussion of adherence, but only 20% included any problem solving. Discussion of adherence was more common (91%) when patients reported perfect adherence. Various other characteristics of the dialogue were analyzed.

Discussion: Providers are no more likely to discuss ARV adherence when patients are non-adherent. Problem solving occurred infrequently, and physicians tended to be highly controlling and verbally dominant when adherence was discussed.

POSTER ABSTRACTS

69987 The Challenges and Facilitators of Implementing Nurse-Initiated Rapid HIV Testing in High Prevalence Primary Care Settings within the US Department of Veterans Affairs

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Research objective: Of the HIV-positive people in the US, 25% are unaware of their disease status. Widespread HIV testing is important so treatment can be initiated for those seropositive. Nurse-initiated rapid testing (NRT) is a promising strategy for increasing HIV testing within primary care (PC). However, there is little understanding of the challenges and facilitators of NRT. Our objective was to examine NRT implementation in Veterans Affairs (VA) PC settings.

Study design: We conducted a qualitative evaluation of NRT in two urban VA PC clinics. Pre-implementation interviews (T1) with nurses, providers and other key stakeholders elicited perspectives on the anticipated challenges and facilitators of NRT. With NRT implementation underway, frontline providers (providers and nurses) were interviewed (T2) about actual challenges and facilitators experienced. Research assistants also provided observations on NRT challenges and questions that arose during implementation. A qualitative thematic analysis was performed on interview fieldnotes; the anticipated and actual challenges and facilitators of NRT were thematically organized.

Principal findings: In T2, nurses identified unanticipated experiences implementing NRT that had not been anticipated in T1. Despite nurses' concerns in T1 about the burdens of adding NRT to their clinical responsibilities, nurses found that incorporating NRT into clinical encounters was not burdensome and was straightforward and uncomplicated. Negative unanticipated experiences concerned delays in the documentation of NRT results. Delays were attributed to limitations of the VA's computerized patient record system (CPRS). Although not initially mentioned by participants, research staff observed that patients occasionally did not receive results by the end of visits, as was expected. However, when addressed in interviews, participants revealed that patients did, shortly thereafter, receive results.

Conclusions and implications for delivery: While the majority of anticipated problems with NRT did not occur in actual implementation, there were still several challenges. Further initiatives should address such issues in order to most successfully improve HIV testing rates.

69988 Evaluating the Implementation of Nurse-Initiated HIV Rapid Testing in VA Substance Use Disorder Clinics

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Background: Individuals with substance use disorders (SUDs) are at higher risk of HIV infection, yet a recent study of US Department of Veterans Affairs (VA) patients with SUDs showed only 20% of these patients had received HIV testing. This study aimed to increase access to testing for this vulnerable population by implementing and evaluating a variant of our previously successful nurse-initiated HIV oral rapid testing (NRT) strategy at three VA SUD clinics.

Methods: 1. Training - Evidence for NRT - Training in the use of a computerized clinical reminder (CCR) that appears in the computerized patient record system (CPRS) - Instructions on the HIV oral rapid test - Patient education strategies 2. Implementation - Installation of an HIV rapid test CCR and CPRS template - An individualized testing procedure for each sub-clinic based on respective clinic flow 3. Qualitative interviews with nursing staff 4. Quantitative evaluation of HIV testing rates.

Results: Local laboratory data showed the following rates of testing over a six month period: Site 1: 178 Site 2: 9 Site 3: 65 Qualitative results: Barriers - Lack of support from the lab or providers who are required to sign off on nurse point-of-care testing - Resistance from some staff to expand their duties to include routine medical procedures Facilitators - The CCR as a prompt for testing - Awareness of the population's risk and a positive attitude towards HIV testing - Offering guidance on how to provide support to preliminary positive patients

Conclusions: Besides timely receipt of results, HIV rapid testing in SUD clinics allows patients to be tested by a provider that is familiar to them in a setting that is convenient and comfortable. Point-of-care NRT can be easily and sustainably incorporated into SUD clinics with minimal impact on nurse workflow and time.

69990 Development and Implementation of a Comprehensive Peer Mentor Training Program to Increase Linkage and Re-Linkage to care for At-Risk HIV-Positive Patients

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Introduction: The use of peer mentors is an emerging implementation strategy to improve HIV adherence and systems navigation for retention in HIV care but little information exists on methods to address the training needs of peer mentors for behavioral change interventions.

Description: The current study (part of a National Institute of Mental Health grant) developed and is evaluating the impact of a peer mentor delivered intervention to improve linking hospitalized HIV patients to HIV care after discharge. The intervention and associated training program was founded on an Information Motivation Behavior (IMB) model of engagement in care and focused on goal setting and action plans for obtaining outpatient HIV care following discharge. Content development began with a panel of HIV and behavioral change experts and subsequently enlisted feedback from the peer mentor group. The resulting curriculum consisted of: 1) mentor intervention manual 2) 4-hour workshop (didactic, modeling, and practice exercises) 3) standardized follow-up practice role plays and 4) formal role plays conducted with trained actors. Formal role plays were videotaped and viewed live by two members of the training team who rated fidelity and competence. Certified mentors were asked to repeat the actor-based role plays every 4-6 months to ensure continued fidelity.

Lessons Learned: 1) Multimodal training, specifically the inclusion of skill-based practice opportunities increase mentor confidence and competency; 2) expert modeling was best received when the modeling was conducted by a peer (rather than trainer) and; 3) actor-based role-plays are a valuable way to train in a near real-world settings without interfering with actual therapeutic relationships.

Recommendations: 1) Include intervention stakeholders early in the process of intervention development; 2) Fidelity and competence ratings are important for establishing initial certification and to maintain minimum levels of intervention fidelity and: 3) Inclusion of mentors as trainers can facilitate comfort and confidence for incoming mentors.

69992 Does Substance Use Interfere with Acquisition and Maintenance of HIV Medication Adherence Skills?

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Background: Prior trials of Cognitive Behavioral Therapy for Adherence and Depression (CBT-AD) in HIV indicate that integration of medication adherence counseling with depression treatment improved both adherence and depression relative to enhanced treatment as usual (ETAU). However, HIV-infected injection drug users (IDU) in treatment did not maintain adherence gains after treatment ended. This analysis examined whether substance use moderated acquisition or maintenance of adherence gains after CBT-AD.

Methods: HIV-infected adults in treatment for opioid dependence (n=89) completed assessments including recent substance use (ASI-Lite) and two-week medication adherence (MEMS: electronic bottle cap monitoring). Participants were then randomly assigned to CBT-AD or ETAU and repeated assessments at 3, 6, and 12 months. Hierarchical linear modeling was used to evaluate whether intervention assignment (CBT-AD vs. ETAU) interacted with substance use to predict change in adherence during active treatment (baseline to 3 months) and follow-up (3 to 12 months).

Results: At baseline, the most commonly reported substances were heroin (25.8%) and cocaine (25.8%), with 1.1% or fewer reporting recent use of amphetamines, hallucinogens or inhalants. CBT-AD-related improvement in adherence during active treatment period did not vary by heroin or cocaine use. However, intervention assignment (CBT vs. ETAU) interacted with cocaine use to predict the decline in adherence during follow-up (group condition x cocaine use coefficient = -.78, t = -2.12, p = .037) such that by 12 months, adherence among CBT participants differed significantly between cocaine users (45.0%) and non-users (72.3%; t = 2.50, p = .018).

Conclusions: Among HIV-infected, opioid-dependent adults who participated in CBT-AD, illicit substance use did not interfere with the ability to acquire adherence skills but cocaine use in particular explained a steeper decline in adherence during follow-up. Findings support that for individuals using cocaine, ongoing adherence counseling and potentially, augmented treatment for lapses in cocaine use, may be needed to maintain intervention-related gains.

69994 Baseline Predictors of Electronically Monitored and Self-Reported Adherence in Pharmacotherapy Trials Among Methamphetamine-Dependent Men who have Sex with Men (MSM)

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Background: Methamphetamine (meth) users often have poor medication adherence—an impediment for biomedical HIV prevention intervention trials among this population. We characterized the predictors of two adherence measures among sexually-active, HIV-negative and HIV-positive, meth-dependent MSM in pharmacotherapy trials of medications to reduce meth use.

Methods: In two randomized double-blind placebo-controlled 12-week trials (n = 90), we measured adherence by medication event monitoring systems (MEMS) and by structured self-report (SSR). We assessed behavioral and demographic predictors of adherence, controlling for active drug treatment (mirtazapine and bupropion) and excluding those taken off medication by study staff. MEMS values were approximately normally distributed and modeled using linear regression. SSR values were skewed, thus we assessed <90% SSR adherence using logistic regression. After screening predictors in unadjusted models, we used backward deletion to select final models.

Results: Median adherence was 65.5% (interquartile range [IQR] = 42.6-77.7) by MEMS and 83.3% (IQR = 75-100) by SSR; the Spearman correlation between them was 0.58. MEMS adherence was lower among MSM reporting HIV serodiscordant anal sex partners (16.6%; p = 0.02) or recent crack use (16.7%; p = 0.03), younger MSM (8.4% per 10 year age decrease; p = 0.01) and those with an income of <$30,000 (19%; p = 0.02). Less than 90% adherence by SSR was associated with recently injecting drugs (adjusted odds ratio [AOR] = 4.2, p = 0.02), marijuana use (AOR 5.0, p = 0.01), income <$30,000 (AOR = 7.4, p = 0.03), and being HIV negative (AOR = 3.7; p = 0.04).

Conclusions: Medication adherence by SSR was higher than MEMS; the two measures were modestly correlated. These findings are consistent with other studies, suggesting that SSR may overestimate adherence and underscores the need to use MEMS in pharmacologic trials among actively-using, meth-dependent MSM. Our data also suggest that in this population, subgroups with high-risk sexual behaviors, lower income, and those using multiple substances should be considered for additional support to optimize adherence. Targeting adherence interventions to address these factors may be worthwhile.

69996 5.2 Refills Remaining: How HIV-Positive Patients Really Receive, Store and Take their Medications

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Background: HIV-positive patients employ various pill management strategies and face a range of pharmacy-related challenges that affect antiretroviral adherence.

Methods: The SLAM DUNC (Strategies to Link Antidepressant and Antiretroviral Management at Duke and UNC) Study, a randomized trial to test the effect of depression treatment on antiretroviral adherence, is implementing monthly unannounced phone-based pill counts as the primary adherence outcome measure. These contacts provide detailed windows into participants' pharmacy experiences and pill management habits.

Results: Of 49 participants followed to date for a mean of 3.1 (range: 0-7) months, the majority store antiretrovirals in original prescription bottles (n = 27) or pillboxes (n = 22); other strategies include plastic baggies (n = 4) and non-antiretroviral prescription bottles (n = 6) with some overlap. For confidentiality some participants remove or cross out antiretroviral labels (n = 5). Those with overnight jobs vary dosing times depending on each day's schedule (n = 2). One participant with a twice-daily antiretroviral alternates between double doses in the morning or evening every two weeks. Patients report pharmacy-related challenges to pill management. Three participants self-reported missing doses due to pharmacy errors and issues with provider reauthorizations. One participant reported routinely receiving only 2-3 pills when attempting to fill her monthly prescription, requiring multiple trips. One pharmacy dispensed 46 pills for a 60-pill prescription, listing 5.2 remaining refills. One pharmacy sent 60 150mg pills instead of 30 300mg pills, but labeled the bottle as containing 30 150mg pills, and gave no instructions to take two pills daily. Another participant with a 90-day prescription inconsistently received 60-day supplies of one antiretroviral and 30-day supplies of the second antiretroviral. Pharmacy labels confound several participants, who receive 60-tablet supplies that are dispensed in two bottles labeled 60 but containing only 30 tablets each.

Conclusions: Understanding the complex management techniques and pharmacy issues that impact ARV adherence will strengthen future adherence interventions.

69998 Successful Initial Implementation of Phone-Based Pill Counts as an Objective Measure of ARV Adherence

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Introduction: Different antiretroviral adherence measurement strategies produce different balances between competing considerations of validity and resource efficiency. Unannounced phone-based pill counts are an objective adherence measurement approach which has been previously demonstrated as reliable and valid.

Description: The SLAM DUNC (Strategies to Link Antidepressant and Antiretroviral Management at Duke and UNC) Study, a randomized controlled trial to test the effect of depression treatment on antiretroviral adherence, is implementing monthly unannounced phone-based pill counts over 12 months as the primary adherence outcome measure. Since study launch in April 2010, 49 participants have been followed a mean of 3.1 months (range: 0-7). Participants receive a study cell phone if needed (48% have accepted a phone). Since launch, the phone assessor, blinded to study arm, has completed 170 pill counts out of 183 target monthly intervals for a completion rate of 93%. Baseline pill counts average 30 minutes in duration, while follow-up pill counts average 12 minutes. Mean adherence (percentage of pills taken over pills expected) was 88% (interquartile range: 86-100%). Facilitators of successful contact and measurement include provision of cell phones and reading glasses to participants, interviewer accommodation of participant availability (including off hours), and initial in-person orientation to navigating prescription labels. Challenges to collecting adherence data in this population of depressed HIV patients include low literacy, scheduling variability, medication sharing, and housing instability.

Lessons Learned: Researchers should anticipate a spectrum of literacy and cognitive levels. Resource requirements are modest compared to other objective approaches to adherence measurement. The method leaves the antiretroviral management habits of participants unchanged, permitting insight into real-world pill management practices.

Recommendations: With proper structure, unannounced phone-based pill counts can be a feasible, resource-efficient, objective approach to assessing trends in antiretroviral adherence over time and can be highly effective in reaching participants regularly.

70004 Validating Multiple Self-Report Measures of HIV Treatment Adherence in Sierra Leone

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Background: Using self-report measures as a screening tool for adherence to antiretroviral therapy has heightened relevance in settings without routine access to an HIV viral load machine. Studies validating self-report adherence measures in resource-poor settings are limited. No study has assessed adherence levels in Sierra Leone nor reported a validated adherence measure in West Africa.

Methods: We assessed correlation between multiple self-report measures of adherence and home-based unannounced pill counts in 17 participants receiving generic Duovir (coformulated ziduvdine and lamivudine) plus nevirapine or efavirenz. Two adherence assessments were conducted in three unannounced participant visits over three months. Measures included unannounced home pill count, 30-day visual analog scale (VAS), Lu measure (a single qualitative assessment of adherence, with 6 possible responses ranging from "very poor" to "excellent," and analyzed as 0%, 20%, 40%, 60%, 80%, 100%), 4-day AACTG, and 7-day self-report.

Results: Median adherence for each measure was as follows: 89.8%, pill count; 90.0%, VAS; 80.0%, Lu; 100%, AACTG; and 100%, 7-day self-report. Mean adherence (95% confidence interval) for each measure was as follows: 80.9% (70.9%-90.8%), pill count; 87.9% (81.2%-94.8%), VAS; 77.1% (68.4%-85.7%), Lu; 94.1% (87.8%-100%), AACTG; and 93.8% (89.7%-98.2%), 7-day self-report. The range of adherence for pill count was 37.7%-100%. The correlation among self-report measures (R = 0.46-0.78) was higher than between pill count and the following self-report measures: R = 0.40, VAS; R = 0.14, Lu; R = 0.36, AACTG; and R = 0.41, 7-day self-report.

Conclusions: Median and mean adherence for pill count was less than 95% and suggested that an intervention is needed to improve adherence before patients develop drug resistance. Although sample size limited conclusions, only modest correlations were observed between self-report measures and pill count, and the qualitative item had a very weak correlation. Improving the validity of self-report adherence measures in Sierra Leone requires further study and possibly cultural adaptation.

POSTER ABSTRACTS

70007 Psychosocial Assessment and Treatment Preparation a Key Factor to Proper Adherence to ART - TASO Mulago Experience

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The AIDS Support Organisation (TASO), Kampala, Uganda

Background: The AIDS Support Organization is an indigenous Non-governmental Organization that runs a comprehensive ART program at center and community level. TASO Mulago offers ART Treatment to 4138 clients, cumulative since the inception of the program in 2004. After enrollment on ART, PLWHIV experience a number of challenges that affect their adherence levels; these include; stigma and Discrimination, poor nutrition, OIs, poor hygiene, sharing of drugs, family negligence and all these if not handled well can lead to treatment failure.

Methods: The psychosocial challenges faced by PLWHIV on enrolled on ART made TASO design a smart care pathway that is carefully followed to enroll clients on ART. TASO follows the MoH and WHO ART guidelines while implementing the ART programme. After the CD4 test and other assessments, the client's file is sent to a case conference which decides on client's combination and when to start; it involves a counselor, a medical doctor, a nurse and a field officer. The file is then sent to counseling department to prepare the client. The counselor conducts a home visit where he does the house hold survey and education on ART, educates the client on the possible side effects of the drugs and offers information on positive living. Home-based counseling and testing (HBHCT) for the family members is done. The client then identifies a medicine companion and a commitment form is signed. The counselor will then recommend whether the client is ready for the treatment or not. This process takes one week.

Results: There is increased family support offered to clients on ART by their family members, The care partway has highly contributed to HIV prevention due to VCT and issues of drug-sharing have been dealt with, HBHCT has been done to 4010 homes and 240 External referrals have been made through HBHCT, the Adherence rate has risen to over 95% and the level of stigma has gone down in clients especially on ART.

Conclusions: PLWHIV have a right to make their own decisions before starting ART treatment, therefore it is very important to support them to understand how the treatment works, and the family members are key to proper adherence of the client.

70009 Addressing ART Adherence Issues in the Context of Co-Morbid Conditions in Resource-Limited Settings - What TASO Uganda Has Done

Kinaalwa Geoffrey (presenting)

The AIDS Support Organisation (TASO), Kampala, Uganda

Introduction: The AIDS Support Organization (TASO) is an indigenous HIV/AIDS organization established in 1987. TASO Mulago one, of the centers offers services to a cumulative number of 38,062 by December 2010, 10% of these on ART program. Being a resource limited country, clients are initiated on ART at lower CD4 counts than the recommended increasing chances of acquiring opportunistic infections (OIs) thus affecting their adherence level. Need to address OIs and co-morbid conditions like tuberculosis (TB), malaria, toxoplasmosis, meningitis, cancers, PCP, and sexually transmitted infections was realized.

Description: Uganda being a third world country, many PLWAs are not able to get atripla (TDF/FTC/EFZ), the single pill combination which could reduce the pill burden. The commonest ART combination given to TASO clients, combipac (LVD/ZDV/NVP) requires a minimum of 2 tablets a day plus any other OIs Rx say toxoplasmosis (4x3 tablets a day) or TB 3 tablets a day. To encourage adherence, different approaches have been used. These include preventive measures to avoid the OIs like intensive health education, early screening especially for TB and other diseases like STIs, early treatment of these diseases and delaying ARVS until intensive phase of TB treatment, provision of a Basic Care Package (condoms, bednets and Jerry cans) for safe water, malaria prevention and STIs among others, and the TASO 10-point program.

Results: OIs have been managed well; the early screening especially for TB and other diseases like STIs has helped to prevent clients from issues of pill burden, fewer cases of malaria and HIV re-infection have been observed due to the Basic Care Package, TASO Mulago health workers have all been trained in early diagnosing of OIs like TB.

Conclusions: Continuous sensitization of HIV patients on OIs, early screening of OIs, Sessions like health talks and weekly Continuous Medical Education Sessions (CMESs) for Health workers are all key areas in management of co-morbid conditions in ART patients. Tests like hemoglobin, weight, kilograms, HCG and CD4 count follow-up after six months should be made routine for patients on ART.

70012 Involving People Living with HIV/AIDS to Support their Peers for Access to Improved HIV-Related Services in Northern Uganda

Luigi Cicciò (presenting), Andrew A Ocero, Juliet Arica

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Introduction: There are some challenges to provide quality and comprehensive HIV/AIDS services in Northern Uganda. These include, among others, insufficient human resources and a disjointed relationship between health workers and the community they serve. Patients often have to refer themselves to congested facilities where overburden staff cannot answer to all their demands, concerns and health issues.

Description: The Northern Uganda Malaria, AIDS and Tuberculosis Program (NUMAT) involved People Living with HIV/AIDS (PHA) volunteers in supporting, mobilizing and bringing together their fellow PHAs in network groups at district and sub/county level to access information on existing services, sustain advocacy campaigns for critical interventions and work to challenge stigma and discrimination. Additionally, the Program built the capacity of the networks' members to become "service navigators," helping their peers in accessing complementary HIV-related services, linking PHAs to HIV-related prevention, treatment care and support services, including social and legal help and nutritional supplementation.

Lessons Learned: NUMAT has so far supported the activation and functionality of nine district-based and over 100 subcounty-based PHA networks in the region with a membership of nearly 50,000 PHAs. More than 200 members of these networks have been trained to provide community Home Based Care services, promote ART adherence and mobilize the community to utilize testing services, prevention of HIV vertical transmission, TB detection and treatment and palliative care services. Furthermore, 60 PHAs were trained to deliver Basic Care Package (BCP) commodities in the region and over 5,000 PHAs received the BCP kit. The perception of the health workers was positive for the level of commitment of PHAs and their help in covering some of the tasks they were supposed to accomplish. PHAs themselves found easier to access, consult and confide with fellow PHAs before being referred to health staff for clinical attention.

Recommendations: Evidence reveals the positive gains in HIV service provision from the greater involvement of PHAs by strengthening both individual PHAs and their networks. Ensuring PHAs have access to preventive, treatment and care services must go hand in hand with the efforts described above especially in areas where there is a shortage of human resources for health. PHAs have also the potential to be fully integrated in the health system.

70020 A Meth-od to My Madness: The Paradoxical Interaction between Impulsivity and Methamphetamine Use in Predicting Non-Adherence

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Background: Impulsivity is considered both a determinant and consequence of substance use, and has been implicated in risk behavior among HIV individuals. Methamphetamine (MA) use is a critical factor in non-adherence, and problems with impulsivity have been documented among MA users.

Methods: HIV MSM who reported MA use and problems with medication adherence (n = 123) were recruited for a behavioral intervention. Impulsivity was measured using the Barratt Impulsiveness Scale and a computerized behavioral task, the Go-Nogo. Participants completed a detailed calendar assessment of adherence and MA use in the last 14 days. Generalized estimating equations were used to examine day-level associations between MA use and missed meds, the role of impulsivity in non-adherence, and the impact of impulsivity on the day-level relationship between MA use and adherence.

Results: Non-adherence was more than twice as likely on a MA day, compared to a day without MA use (Exp (B) = 2.6, p <.001). Controlling for MA use, both behavioral and self-report impulsivity measures were significant and independent predictors of non-adherence, (Exp (B) = 2.5, p <.05 and Exp (B) = 1.5, p <.01, respectively). Paradoxically, there was a significant interaction between impulsivity and MA use, such that higher impulsivity scores were associated with a decreased day-level association between MA and non-adherence (Exp (B) = 0.6, p <.01).

Conclusions: Both behavioral and self-report measures of impulsivity are vital to understanding HIV adherence. The interaction effect merits further investigation: perhaps highly impulsive MSM are self-medicating and receive some benefits from stimulant use, similar to patients with ADHD. It is also possible that the least impulsive MSM are most strongly impacted by MA use at the day-level, because they are vulnerable to non-adherence only on drug-use days.

POSTER ABSTRACTS

70021 Health Literacy and HIV Medication Adherence: Validating the Rapid Estimate of Adult Literacy in Medicine (REALM) Tool in Assessing Literacy in Rural Africa

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Background: Health literacy is an important determinant in medication adherence among HIV positive patients. In many African countries, Instructions on medication and package inserts are in English, and despite translation to vernacular by health workers, patients still have to rely on their reading skills to understand additional information on drugs. The Rapid Estimate of Adult Literacy in Medicine (REALM) is a 66word recognition tool used to evaluate basic literacy in medicine in adults. Despite widespread international use, few studies have attempted to validate its use in countries where English is a second language. The purpose of the study was to examine the relationship between health literacy as estimated by the REALM and adherence to ARV treatment.

Methods: A cross sectional descriptive study. HIV positive adults on follow up at a rural Kenyan hospital underwent a questionnaire guided interview using the REALM tool (n = 162, 98 males and 64 females). Median age 34.3 years Median CD4 count 235. Median duration of follow up 3.36 years. Scores on the REALM were obtained out of 66 and correlated to the sex, level of formal education, occupation, and level of adherence to ARVs based on patients self report.

Results: Only 112 Qualified to be scored based on literacy level (61% of total, 60.7% males, 39.3% females). Average score was 32 (48.5%), Average for males was 38 and for females 26. Median score was 31. Level of Education: 11.6% had tertiary level, 44.6% secondary level and 34.8% primary level. Scores were as follows: 94% of those with tertiary level of education scored >55, 90% of those with primary level scored <28. Level of Adherence: 90% of those with >55 had not missed medication in the last 7 days, 95% of those with >35 but <55 had missed only one day and >75% of those with <28 had missed at least 3 days.

Conclusions: The REALM tool can be accurately used to evaluate level of health literacy in Kenya but the scores are lower than those reported elsewhere. Health literacy is also related to level of adherence to ARVS.

70025 The Association Between Methamphetamine Use and Engagement in HIV Care in a Sample of Men who have Sex with Men

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Background: Methamphetamine use is associated with a variety of negative health outcomes among people living with HIV. The aim of this study is to examine the association between methamphetamine use and engagement in HIV care factors.

Methods: HIV seropositive men who have sex with men (n = 312) completed an online survey from July-November, 2009. Within a larger survey, participants self-reported demographics, lifetime and recent methamphetamine use, engagement in HIV care factors, and other empirically demonstrated correlates of poor engagement.

Results: Over 1/3 (36%) of men reported using methamphetamines in their lifetime, with 9% doing so recently (i.e., in the past 30 days). In the past year, 71% participants attended all of their scheduled HIV-related appointments, 24% missed at least one appointment, and 6% did not schedule any appointments. The unadjusted model showed that men who recently used methamphetamines had higher odds of not scheduling any HIV-related appointment in the past year compared to men who had not recently used methamphetamines (OR = 3.64; 95% CI = 1.10,12.07); this association was not significant for lifetime methamphetamine use or in the fully adjusted models. For men who had scheduled at least one HIV-related appointment in the past year (n = 295), lifetime or recent use of methamphetamine were not significantly associated with missing appointments. Finally, compared to men reporting no methamphetamine use, a significantly higher percentage of men with lifetime (14.7% v 23.9%) or recent (15.8% v 40.7%) methamphetamine use believed that HIV care was a low priority. Adjusting for demographic and psychosocial factors, recent methamphetamine use was associated with believing that HIV treatment was a low priority (OR = 3.06; 95%CI = 1.19, 7.86).

Conclusions: Many MSM in this sample reported past or recent methamphetamine use. Recent methamphetamine among MSM use may be associated with not scheduling any HIV-related appointments in the past year and believing that HIV treatment is a low priority.

70027 The Treatment Support Team: Linking Health Facility and Community-Based Health Care Systems in Post-conflict Northern Uganda

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Introduction: During the protracted conflict and the recovery period in Northern Uganda, several actors at health facility and community level provided critical care and support for people living with HIV/AIDS. The community health system was becoming a more workable alternative to community follow up by the facility based health worker. However, health care workers were often unaware of the role of community service organizations active in their catchment areas. Clients were only able to benefit from both community and health facility based health care services through informal linkages. This limited comprehensiveness and equity of care for people with HIV.

Description: Northern Uganda Malaria AIDS Tuberculosis (NUMAT) Program supported the formation of the Treatment Support Team (TST) a forum bringing together HIV caregivers from health facility and from communities in the catchment area. The monthly meetings offer opportunity for information sharing on services available at the health facility and in the community. Individual HIV client audit is also carried out, giving opportunity for health workers to update information on loss to follow up, default and death amongst clients in the catchment area. Joint client specific strategies are drawn and implemented out of the meetings. As a deliverable, monthly reports are generated and disseminated to district authorities and stakeholders to inform future planning.

Lessons Learned: The TST has become a forum for resolving challenges in the continuum of care. It is a conduit for forging understanding between the highly expectant community and the heavily burdened health workers manning the ART clinics. The TST has promoted the retention of HIV patients in care.

Recommendations: The TST should be adopted by the formal health system and harnessed to improve adherence and retention of HIV clients in care. The forum could support follow-up of; children with HIV, PMTCT beneficiaries and patients co-infected with tuberculosis.

70028 The Impact of Pharmaceutical Interventions to Optimize HAART Adherence

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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 (A) will lead to treatment failure and the development of drug resistance, limiting the effectiveness of therapy On the purpose of optimizing Adherence to HAART (A), in patients with HIV/AIDS, a Pharmaceutical Care's office works as part of the Ramos Mejìa Hospital Pharmacy's Department The aim of this work is to describe the impact, in terms of viral load (VL) decrease, of pharmaceutical interventions (PhI) in the optimization of A.

Methods: A retrospective study carried out at Hospital Ramos Mejia, Buenos Aires, Argentina. Follow up cases of 46 patients referred the first semester of 2009, to the Pharmaceutical Care's office because of their A problems, were analyzed. The A levels were evaluated following pharmacy records of drug refills and pharmaceutical interviews. The obtained values were compared before and after the PhI. The VL levels details were obtained from those 46 patients history cases, taking into account VL determined three months after the PhI.

Results: The initials A levels were as follows: 22 patients (48%) had A values <90%, 6 (13%) had values >90%, and 18 (39%) had no previous records (starting treatment). After the PhI, 24 patients (52%) reached A levels >90%, 12 of them were starting treatment, 17 patients (37%) had levels < 90%, and 5 (11%) had no changes. Out of 24 patients that improved their A levels, 10 /42%) reached VL <50 copies/ml, 5 (21%) reduced at least 1 log, 8 (33%) kept the same levels, 1 (4%) increased level of more than 1 log.

Conclusions: The PhI implemented may result in a positive effect in the patients analyzed, the highest improvement being in those starting HAART. Further research will analyze if this improvement is correlated with a better clinical condition.

POSTER ABSTRACTS

70031 Effect of Medications to Treat Medical Co-Morbidities on Antiretroviral Therapy (ART) Adherence in Treatment-Experienced MSM

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Background: There is an increasing frequency of co-morbidities in HIV-infected individuals. Previous studies have demonstrated worsened adherence in patients with a high antiretroviral pill burden, while others have shown improved adherence with increasing number of comorbidities. We examined the effect of taking multiple medications for comorbid conditions on antiretroviral adherence.

Methods: Using the Fenway Health (FH) CNICS site database we extracted data for 143 treatment experienced MSM patients who responded to an adherence survey between 1/1/08 and 12/31/09. Adherence to ART over the past month was ascertained through a visual analog scale via audio computer-assisted self-interview. We performed bivariate analysis for adherence with year of birth, race, insurance type, whether there was an active prescription for common comorbid conditions, count of these prescriptions and viral load (VL) detectability as independent variables.

Results: 143 individuals responded, 83% were white, 8.4% black, and 4.2% Hispanic. The average age was 46 years (range 24-73). 87% reported >95% adherence. The mean CD4 count was 588 cells/mm^3 and 10% had a detectable VL. The most common comorbid conditions were depression 46%, hypertension 41%, allergies 36%, hyperlipidemia 29%, and gastric reflux/peptic ulcer 20%. The mean number of these conditions treated pharmacologically was 2.3 with a mean of 3 medications (standard deviation 2.5). Neither the total number of comorbid medications nor the presence or count of medications from any specific class were associated with adherence. The only variable associated with poor adherence was VL detectability p <0.01.

Conclusions: Self-reported adherence in our population of HIV-infected MSM in care was exceptionally good and prescription of medications for comorbid conditions did not appear to have any significant effect on adherence. Studies in less adherent populations are needed. However, our data suggest that it is possible to treat comorbidities without endangering ART adherence.

70032 Fatalism, Acculturation, and Adherence in HIV-Positive Latinos on the US-Mexico Border

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Background: Latinos living with HIV in the US are subject to poorer average health outcomes and are more likely to develop AIDS than their majority counterparts. Researchers have hypothesized that cultural differences in fatalism may be related to health disparities. However, fatalism has been inconsistently related to ethnicity and health outcomes in past research, primarily due to differences in the way fatalism is operationalized across studies. We used a multidimensional measure of fatalism to study associations between fatalism and both acculturation and adherence outcomes in a sample of HIV-positive Latinos.

Methods: We conducted a cross-sectional paper-and-pencil survey of a non-probability sample of 216 HIV-positive Latinos of Mexican descent at an HIV primary care clinic on the US-Mexico border. Measures included the visual analog scale (VAS) assessing self-reported adherence over the past month, the Simplified Medication Adherence Questionnaire (SMAQ), Zea's Abbreviated Multidimensional Acculturation Scale, and the Multidimensional Fatalism Scale (MFS) comprising five dimensions of fatalism-ineluctable destiny (e.g., "I have learned that what is going to happen will happen"); helplessness/ pessimism (e.g., "No matter how hard I try, I still cannot succeed in life"); external control; luck; and divine control.

Results: Using a dichotomous SMAQ score, 70% of patients reported some evidence of nonadherence. Continuous scores on the SMAQ were correlated with fatalism as assessed by the MFS total score (r = .31) and the ineluctable destiny (r = .28); helplessness/pessimism (r = .23); luck (r = .21); and divine control (r = .22) subscales (all p's <.01). VAS adherence scores (M/SD = 8.5/2.0) were associated with the MFS total score (r = -.26) and with ineluctable destiny (r = -.20); helplessness/pessimism (r = -.23); and luck (r = -.19, all p's <.05). However, there was no association between acculturation and fatalism scores.

Conclusions: Multiple dimensions of fatalism were related to ART adherence but none varied with acculturation, suggesting that fatalism may be an important variable to consider in health-promotion efforts across cultures.

70033 Factors Associated with Missed Psychiatry Visits in an Urban HIV Clinic Setting

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Background: Linkage to primary HIV care is an important first step for longitudinal adherence to clinical care. Co-morbid mental health disorders are common in HIV-infected individuals and have been associated with poor clinical outcomes. Though studies of linkage to primary HIV care have been performed, little is known about linkage to mental health services.

Methods: A retrospective cohort study of HIV-infected patients at an academically affiliated urban HIV clinic who were referred to co-located psychiatric care professionals between 4/1/2008 and 6/1/2010. The primary outcome was failure to attend a psychiatry visit within 6-months of initial referral ("no show"). Multivariate logistic regression models were fit to evaluate factors predicting failed linkage to psychiatric care.

Results: Among 370 patients referred to psychiatry, the mean age was 42 ± 10 years, 51% were white males, 49% were publicly insured, and 66% lived locally in the Birmingham area. Overall, 23% of patients failed to link to psychiatric care. Of these, 84.7% had a prior diagnosis of depression and 2.4% had a prior diagnosis of schizophrenia. Patients who no-showed had a mean viral load ($\pm$ standard deviation [SD]) of $45,462 \pm 148,376$ copies/mL and a mean CD4 count ($\pm$SD) of 419 ± 311 cells/mm^3. In multivariate analysis, increased time to appointment date (OR = 1.12; CI = 1.06-1.17 per 7-days) and minority race-sex [non-white females (3.92; 1.82-8.44), non-white males (3.57; 1.79-7.09)] increased odds of failed linkage to psychiatry. Older patients (0.70; 0.52-0.94 per 10-years) and a diagnosis of schizophrenia (0.15; 0.03-0.73) decreased no show odds.

Conclusions: Despite co-located services, nearly one in four patients referred to psychiatry failed to link to care. Minority race-sex and extended time to appointment date diminished linkage to psychiatric care, while older age and a diagnosis of schizophrenia improved linkage to psychiatric care. Future studies could improve understanding of barriers to linkage to psychiatric care, which may affect disease management and improve HIV treatment adherence and outcomes.

70034 The Impact of Culture and Family Relationships on ART Adherence among HIV-Infected Muslim Women in Kano, Nigeria

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Introduction: Delivery of adherence support was patient-centric, especially during the early implementation of HIV/AIDS treatment programs. In some societies, however, ART adherence may be significantly influenced by family relationships, cultural practices, social norms, and/or religious beliefs. Minimal information regarding these influences is available in the published literature, particularly in Muslim polygamous populations.

Description: Case studies are drawn from a randomized, controlled trial evaluating peer-led, home-visit adherence interventions for HIV patients at an urban teaching hospital in northern Nigeria, where the permission of a male head of the family is typically required for a woman to obtain health care. In case one, a 23-year-old patient was one of two HIV-infected wives whose HIV-infected husband was supportive of both wives in their HIV care, but his support was perceived to be unequal. Conflict also arose when the patient's mother intervened in her care. In case two, a 25 year old patient was the second wife of a polygamous marriage and feared that her husband would divorce her. Her brothers instructed her to not to disclose her HIV status to her HIV-negative husband and the HIV-negative first wife. These cultural and social conflicts which impact retention to care were addressed by utilizing peer educators who educated and empowered patients through open collaboration and shared decision-making.

Lessons Learned: In addition to conventional patient-centric barriers to ART adherence, local culture and complex family relationships presented important additional adherence challenges. Peer educators were critical to identify these added challenges and to suggest strategies to overcome them. Health care providers were unable to fully identify and handle the effects of culture and relational dynamics due to their non-peer status and overburdened schedules.

Recommendations: In resource-constrained settings, attention must be paid to potential cultural and social factors that hinder optimal HIV care. Addressing these factors necessitates training of peer educators, and their partnership with the health care team to overcome these barriers to optimal adherence.

POSTER ABSTRACTS

70035 Relationship Between Viral Load and Behavioral Measures of Medication Adherence in Children with HIV Infection in Brazil, Mexico, and Peru

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Background: Behavioral measures of antiretroviral (ARV) adherence developed for HIV-infected children in the US were translated into Portuguese and Spanish to assess adherence based on caregiver report in HIV-infected children in Brazil, Mexico, and Peru enrolled in the Eunice Kennedy Shriver National Institute of Child Health and Human Development International Site Development Initiative (NISDI) pediatric protocol.

Methods: Caregivers of 387 children currently prescribed ARVs were interviewed using a standard questionnaire investigating the number of doses their child missed during the previous three days relative to the number of doses prescribed and when their child last missed a dose. Associations of adherence with viral load (VL) determined from specimens collected near the date of the interview were examined using bivariable analyses (ANOVA, Student's t-test, linear regression, Fisher's exact test).

Results: Mean ($\pm$SD) age of subjects was 5.0 ($\pm$3.1) years; 50% were female. A biological parent was the primary caregiver for 81% of subjects; caregivers had an average of 7.8 ($\pm$4.0) years of education. At enrollment, mean ($\pm$SD) CD4 percentage and peak $\log_{10}$ VL were 30% ($\pm$8.7%) and 5.4 ($\pm$1.2) copies/mL, respectively. 57% of subjects had VL <400 copies/mL. Mean adherence according to three-day recall was 98.4% and not associated with $\log_{10}$ VL (p = 0.71), nor was it significantly associated with VL <400 copies/mL (p = 0.99). 52% answered "never" when asked about last missed dose; adherence assessed according to this method was not associated with $\log_{10}$ VL (p = 0.09), but was of borderline significance with VL <400 copies/mL (p = 0.06).

Conclusions: Since the current ARV adherence questionnaire utilized for NISDI pediatric patients does not correlate well with viral load, other strategies to evaluate adherence need to be considered in this population. The possibility of drug resistance also has to be explored. Further work is needed to evaluate factors associated with viral suppression in this population.

70037 Retrospective Analysis of Engagement in HIV Care for Newly HIV-Diagnosed, Foreign-Born Individuals

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Background: Foreign-born persons compose a growing segment of the US HIV-infected population. Engagement in HIV care, a critical determinant of HIV treatment outcomes, has not been studied in this population.

Methods: Retrospective review of all newly-diagnosed HIV-infected individuals at Denver Public Health from 2005-2007. Data was collected from the electronic medical records of Denver Health Medical Center, University of Colorado Hospital, Children's Hospital of Denver, and from mandated Colorado state laboratory reporting databases for CD4 and HIV-RNA levels. Successful linkage to care required an outpatient clinic visit or HIV labs within 180 days of diagnosis. Full retention-in-care required no gaps in visits/labs lasting greater than 180 days. These variables were compared between foreign- and US-born persons.

Results: 352 individuals were included in the study; 54 (15.3%) were foreign-born, of which 37 (68.5%) were from Mexico. Eighty percent of the foreign-born individuals were Hispanic compared to 21% (p <0.001) of US-born individuals. 59% of the foreign-born population reported having sex with men as their primary risk for HIV infection compared to 83% (p <0.001) of the US-born population. Median CD4 lymphocyte counts at diagnosis were lower in foreign-born (331 cells/ul; IQR 172-486 cells/ul) than in US-born individuals (439 cells/ul; IQR 262-623 cells/ul; p = 0.002). Median time to linkage for foreign-born compared to US-born persons was 25 days (IQR 14-43 days) versus 38 days (IQR 20-101 days; p <0.001), and 87% of foreign-born versus 70% (p = 0.01) of US-born individuals had at least one visit for HIV care within 6 months of HIV diagnosis. 53% of foreign-born individuals had full retention-in-care compared to 35% (p = 0.03) of US-born individuals.

Conclusions: Foreign-born persons in Denver present with lower CD4 counts than US-born persons, but had better engagement in care than US-born individuals with regard to both linkage to care and retention-in-care.

70038 Reasons and Risk Factors for HIV Treatment Interruption in a Cohort of Patients from Public and Private Clinics in Southern India

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Background: Understanding the prevalence and reasons for HIV treatment interruptions (TI) in resource-limited settings (RLS) is important for improving adherence and preventing drug resistance and virologic failure.

Methods: 552 HIV-infected adults on antiretroviral therapy (ART) from public and private hospitals in Bangalore, India were enrolled into a prospective adherence cohort. Participants underwent a structured interview assessing adherence, including TIs of >2days and self-reported perception of reasons for TI. CD4 count and HIV viral load (VL) were measured.

Results: At baseline, mean age was 37.8, 32% were female, 70% married, 49% earned <$2/day. Nevirapine-based ART was most common (84%; n = 464); median ART duration was 18 months (range:1-175), and median CD4 count at enrollment was 318 cells/μl (IQR:195-460). Twenty percent (n = 110) reported any TI; of these, 33% (n = 36) reported >1 TI. Median TI length was 10 days (range: 2-1095). The most common reasons given for TI were "doctor told me to" (28%; n = 31), cost of therapy (22%; n = 24), "being away from home" (12%; n = 13), and side effects (10%; n = 11). Among those who had been on ART for ≥6 months, 20% (n = 82/419) had virologic failure (VL >400 copies/ml). Reporting a TI was associated with a higher risk of VL >400 copies/ml: 43%(n = 43/100) among those reporting TI versus 12% (n = 39/319) among those not reporting TI(p <0.001). Controlling for time on ART, participants more likely to report TIs were unmarried (OR: 1.89; CI: 1.16-3.06), in a private clinic setting (OR: 2.67; CI: 1.55-4.62), and on EFV-based therapy (OR: 1.99; CI: 1.09-3.57).

Conclusions: TIs are fairly common in RLS, and likely underreported due to social desirability bias as evidenced by significant virologic failure, even among participants not reporting TI. Married participants had fewer TIs, echoing previous research on the importance of social support in adherence. Since "doctor told me to" could not be verified by chart review, this may indicate a need for better doctor-patient communication. Cost of therapy is still a significant reason for TI, arguing for structural interventions.

70042 Bringing ART Services to Peripheral-Level Health Facilities in Northern Uganda

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Introduction: ART has had a major impact on the health of people living with HIV/AIDS in Uganda. However, it has been provided for long in few highly-specialized congested and difficult-to access facilities like hospitals. This had the disadvantage that getting transport for patients from rural areas to a hospital was often difficult and prohibitively expensive, meaning many were unable to access ART or to do it regularly. Primary care facilities could deliver ART services nearer to patients' homes, but they often lacked adequate staff, technical capacity and infrastructure, including timely provision of supplies.

Description: Northern Uganda is a post-conflict area whose HIV prevalence rate (8.2%) is higher than the national average (6.4%). Starting from 2008, the Northern Uganda Malaria HIV/AIDS & TB Program (NUMAT) assisted selected peripheral health centers to receive government accreditation for ARV provision to address the HIV epidemic and the limited uptake of ART services in the region. This was attained through training of qualified staff in ART management; supplying ARV and other consumables following a regular schedule; organizing a periodic CD4 test outreach system to those facilities; and procuring the necessary equipment, stationery and furniture for ART provision and records management.

Lessons Learned: From October 2008 to September 2010, the supported 14 peripheral health facilities in the region have enrolled a total of 1,992 ARV clients, of which 109 were pregnant women and 133 children below 14 years of age. Almost 10,000 CD4 tests were provided to clients accessing those facilities for both clinical assessment prior to ARV enrolment and ARV follow-up. By the end of September 2010, the 12-month cohort that was enrolled registered treatment retention rate of 87%. Compared with only 4% in the whole country by end of 2009, the Program achieved that by September 2010 17% of all lower facilities in the region offered ARV services.

Recommendations: Our experience demonstrated that ARVs in Northern Uganda can be provided as an additional primary care intervention. Bringing ARV services to peripheral level facilities proved to be an effective method for patients to access HIV services nearer to their homes. As a result, a steady increase was observed in utilization of services, quality of clinical care, adherence to medication, and retention in care and, ultimately, in satisfaction of both clinicians and patients.

POSTER ABSTRACTS

70043 A Pilot Program of Health Worker- or Nurse-Provided Directly Observed Therapy for Nonadherent Youth with Perinatally Acquired HIV

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Introduction: Our HIV pediatric/adolescent care site has employed modified directly observed therapy (mDOT) and nurse DOT (nDOT) interventions for chronically non-adherent pediatric patients since 1998. We undertook a review of supervised adherence interventions to describe the outcomes of the program.

Description: We identified 21 episodes of intensive adherence support services (14 mDOT, 7 nDOT) for 18 subjects between 1998-2009. MDOT consisted of a health worker who visited the home once a day, 5 days/week. Nurse DOT visits occurred with the same frequency as ARV medication dosing, 7 days/week. Subjects were offered the intervention based on clinical judgement, and had no incentive to participate.

Lessons Learned: Mean age at initiation of intervention was 13 yrs; 11 were male, one was non-white Hispanic and all others were African American. Median viral load at enrollment was 4,059 copies/mL (range 1,116-89,072) for mDot and 22,280 copies/mL (range 99-98,000) for nDOT recipients. Median duration of mDOT was 5 months (range 1-21 months) and 16 mos for nDOT (3-132 months). In 10 interventions (7 mDOT, 3 nurse DOT), the recipient achieved viral suppression (plasma HIV RNA <75 copies/mL). Median time to reach suppression for mDOT was 47 days (range 8-250) and for nDOT 60 days (29-986). Viral suppression (<300 copies/mL) was maintained for a median of 126 days (14-644) for mDOT and 315 days (9-3857) for nDOT. Only four children remained undetectable until the intervention was withdrawn.

Recommendations: Supervised adherence therapy can improve viral outcomes but is not a bridge to independent, sustained medication adherence. Half of recipients who achieve viral control with assistance do so within 2 months. Supervised adherence therapy programs can succeed for select pediatric patients; improved criteria for targeting adherence support therapy is needed.

70050 Developing a Brief Adherence Intervention for HIV-Infected Persons in Estonia

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Introduction: There is little data on and experience with interventions for antiretroviral treatment (ART) adherence support for patients on ART in Eastern Europe.

Description: A needs assessment; literature review; focus groups; and interviews with key informants (care providers) were used to develop an ART adherence enhancement intervention currently being evaluated in Estonia The resulting Optimal Adherence Intervention Estonia (sOAI Estonia) is a 3-session individual ART adherence counseling targeting: 1) accurate information about ART (mechanisms of HIV and ARVs) and the development of mental imagery around it; 2) promotion of perceived sense of ease and efficacy in working ART regimen into the context of one's daily life and present life circumstances that may challenge drug use persistence; 3) identification and refinement of skills that promote ease of adhering to one's ART regimen across the diverse and challenges contexts. Accurate information and imagery is promoted via a flip chart at session 1, and support for adherence is provided with Next Step Counseling (NSC) - a strengths-based, client-centered approach that draws heavily from concepts and strategies found in Motivational Interviewing and reliance on personal relevance and context.

Lessons Learned: Training on sOAI Estonia resulted in strong buy-in and support for the approach and suggested that dissemination with 2 half-day trainings and subsequent boosters was feasible. Records collected as part of first sessions among participants suggest that the main facilitators of adherence included family/partner support, raising a child, routinization, and investment in self-care; and factors decreasing ease of adherence include side-effects, active drug use, food insecurities, and routine changes.

Recommendations: The intervention is currently being evaluated in a small-scale randomized controlled trial (control condition: standard-of-care) among 150 patients.

70051 Factors that Contribute to Adherence among People Living with HIV/AIDS in South Nigeria

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Background: Proper adherence to antiretroviral is important in preventing drug resistance; re-infection, reducing the viral load and improving the general well-being of HIV infected individuals. The study was conducted in South-south region of Nigeria. The purposes of this study are in two folds which are as follows: 1. To ascertain the factors that contribute to adherence among people living with HIV/AIDS in South-South region of Nigeria 2. Assess the knowledge of people living with HIV/AIDS on adherence to antiretroviral therapy to adherence.

Methodology: A cross-sectional study was carried in December 2010 among adult PLWHA in Calabar municipal local government. A bivariate analysis was done to determine the strength of relationship between adherence, level of education, gender and profession. A logic regression model was constructed with adherence dependent variable and other independent variables such as gender and support as predictors.

Results: About 52.1% of the respondents were adherent based on self reported missed dose in the last seven days. 91.3% of the participants (PLWHA) have good knowledge of the name of the ARV medicine prescribed. 86.9% of the participants have methods to remember time and recommendation to take their medication. 39.1% reported missing to take their ARVs more than twice. There was also association between the level of education, profession and reported adherence (Pearson coefficient of .27 and .3 respectively). The test of model of gender as predictor was not statically significant (P = .855). The test of model for support as predictor was statically significant (P = 0.05). Patients who did not get support are 2.5 times more to have missed there drug in the last seven days.

Conclusions: These results shows a need incorporate adherence counseling and psychosocial and economic support to HIV programs targeted at PLWHAs.

70053 Analysis of Two Different Strategies to Evaluate ART Adherence in Vertically Infected Children and Adolescents in Brazil

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Background: The Department of STD-AIDS and Viral Hepatitis of Brazilian Ministry of Health delivers antiretroviral medications to every HIV-infected citizen free of charge and drugs are dispensed by authorized pharmacies in monthly or bi-monthly visits. Nevertheless adherence is still a challenge, particularly among children and adolescents.

Methods: A multicenter national study among HIV vertically infected children and adolescents has been conducted which quantitative component includes: last result of viral load, response to adherence questionnaire evaluating ARV missed doses in the past three days and pharmacy records with dates of dispensation during the last twelve months. Considering undetectable viral load as the main goal of ART, the aim of this analysis is to evaluate results obtained with the other two tools (ART doses missed in the last three days and mean time between pharmacy visits) in respect to viral load measurements.

Results: 238 HIV vertically infected children and adolescents were included in this analysis: 80.3% (n = 191) are children and 19.7% (n = 47) are adolescents . 42.6% (n = 20) of adolescents had viral load control (below 50 copies/mL) at the moment of the study, whereas 55% (n = 105) of children had viral load control. 92.1% of the children's caregivers reported complete (100%) adherence to treatment. When adolescents responded the questionnaire 83% of them reported no ARV missed dosed in the last three days. Pharmacy deliver: 12.6% of children withdraw ARV drugs in intervals greater than 60 days; 10% of adolescents had similar delay. Among children, larger intervals between pharmacy visits tended to correlate with less control of viral load.

Conclusions: As in other series, response to adherence questionnaire was not sufficiently sensitive to predict control of viral load among vertically infected children and adolescents. Long intervals between pharmacy visits may signalize the existence of difficulties in accomplishing ideal treatment and should be routinely checked during clinical visits.

70056 The Effectiveness of PLHIV Peer Support Groups to Improve Adherence to ART in Resource-Poor Settings in Bangladesh

Nilufar Begum (presenting)

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Background: The main challenge of ARVs is that one has to take 95% of the pills to achieve the main goal of ART which is to suppress viral Load. Ashar Alo Society (AAS) formed in 1998 as a peer support group consisting of HIV-positive persons, their family members and supporters. ART program started in 2004 with 1 pregnant woman. After that ART services are run by different sources. On 1st December 2008, GFATM started ART program in Bangladesh through different peer support groups. Before the program started a number of strategies had to put in place to achieve the main goal of ART.

Methods: ART centers provide counseling, baseline investigations, OIs management; provide ART, side effects management etc. At least three ART adherence counseling is needed before initiation to ART. Regular follow up and monitoring is done by care givers, peer counselor, nurses, doctors and also monitoring officers. A comprehensive six months review was done for each member both in their families and ART centers. A self reported system, counting pill and monitoring checklist was in place to track members who have missed their doses.

Results: Out of total cumulative 915 PLHIV, total cumulative 324 patients received ART during the period of 2004-2010. Male: 168, Female: 97 and Children: 12. Total 47 patients died after receiving ART because they came late and could not cope with ART. 93% have more than 95% adherence levels. Few members gave statement to miss one dose for half to one hour delay. After starting ART, anemia, rash, hepatitis, and severe IRS developed within one month.

Conclusions: Adherence to ART is critical and a lot of strategies are needed to achieve the main goal of ART. Continuous peer support and family interventions are important in this area. PLHIV peer support groups are effective in improving adherence to ART.

70062 Finding Out of Care HIV-Infected Patients and Enrolling Them in Retention in Care Intervention Studies is Feasible in Public Hospitals

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Background: Interventions to retain persons in HIV care are needed, but finding persons out of care and enrolling them in studies is difficult. We are conducting a randomized trial screening and enrolling patients hospitalized at our public hospital. We report early data on the feasibility of finding and enrolling out-of-care patients in the hospital.

Methods: Eligibility criteria for the study are: age >17, able to provide informed consent and complete a baseline survey in English or Spanish, expected to be in the hospital at least one more night, not being discharged to an institutional setting, referred to Thomas Street HIV Clinic for follow-up care after discharge, and out of care. "In care" is defined as having a VL <400 copies/mL and having completed HIV primary care visits in 3 or 4 of the last 4 quarter-year periods. Persons not "in care," including persons diagnosed <1 year, were considered "out of care."

Results: 206 patients were screened between July 2010 and December 2010, representing >90% of patients hospitalized with HIV infection. 190 (92%) were "out of care," and 16 were "in care." 106 of the "out of care" patients were ineligible, most commonly because they were cognitively unable to complete informed consent or the baseline survey, were not expected to remain hospitalized at least one more night, or were discharged before screening was completed. Of the remaining 84 eligible patients, 63 (75%) enrolled, 6 declined enrollment, and 15 were discharged before enrollment. Overall, 33% of the "out of care" were enrolled in the study. Enrollment is proceeding to reach the target of 434 participants.

Conclusions: The vast majority of persons hospitalized with HIV are out of care, and the majority of eligible patients were enrolled in the study. Finding out of care HIV-infected persons and enrolling them in studies while hospitalized is feasible.

70063 Feasibility of a Test and Treat Approach in Routine HIV Care

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Background: Test and treat strategies depend on viral suppression (VS) shortly after diagnosis, but few studies assess outcomes from the time of diagnosis. We sought to determine success rates for linkage to care, retention in care, receipt of ART, and VS (<400 copies/mL) one year after diagnosis for patients cared for in routine settings.

Methods: STEPS was a prospective observational cohort study of patients newly diagnosed with HIV infection at public facilities in Houston, TX. Participants were enrolled within 3 months of diagnosis and excluded if they had already completed an HIV primary care visit. Participants were surveyed at baseline and every 3 months. Medical record review was done at 2 years at all sites used by the participant, plus nearly all Ryan White clinics in the area and VA, accounting for about 90% of the care of uninsured patients in Houston.

Results: There were 183 evaluable participants; median CD4 cell count 200 cells/mm^3. 78% attended a visit within 90 days of diagnosis. 32% attended a visit in all 4 quarter-years after diagnosis. 56% of the 132 participants known to be alive and in the Houston area at 12 months attended visits in both the 3rd and 4th quarter-years. 65% of participants had baseline CD4 <350 cells/mm^3, and 73% of those received ART within one year. By 12 months, 32% of all participants had VS. 132 participants were known to be alive and in Houston at 12 months, 42% had VS. 108 participants had a 12-month VL done, 54% had VS.

Conclusions: A substantial portion of patients does not suppress virus one year after diagnosis due to losses at all steps of care. A test and treat model, with the goal of a low VL in all patients, will require significant additional resources to link, treat, and retain patients in care.

70067 Development of Community-Based Strategies to Improve Retention in Care Using Feedback from Focus Groups of Persons Living with HIV in Rural Ethiopia

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Introduction: In Ethiopia, approximately 25% of persons living with HIV (PLWH) who started on antiretroviral therapy (ART) were no longer in care after 12 months. Those living in rural settings may have particular challenges in maintaining ART adherence and retention in HIV care; understanding such barriers is critical in designing interventions to reduce them.

Description: To help inform community-based interventions for PLWH in rural southern Ethiopia (Arba Minch), focus groups of 11 male and 10 female PLWH were conducted in Amharic by trained Ethiopian facilitators. Participants were recruited from Arba Minch Hospital's HIV Clinic, and asked about: the best way to treat/manage HIV; likes and dislikes about the HIV clinic; challenges managing HIV at home; other challenges encountered in their communities; barriers to taking medication regularly; barriers to attending clinic regularly; and strategies to help reduce these challenges/barriers.

Lessons Learned: Barriers to continuing retention in HIV care included: Distance to clinic, lack of money for transportation; Stigma, not wanting to be seen by friends/neighbors at the clinic; Feeling of being cured/treatment no longer needed; Long waiting times at clinic; Lack of continuity at clinic: different providers/patient records unavailable; Competing priorities (e.g., child care, work); Lack of awareness and knowledge about ART; Drug side effects; Lack of food /belief certain foods needed to take ART; Use of alternative/religious treatments (e.g., holy water); Feeling hopelessness, lack of confidence in HIV treatment; and Alcohol consumption/use of other substances.

Recommendations: Using participant suggestions to help reduce these barriers, we designed and are implementing a program of community-based adherence support workers (from the PLWH's neighborhood/village) to provide: (1) Education on HIV treatment/ART (including side effects, adherence); (2) Counseling and social support; (3) Development of specific strategies to reduce retention barriers; (4) Improved linkage to the HIV clinic, including cell phones to discuss patient concerns.

POSTER ABSTRACTS

70068 Impact of Distance from Treatment Center on HIV Outcomes

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Background: In disease states such as substance abuse, mental health, and cancer, distance from treatment has demonstrated negative effects on resource utilization and patient outcomes. In HIV patients, residential distance from clinic has been implicated in qualitative studies as a factor in non-adherence, but has shown no significant impact on patient outcomes. Published quantitative investigations do not necessarily reflect the challenges to an indigent suburban civilian population in the Southeastern United States. The purpose of this study is to quantify the effect of patient distance from HIV care on virologic and immunologic outcomes of patients of the AIDS Research and Treatment Center of the Treasure Coast (ARTCTC). A secondary objective is to support decision-making regarding location-based outreach programs for ARTCTC patients.

Methods: We conducted a retrospective study using data from ARTCTC. The distance from the patient home to the health care facility was measured in miles using Google Maps. Logistic regression was used to evaluate the relationship between distance from the clinic and viral load or CD4 T-cell count. A multivariate analysis was conducted to determine the impact of covariates including age, gender, ethnicity, and marital status on the primary outcome.

Results: When adjusted for ethnicity, distance was not correlated with patient viral loads, but did have a significant relationship with CD4 count. Patients who live closer to the clinic were more likely to have lower CD4 counts. A full analysis will be available by IAPAC conference date.

Conclusion: The patient's distance from clinic did not appear to have an adverse relationship with CD4 counts. Preliminary results suggest the ARTCTC has minimized potential transportation barriers for many of their most critical patients by its strategic location in the community served. Further conclusions will be based on final analysis, and will be used by ARTCTC to support funding allocation to increase patient adherence.

70070 Sexual Risk Behavior and ART Adherence in the MACH14 Study

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Background: Non-adherence to safer sex and non-adherence to ART can each have adverse health consequences for HIV-infected individuals and their sex partners, but little is known about the association of these behaviors with each other. This "dual risk" has potential negative public health consequences since non-adherence can lead to the development of resistant virus that can then be transmitted to uninfected partners.

Methods: Among participants in the Multi-site Adherence Collaboration in HIV (MACH14) we examined, at study baseline, the association between the frequency of unprotected sex (assessed by self-report) and ART adherence (assessed by MEMS) among the sexually active participants in the five studies (N = 459) that collected sexual risk behavior. The bivariate association between sexual risk and ART adherence was assessed by Pearson correlations; subsequently ANOVAs were used to evaluate the role of demographic characteristics, and depression and substance use in explaining the "dual risk" outcome (sexual risk and adherence).

Results: Among participants who had been sexually active, more unprotected anal /vaginal sex was associated with poorer ART adherence ($r = -.12$, $p = 0.01$ for the overall sample; $r = -.29$, $p < 0.001$ for heterosexual men). After adjusting for demographic variables the association became non-significant for the overall sample ($p = 0.157$), but remained significant in heterosexual men ($p = 0.004$). Substance use, but not depression, accounted for much of the variance in the association between sexual risk and ART adherence.

Conclusions: Some HIV-infected people who are having difficulty adhering to ART are also engaging in risky sexual behaviors (possibly in the context of substance use), and therefore may benefit from counseling about these risk behaviors. It is important that we more fully understand the factors associated with this "dual risk" (i.e., unprotected sex and non-adherence). We must also identify procedures to screen for these risk outcomes, and develop interventions, appropriately tailored to specific populations, that can be integrated into routine clinical care for people living with HIV. This will become increasingly important in the context of expanded treatment roll-out globally, including new recommendations for ART initiation earlier in a patients' disease course (i.e., "Test and Treat" paradigms).

70079 The Relationship between Daily Organization and Adherence to Antiretroviral Therapy: A Qualitative Perspective

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Background: Prior research has identified that incorporation of antiretroviral (ARV) therapy into a daily schedule is a method for improving ARV adherence. However, questions remain about the extent of the importance of structured daily life in an individual's ability to adhere to therapy. In this study, we investigate the relationship between daily organization and ARV adherence, with a focus on the degree of structure in daily routines.

Methods: We conducted in-depth semi-structured qualitative interviews with HIV-positive adults (n = 14) who were in the assessment only control arm of a randomized controlled trial. Participants were asked for a detailed description of their typical daily routine and were queried about the number of missed ARV doses in the past month. Daily routine data were classified as highly organized, somewhat organized, and not organized, based on the level of detail provided.

Results: There was a wide range in the level of structure of daily schedules. Individuals who were highly organized were more likely to report higher (85-100%) ARV adherence. Conversely, those who had no specific daily schedule uniformly reported 0% adherence, having lost their medications, or discontinuing therapy. Even in the presence of homelessness, the existence of a single recurring daily routine (such as daily methadone clinic appointments) was associated with >70% adherence.

Conclusions: These data underscore the impact of daily structure and organization on an individual's ability to adhere to therapy. The linking of medication-taking behavior to any fixed daily activity has the potential to assist HIV-positive individuals attain higher levels of adherence, even among those with chaotic lifestyles stemming from homelessness, mental illness, or substance use. Details of an individual's daily schedule can be highly informative and valuable for health care providers in tailoring a regimen to fit this routine or in assisting patients in selecting the timing of their dose.

70080 Educational Attainment of Perinatally Infected HIV-Positive Adolescents

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Background: Research on educational attainment conducted on children with chronic diseases such as sickle cell anemia and hemophilia show children with these diseases have lower educational attainment then their healthy peers. Little research has been conducted on the educational attainment of perinatally HIV-infected adolescents. We conducted a retrospective study to determine the current educational attainment of perinatally HIV-infected adolescents followed at Stony Brook University Medical Center in NY.

Methods: This study targeted all perinatally HIV infected adolescent patients 18-28 years expected to be attending post high school (PHS) education in 2010. Using two-sample z-test of proportions, the educational attainment level of these patients was analyzed and compared with their peers in NY State and across the nation. Logistical regression was utilized to determine the relationship between HIV treatment characteristics and PHS educational attainment.

Results: 37 patient charts were reviewed. The mean age 20 years (17-28), 60% male, 57% Black, 41% White, and 3% Asian. Additionally, 19% were Hispanic. Current HIV treatment characteristics: 87% are on ARVs with 72% fully adherent to these medications, 50% have CD4+ counts $\geq$500 cells/mm^3, 39% have an undetectable ($\leq$50 copies/mL) viral load. 25% were attending PHS education, lower than their peers in New York State (81%) and across the nation (69%) (P <.05). CD4 count $\geq$500 cells/mm^3 was marginally associated with PHS education attendance. While the odds of attending PHS education were greater with lower viral loads and increased ARV adherence, these data were not significant. There was no association between current patient living arrangement (biological, adoptive, relative home, or other) and PHS education attendance.

Conclusions: Like children with other chronic diseases, perinatally HIV-infected adolescents also have lower educational attainment compared to their healthy peers. Other factors including age at nadir CD4, past CDC diagnoses, and family and social characteristics will need to be investigated.

70081 Responses to Barrier Assessment Tool (BAT) Guide Pharmacist-Directed Interventions to Improve Adherence to HAART Regimens

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Background: Patients with HIV/AIDS must maintain high medication adherence to succeed with highly active antiretroviral treatment (HAART). A program to identify barriers and improve adherence combined development of a comprehensive questionnaire with pharmacist-to-patient outreach.

Methods: Patients on HAART regimens were identified in a national pharmacy benefits claims database. HIV-trained pharmacists called patients whose medication adherence ratio (MAR) was <90, indicating adherence <90%. Pharmacists administered the barrier assessment tool (BAT), a questionnaire covering clinical, social, and personal issues. According to patients' responses, pharmacists offered specific education and suggestions to improve adherence.

Results: Of the 934 patients who consented to the questionnaire, 412 (44%) reported 1 or more barriers, for a total of 1406. Average MAR for the group was 75.5. Barriers most often reported (cost, N = 286 [69.4%]; forgetting, N = 274 [66.5%]; side effects, N = 198 [48.1%]) were associated with average MAR of 75.4, 76.2, and 76.2, respectively. Other important barriers included drug-drug interactions (N = 156 [37.9%]) and difficulty of access to pharmacy (N = 113 [27.4%]), with average MAR of 75.4 and 79.9, respectively. In terms of medication adherence, the lowest MAR, average 47.9, was noted in patients who did not understand the need for medication or why it was prescribed (N = 5 [1.2%]).

Conclusions: Responses to the BAT indicated that lowest levels of adherence to HAART regimens were associated with lack of understanding or denial of the disease and treatment. Patients may require more intensive education about HIV/AIDS and the importance of medication adherence, and may need to be more closely evaluated for signs of denial. Overall, a high percentage of barriers resulted in low MARs, leaving patients at risk for developing drug resistance. The BAT can be a valuable tool to help identify barriers and allow pharmacists to work with physicians on improving adherence, leading to better outcomes and prolonged periods of undetectable HIV.

70084 Can Substance Use and Depression Account for Race/Ethnicity Disparities in ART Adherence? A Closer Look at Findings from the MACH14 Study

Jane M Simoni[1] **(presenting)**, Ira Wilson[2], Kathy Goggin[3], Nancy Reynolds[4], Robert H Remien[5], David Huh[6], David Bangsberg[7], Honghu Liu[8]

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Background: Brazil was one of the first developing countries to guarantee universal and free access to antiretroviral therapy and specialized health services. The elimination of HIV vertical transmission is a concrete possibility in Brazil, considering national policies as well as the available scientific evidence, if all recommendations are followed. In São Paulo state, considering the period from 1997 to 2007, the number of reported AIDS cases due to vertical transmission decreased by 86.1% (418 to 58).

Methods: This retrospective cross-sectional study, in São Paulo (41 million inhabitants), used secondary data from HIV-infected pregnant women diagnosed in 2006 and their children were followed until their HIV diagnosis.

Results: There were 982 exposed children analyzed from mothers diagnosed in 2006. The transmission rate was 2.7% (1.86:3.94). Majority of mothers (59.6%) were diagnosed with HIV before antenatal period; nonetheless, 35.2% were diagnosed during antenatal period and 4.2% during delivery. The majority attended antenatal care (94.3%) and had six or more consultations (79%). Children exposed to HIV-infection had the following characteristics: mother with less than six antenatal visits [Prevalence Rate (PR)-95% CI: 3.04 (1.09;8.50)], mother not receiving antiretroviral prophylaxis [PR: 5.71 (2.70; 12.06)], mother not using antiretroviral at intrapartum moment [PR: 4.88 (2.31; 10.29)], child not taking prophylaxis [PR: 10,72 (4.05; 28.34)] or taking prophylaxis for less than six weeks, and breastfeeding [PR: 15.10 (7.68; 29.69)]. Although the other variables did not present statistical significance, there is a suggestion of increased infection when the mother is divorced or separated, age <16 years, were injection drug users, lack of antenatal care, were diagnosed at delivery (antenatal care as protective factor) and progressed to death.

Conclusions: Mother-to-child HIV transmission has declined dramatically and the remaining cases present mothers with a profile that includes a bad adherence to the control strategies. Remaining challenges include universal prenatal care and adherence to antiretroviral prophylaxis/therapy.

70088 A Comparison of Logistic Generalized Estimating Equations with Planned Contrasts versus Growth Curves for Evaluating Antiretroviral Adherence Interventions

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Background: Interventions aimed at improving HIV medication adherence may be being dismissed as ineffective due to statistical methods that are not sufficiently sensitive. Commonly used cross-sectional techniques, such as t tests, may be inaccurate due to increased risk of chance findings and invalid assumptions of normal distribution. The combination of logistic generalized estimating equations and robust standard error correction may be the most accurate approach for analyzing percentage data in longitudinal studies.

Methods: This is a secondary analysis of data collected as part of an NIH-supported randomized controlled trial conducted in an outpatient HIV clinic in Seattle, WA (N = 224) to evaluate the effectiveness of pager support and peer support on HAART adherence. We compare three statistical approaches to assessing intervention effectiveness: classical ANOVA, logistic GEE with planned contrasts, and logistic GEE with growth curves.

Results: In the ANOVA models, the effect of peer support fluctuated between -9 and +6% without reaching statistical significance, a pattern suggestive of a null intervention effect. In the logistic GEE analysis with planned contrasts, peer support was associated with a smaller drop in adherence from baseline to 3 months compared with standard of care (-2 vs. -12%, p = .01). However, the non-significant results at 6 and 9 months (p's >.05) indicated that the short-term benefits at post-intervention were not maintained at follow-up. In contrast, the growth curve model suggested that adherence among those who previously received the intervention continued degrading while those receiving the standard of care were stable (p = .03).

Conclusions: Collectively, logistic GEE with planned contrasts and growth curves identified intervention effects that were missed by a classical ANOVA approach. However, a longitudinal analysis can average over data in unintended ways, potentially leading to mistaken conclusions. The choice of statistical method can mean the difference between evaluating an intervention as effective, ineffective, or even iatrogenic.

70090 A Culturally Adapted Intervention to Treat Depression and ART Nonadherence on the US-Mexico Border: Feasibility and Initial Results from a Pilot RCT

Jane M Simoni[1] **(presenting)**, John S Wiebe[2], John A Sauceda[2], David Huh[1], Virginia Longoria[2], Giselle Sanchez[2], Carlos A Bedoya[3], Steven A Safren[3,4]

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Background: The sister cities of El Paso, Texas, and Ciudad Juarez, Chihuahua, situated on the US-Mexico border face a potential explosion in the HIV epidemic. Although antiretroviral therapy (ART) is increasingly available and accessible, preliminary studies indicate that poor adherence and depressive symptomatology detract from its potential success.

Methods: We culturally adapted Safren's empirically supported cognitive-behavioral therapy program for adherence and symptoms of depression (CBT-AD) and then evaluated its feasibility and initial efficacy. Participants were clients of Mexican descent at a community-based HIV primary care clinic in El Paso, Texas, who reported depressive symptomatology and less than optimal adherence. Intervention participants received at least 12 sessions of CBT-AD in English or Spanish over 6 months; control participants received the clinic's usual care. Assessments were conducted at baseline, post-intervention, and 9-month follow-up and included self-reported adherence according to the visual analog scale (VAS), the Beck Depression Inventory (BDI), and the clinician-administered Montgomery-Asberg Depression Rating Scale (MADRS). N.B. Results reported here are based on data from 16 participants; findings from the full cohort of 40 at post-intervention will be available for presentation at the conference.

Results: The intervention proved to be highly feasible, with much interest and low attrition though variable attendance. Challenges included literacy and language issues, with cognitive restructuring and thought records homework requiring adaptation. Repeated measures ANOVAs indicated improvement from baseline to post-intervention was greater in the intervention than the control arm for all three outcomes: BDI (intervention M/SD = 27.4/9.6 to 14.3/9.5 vs. control 16.0/4.7 to 13.0/6.7), $F_{(1,13)} = 6.47$, p = .025; MADRS (intervention 28.8/9.4 to 18.2/12.3 vs. control 21.0/5.2 to 23.6/10.6), $F_{(1,13)} = 4.03$, p = .066; VAS (intervention 81.4/19.4 to 89.3/11.0 vs. control 95.4/7.1 to 81.6/20.4), $F_{(1,12)} = 3.60$, p = .080.

Conclusions: The culturally adapted CBT-AD merits further evaluation as a tool to treat depression and non-adherence among Latinos on the US-Mexico border.

70091 Post-Traumatic Stress and Depressive Symptomatology are Barriers to ART Adherence in Latinos on the US-Mexico Border

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Background: People living with HIV/AIDS suffer from disproportionate rates of post-traumatic stress (22%-64%) and depression (5%-40%), which negatively impact adherence to antiretroviral medication. The purpose of this study was to assess the extent of psychological distress in a HIV-positive border population and to evaluate the independent role of post-traumatic stress in predicting nonadherence.

Methods: We recruited a non-probability sample of 216 HIV-positive men and women of Mexican descent at an HIV primary care clinic on the US-Mexico border. The one-time paper-and-pencil assessment included the 30-day visual analog scale (VAS), the Simplified Medication Adherence Questionnaire (SMAQ), the HIV Treatment Adherence Self-Efficacy Scale (HTASES), the Beck Depression Inventory 1A (BDI), and the Post-Traumatic Stress Disorder Checklist-Civilian Version (PCL-C).

Results: Over half of our sample endorsed moderate symptoms of PTSD clusters (a) re-experiencing the traumatic event (53.7%), (b) avoidance/numbing behaviors (60.2%), and (c) hyperarousal (63.5%), similar to levels in other HIV populations. PCL-C scores were significantly associated with the SMAQ ($r = .33$, $p < .01$) and the VAS, ($r = -.29$, $p < .01$). BDI scores were also associated with nonadherence assessed by the SMAQ($r = .28$, $p < .01$) and the VAS ($r = -.24$, $p < .01$). In a hierarchical regression analyses, PCL-C scores predicted SMAQ nonadherence ($R\lambda^2 = .03$, $p = 01$) and VAS adherence ($R\lambda^2 = .03$, $p = .04$), even after controlling for BDI scores. Both PCL-C ($r = -.37$) and BDI ($r = -.34$) scores were negatively associated with treatment adherence self-efficacy (p's $< .01$).

Conclusions: Post-traumatic stress was highly prevalent in our US-Mexico border sample and contributed to nonadherence over and above depression scores. More research is needed to identify the specific stressors leading to PTS in this population and mediators of stress and nonadherence to inform intervention strategies.

70092 Developing SEARS (Simple Electronic Adherence Reminder System)

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Introduction: Tools for providing electronic adherence reminders (text messages or emails) are lacking. A simple, low cost solution can be used by any clinic to send a customized, daily message to patients. Patients are very satisfied with such a system. The presentation will include a description of the pilot project, a demonstration of the system, and a discussion of what would be necessary for other clinics to use the system.

Description: Seventeen patients were enrolled in a pilot project at UCSF to determine the feasibility of using text messaging to increase adherence in highly active antiretroviral therapy (HAART). The pilot project also assessed patient satisfaction. SEARS was built using Microsoft Office tools, a publicly available email service, and existing SMS (text messaging) gateways. The system was deployed on an existing PC with software already purchased; therefore, the incremental cost for SEARS was zero dollars. Subsequent to a successful proof of concept, key HIV clinic staff at UCSF and elsewhere were interviewed to determine the non-financial barriers to making greater use of electronic reminders in their practice.

Lessons Learned: SEARS required minimal maintenance during the trial period. Initially, frequent restarts of the software were necessary due to the use of Microsoft Outlook. A simple redesign of the mail client on the PC led to greater than 98% uptime and eliminated the need for manual intervention upon failure. After redesign, the primary failure mode were campus wide power outages. Patient satisfaction was high and SEARS remained operative after the study ended.

Recommendations: Electronic reminders should be more widely deployed as part of a suite of HIV treatment adherence tools. SEARS is available for free by request to the author. Available documentation includes the software, database templates (in Excel), and a user's manual.

70097 Impact of a Multifaceted Intervention on Promoting Adherence to Screening Colonoscopy among HIV-Positive Patients

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Background: Colorectal screening studies among HIV-positive patients have consistently shown lower screening rates and higher prevalence of neoplastic lesions.

Methods: A retrospective prospective design assessed medical records of 400 patients 50 years and older seen at least two times in the past 12 months with scheduled appointments between 9/18/2009 and 12/18 2009. Records were evaluated for providers' referrals ever made for screening colonoscopy, within six months prior to the start of the study and outcomes. Records of patients eligible for screening were flagged for referral. A randomized trial of colonoscopy procedure educational video and discussion of colonoscopy decision tree compared to usual care evaluated patient adherence to screening and quality of bowel preparation.

Results: Blacks 276 (69%), Hispanics 113 (28.25%), White 11 (2.75%), median age 55 (50-80), M248 (62%), F152 (38%). 1-2 comorbidities 265 (66.25%), referred at least once 177(44%). Screening rate 36.6% (63/177). Polyps 30.6% (19/63), adenomatous 8 (44.4%), Providers referred 61 (15.25%) patients within 6 months prior to the study. Of 229 charts flagged, 40.2% (92/229) patients were referred compared to 61 (15.25%) P = 0.000. Randomized group (N = 33) with median age 53 (50-75), 36.4% (12/33) reported great, 6.1% (2/33) very great perceived susceptibility to colon cancer at current age, whereas 15.2% (5/33) small, 18.6% (6/33) very small. Intervention 17 (51.5%), usual care 16 (48.5%), M 17 F16. Screening rate 51.5% (17/33), intervention 70.6% (12/17) vs usual care 29.4% (5/16) P = 0.024. Intervention group reported Self-Efficacy of no difficulty going through screening 52.9% (9/17) P = 0.021 and had good bowel preparation 76.9% (10/17).

Conclusions: This first study integrating patient decision support and provider reminder with usual screening colonoscopy referral process, may improve screening adherence among HIV population. Further research is needed.

70098 Validity of Unannounced Phone-Based Pill Counts for Monitoring ARV Adherence

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Background: Home-based unannounced pill counts are a valid objective measure of adherence. Phone-based unannounced pill counts are logistically more feasible. Previous validation studies have been conducted in only a few populations and settings (e.g. Atlanta). The purpose of this study was to replicate and expand on previous phone-based pill count validation studies.

Methods: Patients received an unannounced home-based pill count within a few minutes after an unannounced phone-based pill count. Phone-based counts occurred first, and patients did not know when/if they would receive a home-based count. We used correlations, intraclass correlations (ICC) and coefficient Kappa to quantify concordance between phone- and home-based pill counts. Percentage of pills taken was calculated by subtracting number of pills counted from the number of pills expected (based on prescription date) and categorized into 95% or higher, 80% - 95% and less than 80%.

Results: There were 84 patients. Of these, 84% were male, 55% were white, and 27% were black. Ages ranged from 23 to 64 with 82% 40 and older; 64% had CD4+ nadir <200 cells/mm^3, 29% between 200 and 350 cells/mm^3, and 6% greater than 350 cells/mm^3. Patients were taking one (25%), two (18%), three (44%), or four or more (13%) medications per day. There was perfect concordance between phone and home-based counts for 88% of all counts. The ICC was 0.999. The Spearman correlation for each patient's first medication was 0.98 and for all medications it was 0.99. Kappas summarizing concordance between adherence categories ranged from 0.97 to 1.0 (96% - 100% agreement) by drug, and the overall Kappa was 0.97 (99% agreement) across all drugs.

Conclusions: Findings from unannounced phone- and home-based pill counts are very similar. Unannounced phone-based pill counts are a valid and feasible method for monitoring adherence to HAART regimens.

POSTER ABSTRACTS

70099 Challenges to Accurate Assessment of Patient Adherence in India

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Background: Accurate assessment of patient adherence has increasingly complex measurement methods and methodologies to interpret patient behavior. Resource-limited settings also present challenges in data collection and assessment. This study presents preliminary data drawn from an ongoing adherence intervention being conducted in Northern India and examines analytic challenges of accurate assessment.

Methods: Patients (n = 80) were recruited from the Post Graduate Institute for Medical Education & Research in Chandigarh and randomly assigned to a 3 month intervention designed to enhance ARV adherence or the standard of care (SOC) and assessed monthly for 6 months. Participants were primarily male (70%, female 30%) with extremely low income and mean age of 37, the majority having 4-9 years of education. Measures of adherence were drawn from prescription refill, self report, visual analogue scale, pill count, viral load (VL) and CD4 count.

Results: Baseline data indicated only 1% of participants reported less than 100% adherence in the last 4 days, 5% non adherence over 7 days, 25% non-adherence over the previous 3 months, and 15% treatment interruption in the last 12 months. In contrast, 38% of participants were adherent by pill count, 28% having missing pills and 20% extra pills within one month. Mean CD4 count was 260 cells/mm^3 + 124 and VL was 4992 ± 43030 (78% were undetectable). Self report was not correlated with pill count, CD4 count or VL. At 3 months, self report was not associated with pill count, CD4 count (297 cells/mm^3 + 146) or VL (5879 + 35179). Intervention condition participants had a non-significant trend in increased CD4 count at 6 months (F = 1.25, p = .26).

Conclusions: Results support the development of strategies to enhance self report and accurate adherence assessment. Pill count, refill and viral load may be most useful for accurate appraisal.

70100 Assessment of Usual Care in MACH14

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Background: Randomized control trials (RCTs) include what is commonly called usual care assuming that participants receive this care regardless of the study arm to which they have been randomized. However, this may not be the case in studies using other designs. Describing usual care and how or whether that care changes over the length of the study is important.

Methods: This descriptive study examined usual care within MACH14, a multi-site collaboration on ART adherence. The sample included the 16 studies within MACH14. Investigator responses to a usual care questionnaire were used to describe the means of usual care assessment, timing of assessments, frequency of monitoring, and the specific components of usual care that were monitored. Content analysis was used to examine the qualitative data.

Results: Twelve of 16 studies in MACH14 were intervention studies. Five of 15 studies (33%) assessed usual care; all 5 were intervention studies. A form for collecting quantitative data was used in each of the 5 studies; most of the studies also included a qualitative assessment. Usual care was defined as procedures provided to all patients, standard clinic care, comparison group, or standard patient education. The 5 studies assessed usual care at the beginning of the study; two assessed usual care throughout at either 3 or 6 month intervals. All usual care assessments had patient education focused on HIV, HIV medications, and medication adherence. Other areas assessed were referrals, laboratory protocols, physical examination, and adherence monitoring.

Conclusions: These findings demonstrate that usual care was assessed in only one-third of the sample even though three-fourths of the studies were intervention studies. Most assessments occurred only at the beginning of a study. Given that changes in HIV/AIDS treatment guidelines can occur, monitoring usual care throughout a study is recommended. Changes in treatment guidelines may alter the usual care provided and thereby affect the intervention being tested.

70102 Adherence to Psychiatric Medication is Associated with Viral Suppression Among IDUs on HAART

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Background: Former or current injection drug users (IDUs) not uncommonly have co-occurring psychiatric conditions. While attention has been given to IDUs' access to mental health care, few studies have examined their adherence to psychiatric regimens and its role in effective HIV treatment. This study examined the association between adherence to psychiatric medication and viral suppression among IDUs on highly active antiretroviral therapy (HAART).

Methods: Former or current IDUs on HAART (n = 383) were clinic and community sampled; 78% were enrolled in an academic HIV care clinic in an urban epicenter. Logistic regression with used. Adherence was defined as any missed pills in the prior 7 days.

Results: Among participants, 50% were current heroin or cocaine users, 39% female, 85% non-Hispanic Black, and 70% had an undetectable viral load (UVL). 37% were currently taking psychiatric medication, primarily those prescribed for depressive, anxiety or psychotic symptoms, of whom 26% were non-adherent. Adherence to psychiatric medication was only modestly associated with adherence to HAART (p = .04). Adjusted results indicated that those who were adherent to psychiatric medication (versus those non-adherent or not taking psychiatric medication) had more than twice the odds (AOR = 2.3) of viral suppression, even after adjusting for current drug use (AOR = 2.1), frequency of HIV primary care visits, depressive symptoms, and other confounders, which did not retain signficance in the model.

Conclusions: The findings suggest the importance of assessing adherence to psychiatric medications as well as HAART in examining therapeutic impact. Further studies are needed to explore ways to promote psychiatric adherence in this population highly vulnerable to failed HAART.

70104 Psychosocial Variables Related with Antiretroviral Therapy Adherence in Mexico

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Background: Several psychosocial variables have been related to adherence to antiretrovirals. Little research has been done to try to explain medication adherence in people living with HIV in Mexican populations. The purpose of the present work was to assess psychological variables in a low socioeconomic status group of patients from a public hospital in Atizapán, Mexico, and understand their relationship with adherence behaviors.

Methods: A convenience sample of 106 (68 men and 38 women) participants were recruited on their monthly appointment ant a HIV Clinic in an urban area near Mexico City. Measures: The instruments used on this cross-sectional study were a socio-demographic questionnaire, a translated and modified version of the Adherence to Combination Therapy Questionnaire (AACTG), the Spahis Version of the ART related information, motivation, and behavioral skills (the Life Windows ART Adherence Questionnaire; LW-IMB-AAQ LifeWindows Project Team, 2006), the CES-D Scale: A Self-Report Depression Scale for Research in the General Population, and blood tests to establish CD4 cell counts. Data analysis: Pearson correlation and x2 difference tests were used to analyze the variables from the study.

Results: 60% of the participants had an annual income of approximately $3,500 US dollars, 60.6% had at least one child, 44.2% were single, 69.8% lived with their families, 68.9% had some kind of job, 89.6% of the patients had undetectable viral loads. Preliminary analysis show that patients had adequate levels of motivation, information and behavioral skills, but adherence was not related to any of the variables. As a group, no difference was found between men and women except for depression symptoms which were significantly more reported by women (R = .301, p = .05) .

Conclusions: Mexican women could be at high risk of depression. There is a need to explore additional variables related with adherence in this population. To reach appropriate conclusions non-adherent patients must be included in future research.

70112 Adapting an Evidence-Based Adherence Intervention for use in China

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Background: As the HIV/AIDS epidemic expands across China, the Ministry of Health has responded with a program of free treatment. However, patient adherence presents a significant challenge. Evidence-based interventions are limited and were developed for use in different social, cultural, and economic environments.

Methods: To adapt a theoretically driven medication adherence intervention which demonstrated efficacy in a randomized clinical trial conducted in the United States to the Chinese cultural and social context we used ADAPT-ITT, a prescriptive method for adapting evidence based interventions. The eight sequential steps of this method are: Assessment, Decision, Administration, Production, Topical Expert Review, Integration, Training, and Testing. Data are collected at each step using qualitative and quantitative methods. The Assessment phase included cross sectional and prospective studies of adherence rates and correlates in the target population. In the Decision phase, an intervention was selected for adaptation. The Administration phase comprised a demonstration of the intervention for Chinese colleagues followed by discussion of its relevance in China. A plan for adaptation was produced in the Production phase, including identification of essential core elements and key characteristics. Patients, family members, and clinicians served as Topical Experts and their comments were Integrated into the intervention.

Results: Self-reported adherence in the target population was <90% for 20% of subjects and was significantly associated with current heroin use (OR = 3.5; 95% CI 1.5, 8.1; p = 0.002). Stigma, family, and guilt were identified as key themes to be addressed in the intervention. The intervention selected for adaptation was nurse home-visits guided by the educational philosophy of Paolo Friere. The final adapted model modified the content of the home visits to emphasize family participation, less frequent visits, and group activities.

Conclusions: In spite of significant sociocultural differences, it is possible to adapt evidence-based interventions using a structured approach.

70116 Is The Juice Worth the Squeeze? The Feasibility of Interactive Voice Response Surveys (IVRS) to Report Adherence to Study Protocol in a High-Risk, Resource-Poor Area

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Background: Interactive Voice Response Surveys (IVRS), administered via cell phones, are being evaluated for self-reporting behavior in clinical trials in developing countries, supplementing more traditional reporting methods. Benefits of IVRS include direct data entry and real-time data transfer, although the software is costly. The feasibility of IVRS in resource-poor settings has yet to be fully examined.

Methods: 267 female sex workers who participated in a four-month vaginal microbicide feasibility study in Nellore, India were randomized to either paper diaries (n = 134) or IVRS (n = 133) for reporting daily placebo gel use and sexual behavior. Those in the IVRS arm were given cell phones and received daily calls (during a time frame they selected) to record number of sex acts, number of partners, and gel and condom use. The diary contained the same four questions. At exit, participants in the IVRS arm reported challenges to answering daily calls.

Results: 56% of women in the IVRS arm and 52% in the diary arm completed all four study visits (p = 0.5). 70% of the diary days were completed, but only 16% of the daily IVRS calls were answered (p = 0.00); however, it is unknown if the dairies were actually filled-in daily. Primary reasons for unanswered calls were (1) being without the phone (96%), (2) the phone was not charged (76%), and (3) being unable to hear the questions (75%). Technical issues related to non-customizable IVRS software and local phone networks further contributed to low compliance. The cost of implementing IVRS for this study, excluding staff costs, was around $15,000, compared to less than $1000 for the diaries.

Conclusion: IVRS performed poorly in this study despite targeted counseling. Given the costs of IVRS, more feasibility research in diverse populations and the further development of customized software are needed prior to wide introduction.

70119 Impact of Caregiver Relationship on Pediatric Adherence

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Background: Counseling the pediatric patient on adherence is a challenge because most are still too young to adequately comprehend. Thus most often adherence of the pediatric patient is in the hands of the caregiver and the nature of the relationship between the patient and the care giver could undermine it. To this end many have suggested for better adherence children should live with parents. This study examined the impact of caregiver relationship on pediatric adherence.

Methods: A survey was employed using a six component adherence questionnaire. Pediatric patients in 19 AIDSRelief ART sites in Nigeria and their caregivers were interviewed to determine level of adherence using 3months, 6months, and 12 months missed appointments recall and a one week and one month missed ARV doses recall. Caregiver relationship was determined by the question "who is the primary care giver for the child" and categorized into parents, other adult (relative), other adult (not related) and self. Data was analyzed with S.P.S.S 17.0. One way Anova was used to determine statistically significant differences in missed appointments and missed doses by type of relationship.

Results: The 263 respondents were 143 (54.4%) males and 117 (44.9%) females. Age ranged from 1 - 15 years. There was no statistically significant effect of care giver relationship on missed appointments over a 3, 6, and one year period. (F, (3,259) = .438, .448 and 1.811) respectively. P >0.05 at all time intervals. There was also no significant effect of caregiver relationship on missed ARV doses over a one week and one month period. F (3,259) = .667 and .220 respectively. P >0.05.

Conclusion: Caregiver relationship did not significantly impact pediatric patient's adherence to appointments or to taking ARVs. A pediatric patient living with biological parents would fare as well as one living with none relatives.

70128 Religion and the Case of Stigma: The Experience of the Ethiopian Network of Religious Leaders Living with HIV and AIDS

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Background: AIDS-related stigma has had a profound effect on the epidemic's course in Ethiopia. Fear of stigma and discrimination is the main reason why people are reluctant to be tested, to disclose their HIV status and take antiretroviral drugs. These factors all contribute to the expansion of the epidemic and a higher number of AIDS-related deaths. Unwillingness to take HIV test means that more people are diagnosed late, when the virus has already progressed to AIDS, making treatment less effective and causing early death. In Ethiopia, stigma is much rooted in the religious tradition of the society. There is strong misconception of relating HIV to sin and infidelity, and taking it as a moral issue rather than a disease. The level of stigma is high in religious segments (90% of Ethiopians are adherents of one faith or another) of the society and religious leaders are considered as the sign of holiness and purity.

Methods: Ethiopian Inter-faith Forum for Development Dialogue and Action (EIFDDA) in collaboration with its members and partners is implementing a project on Stigma, Denial and Discrimination (SDD) since 2007. The project aimed at empowering and building the capacity of religious communities in the fight against HIV- and AIDS-related SDD. One component of the project is establishing networks and fellowships of believers and religious leaders living with HIV and AIDS.

Results: In the Ethiopian context, working with religious leaders who are HIV-positive as an institution has been a daunting task. Despite all the challenges, immense effort was made in tackling the challenges of SDD in religious institutions and as a result a number of tangible outcomes were registered. These include more than 80 HIV-positive religious leaders who disclosed their HIV status and joined the Ethiopian Network of Religious Leaders Living with HIV and AIDS (ETNERELA+) as members.

Conclusions: Despite the tension and resistance, the project managed to break the silence, initiate theological reflection, challenge stigma head on in the churches and mosques, where it is essentially originating. We have also learned that building on the achievements and strengthening the ongoing work by addressing the SDD related economic challenges of the religious leaders is critical. Some have already lost and some are threatened to lose their reputation as a religious leader because of their disclosed HIV status. Strengthening the household income of these religious leaders through different IGA schemes will be the next step in enhancing the fight against SDD through effective and unrestrained involvement of religious leaders.

POSTER ABSTRACTS

70283 Poor Medication Adherence among HIV-Infected Individuals with Co-Occurring Bipolar Disorder is Associated with Worse HIV Disease

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Background: Poor antiretroviral treatment (ART) adherence among HIV infected persons can lead to increased drug-resistant HIV strains and worse HIV disease outcomes (e.g., increased viral load). Bipolar disorder (BD) is a risk factor for HIV infection, and persons with BD are known to have difficulties with medication adherence.

Methods: We examined medication adherence among 43 HIV-positive persons with BD (HIV+/BD+) as compared to 33 demographically-matched HIV-positive persons without BD (HIV+/BD-). Medication adherence was tracked for 30 days with the Medication Event Monitoring System (MEMS) and participants were classified as adherent ($\geq$90%) or non-adherent (<90%) based on the proportion of correctly taken doses. Plasma HIV viral load (VL) was also measured and the difference between values from prior to tracking and after tracking were recorded; participants were classified as Improved, No Change, or Worsened. Statistical analyses utilized the Fisher's exact test and Spearman's rank correlation.

Results: HIV+/BD+ individuals were significantly less likely to be ART adherent as compared to HIV+/BD- persons; 44.2% of the HIV+/BD+ were adherent versus 75.8% in the HIV+/BD- group. Within the HIV+/BD+ group, poorer adherence as indexed by continuous MEMS 30-day record was significantly correlated with increasing plasma VL over the 30-day period (Spearman Rho = -0.34, p = 0.04; n = 43). Of six participants experiencing virologic failure (change from undetectable to detectable plasma VL), 5 (83%) were classified as ART non-adherent.

Conclusions: HIV+/BD+ persons have significant medication adherence difficulties leading to worse HIV outcomes. Even though adherence was tracked for a short period, those with the worst adherence evidenced the worst HIV disease outcomes. Identifying specialized interventions to improve adherence in this subpopulation is a public health priority as worse HIV disease coupled with high levels of risk behavior may lead to increased HIV transmission.

70301 Substance Abuse Worsens Adherence Over Time: Results From MACH 14

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Background: Though active substance abuse is associated with worse antiretroviral adherence, few studies have examined if drug or alcohol use affect adherence over time. Further, the impact of adherence interventions on the dynamic relationship between drug use and adherence is unknown. We sought to determine how illicit drug or alcohol use affect adherence over time, and tested the hypothesis that interventions attenuate adverse effects of substance abuse on adherence.

Methods: We analyzed data from the Multi-site Adherence Collaboration on HIV (MACH14), which included 16 studies (14 sites) of electronically monitored adherence. MEMS data were collected during 4 weeks prior to assessment of substance use. Use of each substance was coded dichotomously (any use in the preceding period). To assess the independent effect of each substance on adherence over time, we constructed substance-specific mixed effects linear models, including a subject-level random effect (accounting for multiple observations for each subject over time) and also adjusting for age, gender, and race. To assess whether effects of substance use on adherence were altered by interventions, we first constructed 2-level mixed effects linear models stratified by treatment arm (intervention v. control). Each model included both a subject-level random effect, and a study-level random effect (accounting for heterogeneity across studies). Then we constructed a final series of 2-level mixed effects models, including a substance-by-intervention interaction, to test the significance of differing effects on adherence across treatment arms.

Results: Among 880 subjects from the control conditions of 12 studies, we observed that adherence declined significantly over time, but the decline was worse among persons who used cocaine (-5.7%, p = 0.006), stimulants (-13.8%, p = 0.003), heroin (-4.9%, p = 0.056) or alcohol (-2.1%, p = 0.096). In those who used cocaine plus heroin, adherence declined 8.2% (p = 0.026). Among 1621 subjects in 10 intervention studies, we found attenuated effects of substance use on declines in adherence in intervention v. control subjects (alcohol: -1.8% v. -2.8%; cocaine plus heroin: -3.8% v. -8.3%), but differences were not significant.

Conclusions: Patients who use either cocaine, stimulants, or both heroin and cocaine, have worse declines in adherence over time than non-users. Adherence interventions may attenuate negative effects of substance use on adherence over time.

70312 Directly Observed Antiretroviral Therapy Eliminates Negative Impact of Active Drug Use on Adherence in Methadone Patients

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Background: Research has consistently shown illicit drug use to be associated with poor adherence, but this relationship has not been described in detail. The adherence effects of active drug use, and the impact of adherence enhancing interventions on the relationship between active drug use and adherence is largely unknown.

Methods: A 24-week prospective observational study among HIV-infected opiate dependent methadone patients enrolled in a randomized trial of antiretroviral directly observed therapy (DOT) versus treatment as usual (TAU). Our outcome measure was antiretroviral adherence, measured using pill counts. Major independent variables were treatment arm (DOT v. TAU) and active drug use (opiates, cocaine, or both opiates and cocaine), measured using urine toxicology assays. We defined any drug use as ≥ one positive urine test, and frequent drug use as ≥50% tested urines positive. We evaluated the associations between drug use and adherence using mixed-effect linear models, and used a treatment arm-by-drug use interaction term to evaluate the impact of DOT on the association between drug use and adherence.

Results: 39 participants were randomized to DOT and 38 to TAU. We observed significant associations between active drug use and adherence, but these were limited to participants in the TAU arm. Among TAU participants, adherence was worse among those with any opiate use than no opiate use (75% v 63%, p <0.01); and among those with any polysubstance (both opiates and cocaine) use than no drug use (73% v 60%, p = 0.01). A similar pattern was seen among TAU participants with either frequent opiate or frequent polysubstance use. Among participants in the DOT arm, active drug use was not associated with worse adherence.

Conclusions: Active opiate use, or polysubstance use, by HIV-infected, methadone-maintained patients decreases antiretroviral adherence. However, the negative impact of drug use on adherence is eliminated by directly observed antiretroviral therapy.

70320 Factors Associated with HAART Adherence in Adolescents and Youth Living with HIV in Argentina

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Background: Factors associated with antiretroviral treatment adherence in HIV+ adolescents and youth treated in 4 public hospitals from Argentina were analyzed, stratified by gender and mode of transmission.

Methods: Survey was taken by an incidental sample of 60 patients, ages between 14-24 years with disclosed HIV diagnosis, (56.7% female), 61.7% infected by mother-to child transmission (MTCT) and 33.3% by sexual transmission (ST).

Results: 32.1% had symptoms at interview's time (35.5% female and 28% male). 9.7% of women and 8% of men show adverse effects. Only half of them had information about HAART (75% ST infected and 40.5% MTCT infected), 15% did not know (25% ST infected, 10.8% MTCT infected) and one-third were confused regarding the purpose and effectiveness of HAART. 61.5% males and 38.2% females were on treatment, 16.7% began but stopped, 16.7% never were prescribed to start treatment. 94.6% of MTCT infected and 50% ST infected are or were on HAART. 57.1% females and 36.4% males discontinued treatment. 38.5% of them dropped out, 26.9% by medical prescription. Reasons for stopping: 40% self-reported negligence/lack of desire; 20% treatment complexity, 20% side effects. Only 56.1% report to follow caregiver's instructions, 65.8% take medication including at work and 63.4% including on the weekend or when they go out with friends. Only 14.6% take it when they use drugs (17.6% females and 26.9% males used drugs over the past year).

Conclusions: Greater proportion of adverse effects and symptoms among women; fewer women are in treatment and a higher proportion interrupt treatment. Youth infected through MTCT have less information about HAART. 1/3rd report difficulty taking medication in social situations (work/ recreation). These results should prompt the design of specific strategies to address this special population.

POSTER ABSTRACTS

70321 Adverse Effect of Binge Drinking on Adherence is Immediate in Older Patients Starting Antiretroviral Therapy (ART) in Botswana

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Background: Identifying adherence determinants in specific settings may inform locally relevant interventions to improve outcomes. Heavy alcohol use is common in Botswana and may be a worthwhile intervention target.

Methods: We conducted a prospective cohort of treatment-naïve, HIV patients, initiating efavirenz-based ART at 6 clinics in Botswana. Demographic, clinical data and current alcohol use (using a modified AUDIT) were assessed at baseline. Binge drinking was defined as ≥6 drinks at least weekly. Age was dichotomized at 35 years. Primary outcome was adherence after one month using pill counts and pharmacy refill data, calculated as: (# of days doses dispensed - # of days of pills returned)/(#days between fills). Analyses used rank sum tests for univariate and linear regression for multivariate comparisons between binge and non-binge drinking groups.

Results: We enrolled 126 patients with median age of 40 (range 23-64); 78 (62%) were male. Overall, median adherence (interquartile range) was 1.00 (0.96-1.00) and 97 (77%) had adherence ≥0.95. Binge drinking was acknowledged by 32 (25.4%), 90.6% male. The effect of binge drinking on adherence differed by age group (p <0.001); the age strata are reported separately. Among patients >35, median adherence for binge drinkers was 0.93 (IQR: 0.79 to 1.00) and for non-binge drinkers 1.00 (IQR: 1.00 to 1.00), p = 0.002. In patients ≤35, median adherence for binge drinkers was 1.00 (IQR: 0.96 to 1.03) and for non-binge drinkers was 1.00 (IQR: 1.00 to 1.00), p >0.5. There were no confounders or other effect modifiers.

Conclusions: Alcohol abuse has an immediate adverse effect on adherence among older binge drinkers in Botswana. Alcohol screening and subsequent reduction interventions are needed at therapy initiation to proactively identify those at high risk of immediate non-adherence. Further investigation into the social and biological reasons for the effect being present in older but not younger patients is warranted.

70326 Patient Communication Tools to Enhance ART Adherence Counseling

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Background: Good ART adherence requires knowledge, motivation, and behavioral skills. Many concepts which are important for understanding how and why to adhere are difficult for patients to understand, particularly for patients with lower levels of education or limited abstract thinking skills. This study describes the development and evaluation of several ART adherence counseling tools developed for Project MOTIV8, a successful randomized controlled trial of behavioral interventions to increase ART adherence.

Methods: We developed, piloted, and evaluated concrete pictorial images for use in the course of 10 counseling sessions. A bulls-eye image was color coded to illustrate the target, ideal, and acceptable timing for dosing, and was customized for each participant's regimen. To explain the concept of drug resistance, an image of a brick wall was used to represent how ART medication, when properly taken, creates a barrier that blocks HIV from copying itself. Electronic drug monitoring [EDM] review was also used in every counseling session as a tool to provide participants with immediate visual feedback and to facilitate problem solving discussions. The adherence knowledge of participants (n = 204, mean age = 40.4 years, 57% African American, 25% female) who had been exposed to the counseling tools (intervention) and those who had not (control) was assessed via a standardize questionnaire that presented three vignettes of actual dosing schedules at baseline and 48 weeks.

Results: Intervention and control participants' adherence knowledge did not differ at baseline. However, at 48 weeks, intervention participants demonstrated a 13% increase in adherence knowledge compared to a 1.8% decrease among controls (F = 5.23, p = 0.023). Counselors reported that the tools were well received and 80% of participants felt the counseling was mostly or very effective in helping them adhere to their medications.

Conclusions: These counseling tools were effective in increasing ART adherence knowledge among a diverse population. While developed for research, these tools can be easily implemented into clinical practice.