Welcome to **HIV this month**! In this issue, we cover the following topics:

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Peter Godfrey-Faussett and Celeste Sandoval
UNAIDS
1. Reduce sexual transmission

Rural-to-urban migration and sexual debut in Thailand.


Migration from one’s parents’ home and sexual debut are common features of the transition to adulthood. Although many studies have described both of these features independently, few have examined the relationship between migration and sexual debut in a systematic manner. In this study, we explore this link for young adults in Thailand. With relatively high rates of internal migration, rapid modernization, a moderate HIV epidemic, and a declining average age of sexual debut, Thailand presents an instructive environment in which to examine migration and sexual debut. We use two waves of a longitudinal data set (2005 and 2007) that includes a subsample of young adults who migrated to urban areas during that period. We identify characteristics and behaviors associated with sexual debut and examine the role of migration on debut. Our approach reduces several common sources of bias that hamper existing work on both migration and sexual debut: (1) the longitudinal nature of the data enables us to examine the effects of characteristics that predate both behaviors of interest; (2) the survey on sexual behavior employed a technique that reduces response bias; and (3) we examine differences in debut by marital status. We find that migrants have a higher likelihood of sexual debut than nonmigrants.

Abstract access

Editor’s notes: Much of the research on sexual behaviour comes from sub-Saharan Africa. It is useful to see a study on rural-urban migration and sexual debut in Thailand, a rapidly urbanizing country. The share of the urban population is expected to double by 2050. Rural-urban migration has become part of the experience of many young men and women, growing up. In this study of 4,000 young people aged 15-29 years, 16% of respondents at baseline had migrated within a two-year period. Thailand has been successful in reducing HIV incidence, but there are now concerns over reduced awareness of sexually transmitted infections in young people, increased sexual activity, and reductions in the age of sexual debut. Using a longitudinal dataset, the authors found that rural-urban migration was associated with higher likelihood of sexual debut. It seems this is not solely due to non-residence with a parent, as this was not associated with sexual debut. The findings raise a number of interesting hypotheses about the implications for HIV prevention, and about the mechanisms that produce this association between migration and sexual debut. These include ideational changes, weakening of the social control mechanisms, a larger pool of potential partners in urban areas, or reverse causality.

Replicating impact of a primary school HIV prevention programme: primary school action for better health, Kenya.


School-based programmes to combat the spread of HIV have been demonstrated to be effective over the short-term when delivered on a small scale. The question addressed here is whether results obtained with small-scale delivery are replicable in large-scale roll-out. Primary School Action for Better Health (PSABH), a programme to train teachers to deliver HIV-prevention education in upper primary-school grades in Kenya demonstrated positive impact when tested in Nyanza Province. This article reports pre-, 10-month post- and 22-month post-training results as
PSABH was delivered in five additional regions of the country. A total of 26,461 students from 110 primary schools in urban and rural, middle- and low-income settings participated in this repeated cross-sectional study. Students ranged in age from 11 to 16 years, were predominantly Christian (10% Muslim), and the majority were from five different ethnic groups. Results demonstrated positive gains in knowledge, self-efficacy related to changes in sexual behaviours and condom use, acceptance of HIV+ students, endorsement of HIV-testing and behaviours to postpone sexual debut or decrease sexual activity. These results are as strong as or stronger than those demonstrated in the original impact evaluation conducted in Nyanza Province. They support the roll-out of the programme across Kenyan primary schools.

Abstract access

Editor’s notes: There are school-based HIV education programmes, demonstrated to be effective in improving knowledge and reported behaviours in trials. But few have been implemented and evaluated across an entire school system. After a successful trial in Nyanza Province, the Kenyan Ministry of Education, Science and Technology implemented the Primary School Action for Better Health (PSABH) nationwide. The national implementation is notable for its commitment to quality control. Quality Assurance Officers conducted teacher trainings and monitored the strength of programme implementation at each school. At scale, the national PSABH programme replicated and sustained the successes of the Nyanza trial. These included increased HIV-related knowledge and communications, condom and sexual self-efficacy but not reported condom use at last intercourse. This raises the larger question of whether these improvements in knowledge and reported behaviours translate into actual behaviour change, and reduced HIV transmission. And there is little evidence for successful programmes on this.

Effects of HIV antiretroviral therapy on sexual and injecting risk-taking behaviour: a systematic review and meta-analysis.


Background: Increased global access and use of HIV antiretroviral therapy (ART) has been postulated to undermine HIV prevention efforts by changing individual risk-taking behaviour. This review aims to determine whether ART use is associated with changes in sexual or injecting risk-taking behaviour or diagnosis of sexually transmitted infections (STIs).

Methods: A systematic review and meta-analysis was conducted of HIV-seropositive participants receiving ART compared to no ART use in experimental or observational studies. Primary outcomes included: (1) any unprotected sexual intercourse; (2) STI diagnoses; and (3) any unsafe injecting behaviour.

Results: Fifty-eight studies met the selection criteria. Fifty-six studies containing 32,857 participants reported unprotected sex; eleven studies containing 16,138 participants reported STI diagnoses; and four studies containing 1,600 participants reported unsafe injecting behaviour. All included studies were observational. Unprotected sex was lower in those receiving ART than those not receiving ART (odds ratio (OR) 0.73, 95%CI 0.64-0.83, p<0.001; heterogeneity I²=79%) in both high-income (n=38) and low-/middle-income country (n=18) settings, without any evidence of publication bias. STI diagnoses were also lower among individuals on ART (OR 0.58, 95%CI 0.33-1.01, p=0.053; I²=92%), however there was no difference in injecting risk-taking behaviour with antiretroviral use (OR 0.90, 95%CI 0.60-1.35, p=0.6; I²=0%).
Conclusions: Despite concerns that use of ART might increase sexual or injecting risk-taking, available research suggests unprotected sex is reduced among HIV-infected individuals on treatment. The reasons for this are not yet clear, though self-selection and mutually reinforcing effects of HIV treatment and prevention messages among people on ART are likely.

Abstract access

Editor's notes: Use of antiretroviral therapy (ART) may modify risk perception, leading to increases in risk-taking behaviour and HIV transmission. This has important implications for HIV prevention. In particular in low and middle-income countries, where the global burden of HIV is greatest and where access to, and use of, ART is rapidly increasing. This systematic review identified observational studies comparing risk-taking behaviour in people living with HIV using ART, compared with people not using ART. The review found that ART does not appear to increase reported unprotected anal or vaginal intercourse, newly diagnosed sexually transmitted infections, or unsafe injecting behaviour among people on treatment. The observation that reductions in unprotected sex are associated with ART use should be interpreted cautiously as limited data are available to accurately assess a causal relationship. The current practice of providing ART with counselling, education and ongoing clinical care probably offers the optimal strategy of ensuring that individuals on ART minimise risks associated with unsafe sex.

2. 15 million accessing treatment

Antiretroviral therapy response among HIV-2 infected patients: a systematic review.


Methods: Data were extracted from articles that were selected after screening of PubMed/MEDLINE up to November 2012 and abstracts of the 1996-2012 international conferences. Observational cohorts, clinical trials and program reports were eligible as long as they reported data on ART response (clinical, immunological or virological) among HIV-2 infected patients. The determinants investigated included patients’ demographic characteristics, CD4 cell count at baseline and ART received.

Results: Seventeen reports (involving 976 HIV-2 only and 454 HIV1&2 dually reactive patients) were included in the final review, and the analysis presented in this report are related to HIV-2 infected patients only in 17 reports. There was no randomized controlled trial and only two cohorts had enrolled more than 100 HIV-2 only infected patients. The median CD4 count at ART initiation was 165 cells /mm$^3$, [IQR; 137-201] and the median age at ART initiation was 44 years (IQR: 42-48 years). Ten studies included 103 patients treated with three nucleoside reverse transcriptase inhibitors (NRTI). Protease inhibitor (PI) based regimens were reported by 16 studies. Before 2009, the most frequent PIs used were Nelfinavir and Indinavir, whereas it was Lopinavir/ritonavir thereafter. The immunological response at month-12 was reported in six studies and the mean CD4 cell count increase was +118 cells /µL (min-max: 45-200 cells/µL).

Conclusion: Overall clinical and immuno-virologic outcomes in HIV-2 infected individuals treated with ART are suboptimal. There is a need of randomized controlled trials to improve the management and outcomes of people living with HIV-2 infection.

Abstract Full-text [free] access
Editor's notes: HIV-2 accounts for between 10-20% of HIV infections in West Africa. With a longer asymptomatic period, lower plasma viral load and slower decline in CD4 count, it is often seen as a less aggressive virus than HIV-1. However, people with HIV-2 still experience clinical progression and AIDS-related deaths. WHO recommends initiating a boosted protease inhibitor regimen or a triple nucleoside reverse transcriptase (NRTI)-based regimen in people living with HIV-2 when their CD4 count falls below 500 cells/mm$^3$. However, as clearly demonstrated in this systematic review, the evidence underlying when to start antiretroviral therapy (ART) and the optimal treatment options for people living with HIV-2, is weak. Only 17 observational studies (15 cohort studies and two case series) were identified. Overall immune recovery was sub-optimal and, given the small sample sizes of these studies, there was limited power to detect any differences in outcomes by treatment regimen. Further evidence is urgently needed to guide optimal treatment of people living with HIV-2.

Safety of cotrimoxazole in pregnancy: a systematic review and meta-analysis.


Introduction: Cotrimoxazole is widely prescribed to treat a range of infections, and for HIV-infected individuals it is administered as prophylaxis to protect against opportunistic infections. Some reports suggest that fetuses exposed to cotrimoxazole during early pregnancy may have an increased risk of congenital anomalies. We carried out this systematic review to update the evidence of cotrimoxazole safety in pregnancy.

Methods: Three databases and 1 conference abstract site were searched in duplicate up to October 31, 2013, for studies reporting adverse maternal and infant outcomes among women receiving cotrimoxazole during pregnancy. This search was updated in MEDLINE via PubMed to April 28, 2014. Studies were included irrespective of HIV infection status or the presence of other coinfections. Our primary outcome was birth defects of any kind. Secondary outcomes included spontaneous abortions, terminations of pregnancy, stillbirths, preterm deliveries, and drug-associated toxicity.

Results: Twenty-four studies were included for review. There were 232 infants with congenital anomalies among 4196 women receiving cotrimoxazole during pregnancy, giving an overall pooled prevalence of 3.5% (95% confidence interval: 1.8% to 5.1%; $\tau^2 = 0.03$). Three studies reported 31 infants with neural tube defects associated with first trimester exposure to cotrimoxazole, giving a crude prevalence of 0.7% (95% confidence interval: 0.5% to 1.0%) with most data (29 neural tube defects) coming from a single study. The majority of adverse drug reactions were mild. The quality of the evidence was very low.

Conclusions: The findings of this review support continued recommendations for cotrimoxazole as a priority intervention for HIV-infected pregnant women. It is critical to improve data collection on maternal and infant outcomes.

Abstract access

Editor's notes: Cotrimoxazole significantly reduces morbidity and increases survival in people living with HIV (including people on antiretroviral therapy) in resource-limited settings. However, there is some concern of potential human foetal risk when cotrimoxazole is taken during pregnancy. This systematic review found very limited evaluable data on maternal and infant outcomes associated with cotrimoxazole exposure during pregnancy. Cotrimoxazole is likely to be of most benefit in high HIV burden, low-income settings. In this context, the known benefit of treatment outweighs the potential
Delay of antiretroviral therapy initiation is common in east African HIV-infected individuals in serodiscordant partnerships.


Objective: WHO guidance recommends antiretroviral therapy (ART) initiation for all persons with a known HIV-uninfected partner, as a strategy to prevent HIV transmission. Uptake of ART among HIV-infected partners in serodiscordant partnerships is not known, which we evaluated in African HIV serodiscordant couples.

Design: Prospective cohort study.

Methods: Among HIV-infected persons from Kenya and Uganda who had a known heterosexual HIV-uninfected partner, we assessed ART initiation in those who became ART eligible under national guidelines during follow-up. Participants received quarterly clinical and semi-annual CD4 monitoring, and active referral for ART upon becoming eligible.

Results: Of 1958 HIV-infected ART-eligible partners, 58% were women, and the median age was 34 years. At the first visit when determined to be ART eligible, the median CD4 count was 273 cells per microliter (interquartile range, 221-330), 77% had WHO stage 1 or 2 HIV disease, and 96% were receiving trimethoprim-sulfamethoxazole prophylaxis. The cumulative probabilities of initiating ART at 6, 12, and 24 months after eligibility were 49.9%, 70.0%, and 87.6%, respectively. Younger age [<25 years; adjusted hazard ratio (AHR), 1.39; P = 0.001], higher CD4 count (AHR, 1.95; P < 0.001 for >350 compared with <200 cells/µL), higher education (AHR, 1.25; P < 0.001), and lack of income (AHR, 1.15; P = 0.02) were independent predictors for delay in ART initiation.

Conclusions: In the context of close CD4 monitoring, ART counseling, and active linkage to HIV care, a substantial proportion of HIV-infected persons with a known HIV-uninfected partner delayed ART initiation. Strategies to motivate ART initiation are needed, particularly for younger persons with higher CD4 counts.

Abstract access

Editor’s notes: WHO guidance recommends immediate antiretroviral therapy (ART) initiation, at any CD4 count, for people living with HIV in HIV serodiscordant partnerships. This is included in national HIV strategies in many countries. However, we do not yet know whether individuals will be willing to start ART at a time when they are still asymptomatic, knowing they will have to take the drugs for the rest of their lives. In this study of stable HIV-serodiscordant couples in the Partners PrEP trial, about three-quarters of participants initiated ART during follow-up. Reasons for non-initiation included higher CD4 count, younger age, and lack of income. The implications of this study for initiating treatment at higher CD4 counts, especially in economically challenged contexts, are important. A better understanding of individuals’ reasons for delaying treatment initiation is needed, including strategies for support. With the move towards higher initiation CD4 thresholds, the success of programming treatment activities may rely heavily on thoroughly understanding the desires and motivations of people who are responsible for taking up treatment.
3. Avoid TB deaths

Causes and determinants of mortality in HIV-infected adults with tuberculosis: an analysis from the CAMELIA ANRS 1295-CIPRA KH001 randomized trial.


Background: Shortening the interval between antituberculosis treatment onset and initiation of antiretroviral therapy (ART) reduces mortality in severely immunocompromised human immunodeficiency virus (HIV)-infected patients with tuberculosis. A better understanding of causes and determinants of death may lead to new strategies to further enhance survival.

Methods: We assessed mortality rates, causes of death, and factors of mortality in Cambodian HIV-infected adults with CD4 count ≤200 cells/µL and tuberculosis, randomized to initiate ART either 2 weeks (early ART) or 8 weeks (late ART) after tuberculosis treatment onset in the CAMELIA clinical trial.

Results: Six hundred sixty-one patients enrolled contributed to 1 366.1 person-years of follow-up; 149 (22.5%) died. There were 8.3 deaths per 100 person-years (95% confidence interval [CI], 6.4-10.7) in the early-ART group and 13.8 deaths per 100 person-years (95% CI, 11.2-16.9) in the late-ART group (P = .002). Tuberculosis was the primary cause of death (28%), followed by other HIV-associated conditions (19%). Factors independently associated with mortality in the first 26 weeks were the age, body mass index, hemoglobin, interrupted or ineffective tuberculosis treatment before identification of drug resistance, disseminated tuberculosis, and nontuberculous mycobacterial disease. After 50 weeks in the trial, the most frequent causes of death were non-HIV related or tuberculosis related, including drug toxicity; factors associated with mortality were late ART, loss to follow-up, and absence of cotrimoxazole prophylaxis.

Conclusions: Despite ART introduction, mortality remained high, with tuberculosis as the leading cause of death. Reducing tuberculosis-related mortality remains a challenge in resource-limited settings and requires innovative strategies.

Abstract access

Editor’s notes: Tuberculosis (TB) remains the most important cause of death among HIV-positive people worldwide, despite increasing access to antiretroviral therapy. There is a strong emphasis on reducing TB mortality as part of the post-2015 global TB strategy. This makes it even more important to define causes of death, so that appropriate programmes can be introduced.

This analysis in Cambodia, reports causes of death among HIV-positive people with sputum smear-positive TB, and CD4 counts below 200. The participants took part in a trial of antiretroviral therapy started early, i.e. two weeks after start of TB treatment, versus late, eight weeks after TB treatment start. Causes of death were assigned by site investigators and validated by review of medical records by investigators who had not been involved in the patient’s care. Tuberculosis was the most frequently assigned cause of death (42 of 149 deaths). HIV-associated conditions accounted for 28 deaths of which diarrhoea, non-tuberculous mycobacterial disease and immune reconstitution syndrome were the most frequent. For 23 deaths, TB and HIV-associated conditions were considered equally likely. This highlights the difficulty in distinguishing between these two causes of death among people with advanced HIV-related immunosuppression. Limited autopsies based on multiple biopsies are far more acceptable to families than traditional full autopsy, and could be used to identify causes...
of death with greater accuracy. Further it was notable that cotrimoxazole prophylaxis was associated with a lower risk of death after 50 weeks of follow-up, underlining the importance of this programme.

Burden of childhood tuberculosis in 22 high-burden countries: a mathematical modelling study.


Background: Confirmation of a diagnosis of tuberculosis in children (aged <15 years) is challenging; under-reporting can result even when children do present to health services. Direct incidence estimates are unavailable, and WHO estimates build on paediatric notifications, with adjustment for incomplete surveillance by the same factor as adult notifications. We aimed to estimate the incidence of infection and disease in children, the prevalence of infection, and household exposure in the 22 countries with a high burden of the disease.

Methods: Within a mechanistic mathematical model, we combined estimates of adult tuberculosis prevalence in 2010, with aspects of the natural history of paediatric tuberculosis. In a household model, we estimated household exposure and infection. We accounted for the effects of age, BCG vaccination, and HIV infection. Additionally, we tested sensitivity to key structural assumptions by repeating all analyses without variation in BCG efficacy by latitude.

Findings: The median number of children estimated to be sharing a household with an individual with infectious tuberculosis in 2010 was 15 319 701 (IQR 13 766 297-17 061 821). In 2010, the median number of Mycobacterium tuberculosis infections in children was 7 591 759 (5 800 053-9 969 780), and 650 977 children (424 871-983 118) developed disease. Cumulative exposure meant that the median number of children with latent infection in 2010 was 53 234 854 (41 111 669-68 959 804). The model suggests that 35% (23-54) of paediatric cases of tuberculosis in the 15 countries reporting notifications by age in 2010 were detected. India is predicted to account for 27% (22-33) of the total burden of paediatric tuberculosis in the 22 countries. The predicted proportion of tuberculosis burden in children for each country correlated with incidence, varying between 4% and 21%.

Interpretation: Our model has shown that the incidence of paediatric tuberculosis is higher than the number of notifications, particularly in young children. Estimates of current household exposure and cumulative infection suggest an enormous opportunity for preventive treatment.

Abstract Full-text [free] access

Editor’s notes: Estimating the burden of childhood tuberculosis has been largely neglected until recently. Children with tuberculosis rarely transmit and therefore from a control perspective, childhood tuberculosis does not notably contribute to the continuation of the tuberculosis epidemic. This modelling paper attempts to estimate the global burden of childhood tuberculosis infection and disease. Incidence estimates are made by using adult tuberculosis prevalence data to tackle the known limitations of using paediatric notification data. A second model estimates the prevalence of infection in children and household exposure, ignoring exposure outside of the household. As with all mathematical model predictions, precision of estimates are dependent on the data used as inputs in the model. Despite these limitations, the paper draws attention to the fact that the burden of childhood tuberculosis infection and disease is significant and reflects failure of tuberculosis control in the 22 high-burden countries. The paper also highlights the fact that household contact tracing and
preventive therapy in tuberculosis-exposed children could substantially reduce future tuberculosis-related morbidity.

Water filter provision and home-based filter reinforcement reduce diarrhea in Kenyan HIV-infected adults and their household members.


Among human immunodeficiency virus (HIV)-infected adults and children in Africa, diarrheal disease remains a major cause of morbidity and mortality. We evaluated the effectiveness of provision and home-based reinforcement of a point-of-use water filtration device to reduce diarrhea among 361 HIV-infected adults in western Kenya by comparing prevalence of self-reported diarrhea before and after these interventions. After provision of the filter, 8.7% of participants reported diarrhea compared with 17.2% in the 3 months before filter provision (odds ratio [OR] = 0.39, 95% confidence interval [95% CI] = 0.23-0.66, P < 0.001). The association was similar among 231 participants who were already taking daily cotrimoxazole prophylaxis before being given a filter (OR = 0.47, 95% CI = 0.25-0.88, P = 0.019). Educational reinforcement was also associated with a modest reduction in self-reported diarrhea (OR = 0.50, 95% CI = 0.20-0.99, P = 0.047). Provision and reinforcement of water filters may confer significant benefit in reducing diarrhea among HIV-infected persons, even when cotrimoxazole prophylaxis is already being used.

Abstract access

Editor’s notes: Diarrhoeal disease remains an important cause of morbidity among HIV-positive people. This analysis was part of a larger study of HIV-positive adults who were not taking antiretroviral therapy. The frequency of diarrhoea, measured by self-report, was compared before and after participants were given a water filtration device. After receiving the device, fewer people reported diarrhoea, with an odds ratio of 0.39. The beneficial effect was similar among people who were already taking cotrimoxazole prophylaxis. The benefits of water filtration or chlorination have been shown in previous studies, but this is a useful reminder of the value of clean water programmes in reducing diarrhoeal disease.

4. Close the resource gap

Does food insecurity undermine adherence to antiretroviral therapy? A systematic review.

Singer AW, Weiser SD, McCoy SI. AIDS Behav. 2014 Aug 6. [Epub ahead of print]

A growing body of research has identified food insecurity as a barrier to antiretroviral therapy (ART) adherence. We systematically reviewed and summarized the quantitative literature on food insecurity or food assistance and ART adherence. We identified nineteen analyses from eighteen distinct studies examining food insecurity and ART adherence. Of the thirteen studies that presented an adjusted effect estimate for the relationship between food insecurity and ART adherence, nine found a statistically significant association between food insecurity and suboptimal ART adherence. Four studies examined the association between food assistance and ART adherence, and three found that ART adherence was significantly better among food assistance recipients than non-recipients. Across diverse populations, food insecurity is an important barrier to ART adherence, and food assistance appears to be a promising intervention strategy.
to improve ART adherence among persons living with HIV. Additional research is needed to
determine the effectiveness and cost-effectiveness of food assistance in improving ART adherence
and other clinical outcomes among people living with HIV in the era of widespread and long-term
treatment.

Abstract access

Editor’s notes: A number of qualitative studies have found that a lack of food is given as a reason for
non-adherence to anti-retroviral therapy (ART). The authors wanted to see if quantitative studies on
food security and adherence supported this view. As with many systematic reviews the number of
quantitative studies included in the final analysis was small: fourteen. However, the majority of these
studies did find an association between the availability of food and adherence. The authors very
carefully describe the difference methods used to measure both food security and ART adherence.
These findings show both the wide range of methods used for measurement and definitions of
adherence and food security, which made comparisons difficult. So, while the authors did find that
food insecurity is a barrier to adherence, they could not say why. Given that food insecurity may be a
threat to adherence for the some of the increasing numbers of people starting ART, further research
is urgently needed. We need to understand more about the association between food and ART
adherence.

5. Eliminate stigma and discrimination

We call it a virus but I want to say it’s the devil inside’: redemption, moral reform and
relationships with God among people living with HIV in Papua New Guinea.

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There is growing recognition of the importance of religion and religious beliefs as they relate
to the experience of HIV, globally and in Papua New Guinea in particular. Based on 36 in-depth
qualitative interviews conducted with people living with HIV receiving HIV antiretroviral
therapy in 2008, this paper examines the cultural aetiology of HIV of in Papua New Guinea, the
country with the highest reported burden of HIV in the Pacific. Narratives provided drew upon a
largely moral framework, which viewed HIV acquisition as a consequence of moral failing and living
an un-Christian life. This explanation for suffering viewed the individual as responsible for their
condition in much the same way that neo-liberal biomedical discourses do. Moral reform and
re-establishing a relationship with God were seen as key actions necessary to effect healing
on the material body infected with HIV. Religious understandings of HIV drew upon a pre-
existing cultural aetiology of dis-ease and misfortune widespread in Papua New Guinea.
Understanding the centrality of Christianity to explanations of disease, and subsequently the actions
necessary to bring about health, is essential in order to understand how people with HIV in receipt of
antiretroviral therapies internalise biomedical perspectives and reconcile these with Christian beliefs.

Abstract access

Editor’s notes: This is an insightful paper which reveals how religion and religious belief can impact
on the experience of being HIV positive. Drawing on in-depth interviews conducted as part of a mixed-
methods study, the authors explored what people from Papua New Guinea (PNG) view as the cause
of their illness, and how they respond to their diagnosis. They argue that whilst there has been much
anthropological enquiry into religion and HIV in PNG and elsewhere, there has been little attention to the experiences of people living with HIV. In introducing the context the authors highlight the influence of Christianity on everyday life in PNG, which is localised and informed by traditional practices. The findings are deeply illuminating and reveal that the participants understood their illness within moral frameworks. Contagion was explained by “sinful” behaviour, especially promiscuity. Whilst blaming HIV for such moral transgressions has been described elsewhere, these findings reveal that these participants describe their own behaviour in such terms. Responding to their diagnosis involved returning to the church or religious conversion, which created an individual relationship with God that affected healing of the body. These practices could result in lifestyle change and a rejection of previous immoral practices such alcohol and drugs. These narratives contribute to understanding the complexity of meanings that surround HIV. In particular, people from PNG may not consider structural or socio-cultural factors to be the cause of HIV. The authors suggest that in the context of an increasing bio-medicalisation of the response to HIV, a focus on how people live with HIV is very important and needs to take into account religious belief.


Importance: Although brief intervention is effective for reducing problem alcohol use, few data exist on its effectiveness for reducing problem drug use, a common issue in disadvantaged populations seeking care in safety-net medical settings (hospitals and community health clinics serving low-income patients with limited or no insurance).

Objective: To determine whether brief intervention improves drug use outcomes compared with enhanced care as usual.

Design, setting, and participants: A randomized clinical trial with blinded assessments at baseline and at 3, 6, 9, and 12 months conducted in 7 safety-net primary care clinics in Washington State. Of 1 621 eligible patients reporting any problem drug use in the past 90 days, 868 consented and were randomized between April 2009 and September 2012. Follow-up participation was more than 87% at all points.

Interventions: Participants received a single brief intervention using motivational interviewing, a handout and list of substance abuse resources, and an attempted 10-minute telephone booster within 2 weeks (n = 435) or enhanced care as usual, which included a handout and list of substance abuse resources (n = 433).

Main outcomes and measures: The primary outcomes were self-reported days of problem drug use in the past 30 days and Addiction Severity Index-Lite (ASI) Drug Use composite score. Secondary outcomes were admission to substance abuse treatment; ASI composite scores for medical, psychiatric, social, and legal domains; emergency department and inpatient hospital admissions, arrests, mortality, and human immunodeficiency virus risk behavior.

Results: Mean days used of the most common problem drug at baseline were 14.40 (SD, 11.29) (brief intervention) and 13.25 (SD, 10.69) (enhanced care as usual); at 3 months postintervention, means were 11.87 (SD, 12.13) (brief intervention) and 9.84 (SD, 10.64) (enhanced care as usual) and not significantly different (difference in differences, beta = 0.89 [95% CI, -0.49 to 2.26]). Mean ASI Drug Use composite score at baseline was 0.11 (SD, 0.10) (brief intervention) and 0.11 (SD, 0.10)
(enhanced care as usual) and at 3 months was 0.10 (SD, 0.09) (brief intervention) and 0.09 (SD, 0.09) (enhanced care as usual) and not significantly different (difference in differences, beta = 0.008 [95% CI, -0.006 to 0.021]). **During the 12 months following intervention, no significant treatment differences were found for either variable.** No significant differences were found for secondary outcomes.

Conclusions and relevance: A one-time brief intervention with attempted telephone booster had no effect on drug use in patients seen in safety-net primary care settings. **This finding suggests a need for caution in promoting widespread adoption of this intervention for drug use in primary care.**

Abstract access

**Editor’s notes:** As well as injecting drug use, in some settings, people with problematic use of drugs are at increased risk of HIV. There has been a growing use of brief programmes to reduce drug use and drug-related harm. This is despite a gap in evidence about whether such short activities work or not. This paper presents the findings from a large randomised controlled trial. The trial examined the effectiveness of brief programmes for reducing drug use and increase admission to specialist substance abuse services, compared to an enhanced care package. The study was relatively large (n=868) with high follow-up rate (more than 87%). A range of drugs and severity of use were reported. No differences were found between the brief programme and control in relation to frequency of drug use, or medical, psychiatric, employment, family/social or legal outcomes. This finding is not surprising considering the complex problems that often accompany problematic drug use, including high levels of co-morbid mental illness. What is surprising, is that the increased uptake of specialist care and reduced use of emergency departments was significantly associated with the most severe drug use. This suggests that, for these outcomes, the programme may have had a greater effect on people who were more severe drug users. It would have been helpful if the study reported prevalence of injecting among the sample, since injecting is usually associated with more frequent drug use and drug-related harms than non-injecting. Knowing whether injecting contributed to increased severity of drug use among this sample might have helped interpret the association between the brief programme and reduced use of emergency departments among people who were severe users. This paper rightly urges caution in rolling out brief programmes for a broad spectrum of drug use in primary care settings and suggests the need for more research to examine the effectiveness of brief activities by type, mode and severity of drug use.

6. Strengthening HIV integration

**Aging with HIV: a model of disability.**


The purpose of this qualitative study was to develop a theoretical model describing the disability experienced by older adults living with HIV. Forty nine HIV positive men and women over the age of 50 years participated in in-depth qualitative interviews. Transcribed interviews were analyzed using grounded theory techniques. Uncertainty or worrying about the future was at the core of the model. **Components of disability including symptoms and impairments, difficulties with day to day activities and challenges to social participation were experienced in the context of extrinsic or environmental factors (social support, stigma) and intrinsic contextual factors (positive living strategies, age).** Time was an overarching component of the model. The model
suggests areas for interventions to prevent or reduce disability related to the consequences of aging with HIV and improve overall quality of life.

Abstract access

Editor’s notes: This paper is a very welcome addition to the growing body of research on HIV and ageing. Time is highlighted in the findings. Time has been regained (because treatment has kept people alive to grow old) and time is moving too fast (as individuals fear accelerated ageing because of HIV). The authors also highlight the centrality of uncertainty in the lives of the 49 people interviewed. Uncertainty is central to ageing. No-one of us knows quite how well we may remain as we age. However, the interaction between HIV and the ageing process is an added layer of uncertainty. The average age of people in this study was only 56, so they were relatively young, older people. We can expect worries over adequate social support and managing increasing ill-health and disability, will increase as people age. The authors urge us to look at the impact of HIV on older people’s quality of life as a whole, in the design of programmes. This paper is a timely reminder of the social, mental and physical burden HIV continues to impose on people’s lives.

Interventions to improve or facilitate linkage to or retention in pre-ART (HIV) care and initiation of ART in low- and middle-income settings--a systematic review.


Introduction: Several approaches have been taken to reduce pre-antiretroviral therapy (ART) losses between HIV testing and ART initiation in low- and middle-income countries, but a systematic assessment of the evidence has not yet been undertaken. The aim of this systematic review is to assess the potential for interventions to improve or facilitate linkage to or retention in pre-ART care and initiation of ART in low- and middle-income settings.

Methods: An electronic search was conducted on Medline, Embase, Global Health, Web of Science and conference databases to identify studies describing interventions aimed at improving linkage to or retention in pre-ART care or initiation of ART. Additional searches were conducted to identify on-going trials on this topic, and experts in the field were contacted. An assessment of the risk of bias was conducted. Interventions were categorized according to key domains in the existing literature.

Results: A total of 11 129 potentially relevant citations were identified, of which 24 were eligible for inclusion, with the majority (n=21) from sub-Saharan Africa. In addition, 15 on-going trials were identified. The most common interventions described under key domains included: health system interventions (i.e. integration in the setting of antenatal care); patient convenience and accessibility (i.e. point-of-care CD4 count (POC) testing with immediate results, home-based ART initiation); behaviour interventions and peer support (i.e. improved communication, patient referral and education) and incentives (i.e. food support). Several interventions showed favourable outcomes: integration of care and peer supporters increased enrolment into HIV care, medical incentives increased pre-ART retention, POC CD4 testing and food incentives increased completion of ART eligibility screening and ART initiation. Most studies focused on the general adult patient population or pregnant women. The majority of published studies were observational cohort studies, subject to an unclear risk of bias.

Conclusions: Findings suggest that streamlining services to minimize patient visits, providing adequate medical and peer support, and providing incentives may decrease attrition, but the quality of the current evidence base is low. Few studies have investigated combined
interventions, or assessed the impact of interventions across the HIV cascade. Results from on-going trials investigating POC CD4 count testing, patient navigation, rapid ART initiation and mobile phone technology may fill the quality of evidence gap. Further high-quality studies on key population groups are required, with interventions informed by previously reported barriers to care.

Abstract Full-text [free] access

Editor’s notes: To maximise the impact of antiretroviral therapy (ART), people living with HIV should be diagnosed as early as possible, after acquiring HIV infection. They should be enrolled and retained in pre-ART care, initiated on ART and retained in ART care. And at the same time ensuring long-term adherence to achieve and maintain viral load suppression.

This review focuses on the first few steps in the treatment cascade. The authors review the evidence for activities that enhance the linkage from HIV testing to pre-ART care, retain people in pre-ART care and enhance the linkage to ART initiation. Streamlining services to minimize patient visits, providing adequate medical and peer support, and providing incentives appear to decrease attrition between HIV testing and ART initiation. However, the authors point out that most of the included studies looked at the effect of a single activity on a single point, in the continuum of care. There is a gap in evidence of the effect of combined activities and programmes across the continuum of care.

With the clear trend towards the earliest possible initiation of ART, the pre-ART care period will become much shorter. However there will be need for activities to improve immediate linkage from a positive test result, to ART initiation and ART care.