



## Quarterly Research Digest on HIV and Key Populations

September 2016

The LINKAGES Project is pleased to provide this quarterly compilation of article abstracts from the peer-reviewed literature related to HIV and key populations in Africa, Asia and Pacific, Eastern Europe, Latin America, the Caribbean, and the Middle East. Abstracts are grouped by key population (people who inject drugs, men who have sex with men, sex workers, and transgender people). For open access articles, we include the link to the full text.

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Key Populations General - 6

1. Schneiders, M. L., et al. "**Determining barriers to creating an enabling environment in Cambodia: results from a baseline study with key populations and police.**" *J Int AIDS Soc* 2016 19(4 Suppl 3): 20878. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4951539/pdf/JIAS-19-20878.pdf>

**INTRODUCTION:** Cambodian law enforcement's limited acceptance of harm reduction has hindered HIV program effectiveness. With funding from the Australian Department of Foreign Affairs and Trade, FHI 360 supported the Ministry of Interior to implement the Police Community Partnership Initiative (PCPI) in Cambodia's capital Phnom Penh. To guide this, FHI 360 conducted a baseline study examining police and key populations' attitudes and practices towards one another, including fear and occurrence of arrest.

**METHODS:** Between December 2012 and January 2013, a cross-sectional survey of 199 police post officers, 199 people who use drugs (PWUD) including people who inject drugs (PWID), 199 men who have sex with men (MSM), 200 transgender women (TGW) and 200 female entertainment workers (FEW) was conducted in five Phnom Penh districts. Eligible participants were  $\geq 18$  years, members of a key population from selected hotspots or police officers, deputy chiefs or chiefs.

**RESULTS:** Key populations' median age was 25 years (IQR: 22-30); 40% had completed only primary school. Police were male (99.5%), with median age 43 years (IQR: 30 to 47), and 45 and 25% high school and

university completion rates, respectively. Key populations feared arrest for carrying needles and syringes (67%), condoms (23%) and 19% felt afraid to access health services. Close to 75% of police reported body searching and 58% arresting key populations in the past six months for using drugs (64%), selling or distributing drugs (36%) or being violent (13%). Self-reported arrests (23% PWUD, 6% MSM, 6% TGW, 12% FEW;  $p < 0.05$ ), being verbally threatened (45% PWUD, 21% MSM, 25% TGW, 27% FEW;  $p < 0.001$ ) and body searched (44% PWUD, 28% MSM, 23% TGW, 8% FEW;  $p < 0.001$ ) was significantly higher among PWUD than other key populations. The majority (94%) of police believed arrest was an appropriate solution to reduce HIV and drug use and reported selling sex (88%) and carrying needles and syringes (55%) as valid reasons for arrest.

**CONCLUSIONS:** Key populations' fear of accessing harm reduction and health services and police's negative attitudes and practices towards key populations present major barriers to HIV prevention efforts in Cambodia. To create an enabling environment and ensure police are allies in the Cambodian HIV response, interventions should tackle underlying negative attitudes among police towards key populations and vice versa.

2. Scheibe, A., et al. "**Finding solid ground: law enforcement, key populations and their health and rights in South Africa.**" *J Int AIDS Soc* 2016 19(4 Suppl 3): 20872. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4951529/pdf/JIAS-19-20872.pdf>

**INTRODUCTION:** Sex workers, people who use drugs, men who have sex with men, women who have sex with women and transgender people in South Africa frequently experience high levels of stigma, abuse and discrimination. Evidence suggests that such abuse is sometimes committed by police officers, meaning that those charged with protection are perpetrators. This reinforces cycles of violence, increases the risk of HIV infection, undermines HIV prevention and treatment interventions and violates the constitutional prescriptions that the police are mandated to protect. This paper explores how relationship building can create positive outcomes while taking into account the challenges associated with reforming police strategies in relation to key populations, and vice versa.

**DISCUSSION:** We argue that relationships between law enforcement agencies and key populations need to be re-examined and reconstituted to enable appropriate responses and services. The antagonistic positioning, "othering" and blame assignment frequently seen in interactions between law enforcement officials and key populations can negatively influence both, albeit for different reasons. In addressing these concerns, we argue that mediation based on consensual dialogue is required, and can be harnessed through a process that highlights points of familiarity that are often shared, but not understood, by both parties. Rather than laying blame, we argue that substantive changes need to be owned and executed by all role-players, informed by a common language that is cognisant of differing perspectives.

**CONCLUSIONS:** Relational approaches can be used to identify programmes that align goals that are part of law enforcement, human rights and public health despite not always being seen as such. Law enforcement champions and representatives of key populations need to be identified and supported to promote interventions that are mutually reinforcing, and address perceived differences by highlighting commonality. Creating opportunities to share experiences in mediation can be beneficial to all role-players. While training is important, it is not a primary mechanism to change behaviour and attitudes.

3. Thomson, N., et al. "**From conflict to partnership: growing collaboration between police and NGOs in countries with concentrated epidemics among key populations.**" *J Int AIDS Soc* 2016 19(4 Suppl 3): 20939. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4951531/pdf/JIAS-19-20939.pdf>

**INTRODUCTION:** Between September 2012 and December 2015, a series of national and regional consultations, aimed at resolving a persistent dynamic of conflict between law enforcement agencies (LEAs) and civil society organizations (CSOs) working on issues of access to HIV services in high-priority countries for people who use drugs have been organized by the HIV/AIDS Section of the United Nations Office on Drugs and Crime, the Joint United Nations Programme on HIV/AIDS, the Law Enforcement and HIV Network

(LEAHN) and other international organizations. The aim of these consultations has been to understand, at a national and regional level, the key points of tension between police and CSOs and how to overcome these tensions to enhance access to and uptake of services by key populations, including people who inject drugs, sex workers, men who have sex with men and transgenders. This commentary briefly describes the methods, process, content and key outcomes of these consultations held across diverse number of countries and regions, including Africa, South East Asia, South Asia, Central Asia, Eastern Europe and Latin America.

**DISCUSSION:** While the context varies, this paper highlights that there are commonalities that drive a persistent dynamic of conflict and therefore also common methods for resolution of conflict and forging partnerships. Both policing and CSOs have key sectoral responsibilities and reform agendas to implement to ensure that as an individual agency they are able to meet their obligations as partners in the HIV response. Using the key outcomes of discussions and recommendations from these consultations and drawing on existing literature, the objective of this paper is to present a preliminary model that roadmaps the critical path from resolution of conflict to partnership between LEAs and CSOs.

**CONCLUSIONS:** This paper seeks to highlight that critical resources are required to support ongoing development and harnessing of partnerships between LEAs and CSOs and argues that these resources should not just come from global HIV funding mechanisms but should be part of a more mainstreamed security sector reform agenda that understands the mutual benefits that programming for human rights-based policing reform would have on HIV, development and security.

4. Hargreaves, J. R., et al. "**HIV-related stigma and universal testing and treatment for HIV prevention and care: design of an implementation science evaluation nested in the HPTN 071 (PopART) cluster-randomized trial in Zambia and South Africa.**" *Health Policy Plan* 2016.

**BACKGROUND:** Stigma and discrimination related to HIV and key populations at high risk of HIV have the potential to impede the implementation of effective HIV prevention and treatment programmes at scale. Studies measuring the impact of stigma on these programmes are rare. We are conducting an implementation science study of HIV-related stigma in communities and health settings within a large, pragmatic cluster-randomized trial of a universal testing and treatment intervention for HIV prevention in Zambia and South Africa and will assess how stigma affects, and is affected by, implementation of this intervention.

**METHODS/DESIGN:** A mixed-method evaluation will be nested within HIV prevention trials network (HPTN) 071/PopART (Clinical Trials registration number NCT01900977), a three-arm trial comparing universal door-to-door delivery of HIV testing and referral to prevention and treatment services, accompanied by either an immediate offer of anti-retroviral treatment to people living with HIV regardless of clinical status, or an offer of treatment in-line with national guidelines, with a standard-of-care control arm. The primary outcome of HPTN 071/PopART is HIV incidence measured among a cohort of 52 500 individuals in 21 study clusters. Our evaluation will include integrated quantitative and qualitative data collection and analysis in all trial sites. We will collect quantitative data on indicators of HIV-related stigma over 3 years from large probability samples of community members, health workers and people living with HIV. We will collect qualitative data, including in-depth interviews and observations from members of these same groups sampled purposively. In analysis, we will: (1) compare HIV-related stigma measures between study arms, (2) link data on stigma to measures of the success of implementation of the PopART intervention and (3) explore changes in the dominant drivers and manifestations of stigma in study communities and the health system.

**DISCUSSION:** HIV-related stigma may impede the successful implementation of HIV prevention and treatment programmes. Using a novel study-design nested within a large, community randomized trial we will evaluate the extent to which HIV-related stigma affects and is affected by the implementation of a comprehensive combination HIV prevention intervention including a universal test and treatment approach.

5. Pascom, A. R., et al. "**Point-of-care HIV tests done by peers, Brazil.**" *Bull World Health Organ* 2016 94(8): 626-30. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4969986/pdf/BLT.15.162461.pdf>

**PROBLEM:** Early diagnosis of infections with human immunodeficiency virus (HIV) is needed - especially among key populations such as sex workers, transgender people, men who have sex with men and people who use drugs.

**APPROACH:** The Brazilian Ministry of Health developed a strategy called Viva Melhor Sabendo ("live better knowing") to increase HIV testing among key populations. In partnership with nongovernmental organizations (NGOs), a peer point-of-care testing intervention, using an oral fluid rapid test, was introduced at social venues for key populations at different times of the day.

**LOCAL SETTING:** Key populations in Brazil can have 40 times higher HIV prevalence than the general population (14.8% versus 0.4%).

**RELEVANT CHANGES:** Legislation was reinterpreted, so that oral fluid rapid tests could be administered by any person trained in rapid testing by the health ministry. Between January 2014 and March 2015, 29 723 oral fluid tests were administered; 791 (2.7%) were positive. Among the key populations, transgender people had the greatest proportion of positive results (10.7%; 172/1612), followed by men who declared themselves as commercial sex workers (8.7%; 165/1889) and men who have sex with men (4.8%; 292/6055).

**LESSONS LEARNT:** The strategy improved access to HIV testing. Testing done by peers at times and locations suitable for key populations increased acceptance of testing. Working with relevant NGOs is a useful approach when reaching out to these key populations.

6. Crofts, N., et al. "**Police must join the fast track to end AIDS by 2030.**" *J Int AIDS Soc* 2016 19(4 Suppl 3): 21153. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4951534/pdf/JIAS-19-21153.pdf>

World leaders have committed to ending AIDS by 2030, but stigma and discrimination remain significant obstacles. In particular, police are critical, front-line determinants of risk for many people living with HIV (PLHIV) and members of other key affected populations (KAPs). The negative impact of adverse police behaviours and practices on HIV risk is well documented, and these risks undermine global efforts to end AIDS. Far less well documented, and less common, are attempts to ameliorate this impact by working to change police behaviours. This Special Issue seeks to help redress this imbalance by presenting a selection of original, provocative and important interventions from academics, police officers and other stakeholders concerned with documenting the potential for constructive, progressive and evidence-based approaches to the reduction of HIV risk. We recommend urgent boosting of efforts and funding to engage police in the HIV response. Among other strategies, this needs sustainable funding of programmes and their evaluation, and increased and continuing advocacy and education at all levels to match policy and law reform.

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## People Who Inject Drugs - 31

1. Guise, A., et al. "**Access to HIV treatment and care for people who inject drugs in Kenya: a short report.**" *AIDS Care* 2016: 1-5.

People who inject drugs (PWID) experience a range of barriers to HIV treatment and care access. The Kenyan government and community-based organisations have sought to develop HIV care for PWID. A principal approach to delivery in Kenya is to provide care from clinics serving the general population and for this to be linked to support from community-based organisations providing harm reduction outreach. This study explores accounts of PWID accessing care in Kenya to identify care barriers and facilitators. PWID accounts

were collected within a qualitative longitudinal study. In-depth interviews with PWID living with HIV (n = 44) are combined with interviews with other PWID, care providers and community observation. Results show that some PWID are able to access care successfully, whilst other PWID report challenges. The results focus on three principal themes to give insights into these experiences: the hardship of addiction and the costs of care, the silencing of HIV in the community and then discrimination and support in the clinic. Some PWID are able to overcome, often with social and outreach support, barriers to clinic access; for others, the challenges of addiction, hardship, stigma and discrimination are too constraining. We discuss how clinics serving the general population could be further adapted to increase access. Clinic-based care, even with community links, may, however, be fundamentally challenging for some PWID to access. Additional strategies to develop stand-alone care for PWID and also decentralise HIV treatment and care to community settings and involve peers in delivery should be considered.

2. Michalopoulos, L. M., et al. **"The association between psychosocial and structural-level stressors and HIV injection drug risk behavior among Malaysian fishermen: A cross-sectional study."** *BMC Public Health* 2016 16: 464. Online at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4890521/pdf/12889\\_2016\\_Article\\_3125.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4890521/pdf/12889_2016_Article_3125.pdf)

**BACKGROUND:** Malaysian fishermen have been identified as a key-affected HIV population with HIV rates 10 times higher than national rates. A number of studies have identified that psychosocial and structural-level stressors increase HIV injection drug risk behaviors. The purpose of this paper is to examine psychosocial and structural-level stressors of injection drug use and HIV injection drug risk behaviors among Malaysian fishermen.

**METHODS:** The study employs a cross-sectional design using respondent driven sampling methods. The sample includes 406 fishermen from Pahang state, Malaysia. Using multivariate logistic regressions, we examined the relationship between individual (depression), social (adverse interactions with the police), and structural (poverty-related) stressors and injection drug use and risky injection drug use (e.g., receptive and non-receptive needle sharing, frontloading and back-loading, or sharing drugs from a common container).

**RESULTS:** Participants below the poverty line had significantly lower odds of injection drug use (OR 0.52, 95 % CI: 0.27-0.99, p = 0.047) and risky injection drug use behavior (OR 0.48, 95 % CI: 0.25-0.93, p = 0.030). In addition, participants with an arrest history had higher odds of injection use (OR 19.58, 95 % CI: 9.81-39.10, p < 0.001) and risky injection drug use (OR 16.25, 95 % CI: 4.73-55.85, p < 0.001). Participants with depression had significantly higher odds of engaging in risky injection drug use behavior (OR 3.26, 95 % CI: 1.39-7.67, p = 0.007). Focusing on participants with a history of injection drug use, we found that participants with depression were significantly more likely to engage in risky drug use compared to participants below the depression cutoff (OR 3.45, 95 % CI: 1.23-9.66, p < 0.02).

**CONCLUSIONS:** Findings underscore the need to address psychosocial and structural-level stressors among Malaysian fishermen to reduce HIV injection drug risk behaviors.

3. Brown, S. E., et al. **"Attitudes toward medication-assisted treatment among fishermen in Kuantan, Malaysia, who inject drugs."** *J Ethn Subst Abuse* 2016: 1-17.

Fishermen who inject drugs represent an understudied group at high risk for HIV in Malaysia. This study describes fishing, drug use, and attitudes toward medication-assisted treatment (MAT) for opioid use disorders. Thirty-four male ethnic Malay fishermen completed semistructured interviews analyzed by content analysis. Analysis revealed four themes surrounding opioids, which they called ubat ("medicine"): (a) the fishing lifestyle facilitating substance use, (b) previous unsuccessful attempts to quit, (c) categorizing substances as haram or halal, and (d) attitudes toward MAT. Fishermen's environment permits substance use, including injecting drugs on boats. Fishermen expressed more positive attitudes toward methadone and negative attitudes toward buprenorphine.

4. Ma, Y., et al. **"Barriers to community-based drug dependence treatment: implications for police roles, collaborations and performance indicators."** *J Int AIDS Soc* 2016 19(4 Suppl 3): 20879. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4951535/pdf/JIAS-19-20879.pdf>

**INTRODUCTION:** Worldwide, people who use drugs (PWUD) are among the populations at highest risk for HIV infection. In China, PWUD are primarily sentenced to compulsory detention centres, in which access to healthcare, including HIV treatment and prevention services, is limited or non-existent. In 2008, China's 2008 Anti-Drug Law encouraged the development and use of community-based drug dependence rehabilitation, yet there is limited evidence evaluating the efficacy and challenges of this model in China. In this study, we explore these challenges and describe how cooperation between law enforcement and health departments can meet the needs of PWUD.

**METHODS:** In 2015, we conducted semi-structured, in-depth interviews with all four staff members and 16 clients of the Ping An Centre No. 1 for community-based drug treatment, three local police officers and three officials from the local Centre for Disease Control. Interviews explored obstacles in implementing community-based drug dependence treatment and efforts to resolve these difficulties. Transcripts were coded and analyzed with qualitative data analysis software (MAXQDA 11).

**RESULTS:** We identified three challenges to community-based drug treatment at the Ping An Centre No. 1: (1) suboptimal coordination among parties involved, (2) a divergence in attitudes towards PWUD and harm reduction between law enforcement and health officials and (3) conflicting performance targets for police and health officials that undermine the shared goal of treatment. We also identified the take-home methadone maintenance treatment model at the Ping An Centre No. 1 as an example of an early successful collaboration between the police, the health department and PWUD.

**CONCLUSIONS:** To overcome barriers to effective community-based drug treatment, we recommend aligning the goals of law enforcement and public health agencies towards health-based performance indicators. Furthermore, tensions between PWUD and police need to be addressed and trust between them fostered, using community-based treatment centres as mediators. The preliminary success of the take-home methadone maintenance treatment pilot can serve as an example of how collaboration with the police and other government agencies can meet the needs of PWUD and contribute to the success of community-based treatment.

5. Owczarzak, J., et al. **"A "Common Factors" Approach to Developing Culturally Tailored HIV Prevention Interventions."** *Health Educ Behav* 2016 43(3): 347-57.

The current dominant model of HIV prevention intervention dissemination involves packaging interventions developed in one context, training providers to implement that specific intervention, and evaluating the extent to which providers implement it with fidelity. Research shows that providers rarely implement these programs with fidelity due to perceived incompatibility, resource constraints, and preference for locally generated solutions. In this study, we used the concept of "common factors," or broad constructs shared by most evidence-based HIV prevention interventions, to train service providers to develop their own programs. We recruited eight Ukrainian HIV prevention organizations from regions with HIV epidemics concentrated among people who inject drugs. We trained staff to identify HIV risk behaviors and determinants, construct behavior change logic models, and develop and manualize an intervention. We systematically reviewed each manual to assess intervention format and content and determine whether the program met intervention criteria as taught during training. All agencies developed programs that reflected common factors of effective behavior change HIV prevention interventions. Each agency's program targeted a unique population that reflected local HIV epidemiology. All programs incorporated diverse pedagogical strategies that focused on skill-building, goal-setting, communication, and empowerment. Agencies struggled to limit information dissemination and the overall scope and length of their programs. We conclude that training service providers to develop their own programs based on common elements of effective behavior change interventions can potentially transform existing processes of program development, implementation, and capacity building. Expanding this model will require committed training and support resources.

6. Tinasti, K., et al. "**Discrimination, HIV among People Who Use Drugs, and the UNGASS 2016 on the World Drug Problem.**" *J Int Assoc Provid AIDS Care* 2016 15(4): 273-5.

7. Zelaya, C. E., et al. "**The Effect of a Multi-Level Intervention on the Initiation of Antiretroviral Therapy (ART) among HIV-Infected Men Who Inject Drugs and Were Diagnosed Late in Thai Nguyen, Vietnam.**" *PLoS One* 2016 11(8): e0161718. Online at: <http://journals.plos.org/plosone/article/asset?id=10.1371/journal.pone.0161718.PDF>

**BACKGROUND:** In Vietnam, an estimated 256,000 people are living with HIV, and 58% of HIV-infections reported are among people who inject drugs (PWID). While antiretroviral therapy (ART) is widely available in Vietnam, marginalized hard-to-reach male PWID, demonstrate significantly reduced and delayed access to ART.

**METHODS:** We investigated the effect of a randomized four-arm multi-level intervention trial on ART initiation among male PWID. Our analysis was conducted among a subset of trial participants (n = 136), who were newly diagnosed as HIV-infected, treatment naive, and eligible for ART (baseline late diagnosis). The trial arms included: 1, standard of care (HIV testing and counseling); 2, structural-level intervention (door-to-door communications and community video screenings); 3, individual-level intervention (counseling plus group support); and 4, individual-level plus structural-level intervention. In a time-to-event analysis, we used a non-parametric approach for competing risks to estimate cumulative incidence function (CIF) for ART initiation (event of interest) by arm and the difference in CIF for each trial arm as compared to Arm 1. Follow-up was conducted at 6, 12, 18 and 24 months. Data collection occurred from 2009 to 2013.

**FINDINGS:** By 24-months, 61.0% initiated ART, and 30.9% had died prior to ART initiation. In the first 6 months, participants in arm 4 (individual plus community intervention) had a 28% (95% confidence interval (CI): 6-50%) increased probability of initiating ART. Despite increasing coverage of ART in all arms throughout follow-up, participants in arm 4 retained a 31% (95% CI: 5-56%) increased probability of initiating ART. The individual and community components of the intervention were only effective when delivered together.

**CONCLUSIONS:** Marginalized, hard-to-reach men, who do not routinely engage in HIV services, and therefore come into care late, may benefit significantly from both individual counseling and group support, in combination with community-focused stigma reduction, when being referred and attempting to initiate urgently needed ART.

8. Teoh Bing Fei, J., et al. "**Effectiveness of Methadone Maintenance Therapy and Improvement in Quality of Life Following a Decade of Implementation.**" *J Subst Abuse Treat* 2016 69: 50-6.

Methadone maintenance therapy has been found to be an effective harm reduction treatment for opioid use disorder. However evidence of its benefits over a longer duration of treatment is limited as most studies focus on its short term benefits. As methadone maintenance therapy reaches a decade since its implementation in Malaysia, this study sought to examine the effectiveness of methadone treatment, change in quality of life among patients since entry to methadone treatment, as well as factors predicting the magnitude of change in quality of life. This study found that methadone maintenance therapy was effective in reducing heroin use, injecting practices and crime, and in improving in social functioning and physical symptoms, but not in reducing sex-related HIV risk-taking behavior. Though patients had a significantly better quality of life at follow-up than at entry to methadone maintenance therapy, the improvement in quality of life was not significantly greater as the duration of treatment increased. Age above 50 years old, human immunodeficiency virus (HIV) positive status and physical symptoms predicted a poorer improvement in quality of life between baseline and follow-up. On the other hand, patients with hepatitis B showed a greater improvement in quality of life in the social relationships domain compared to patients without hepatitis B. In conclusion, methadone maintenance therapy is an effective treatment for opioid use

disorder and improves quality of life but its benefits in further improving quality of life beyond a decade of treatment need further evaluation.

9. Sawangjit, R., et al. "**Effectiveness of Pharmacy-Based Needle/Syringe Exchange Program for People Who Inject Drugs: A Systematic Review and Meta-analysis.**" *Addiction* 2016.

**AIMS:** To critically appraise the evidence for effectiveness of pharmacy-based needle/syringe exchange programs (Pharmacy-based NSPs) on risk behaviors (RBs), HIV/HCV prevalence, and economic outcomes among people who inject drugs (PWID).

**DESIGN:** Systematic review and meta-analysis

**SETTING:** PRIMARY CARE SETTING

**PARTICIPANTS:** Of 1,568 studies screened, 14 studies with N = 7035 PWID were included. **MEASURES:** PubMed, Embase, Web of Sciences, CENTRAL, and Cochrane review databases were searched without language restriction from their inception through January 27, 2016. All published study designs with control group that reported the effectiveness of Pharmacy-based NSP on outcomes of interest were included. Outcomes of interest are RB, HIV/HCV prevalence, and economic outcomes. The estimates of pooled effects of these outcomes were calculated as pooled odds ratio (OR) with 95% CI using a random-effects model. Heterogeneity was assessed by I<sup>2</sup> and chi-squared tests.

**FINDINGS:** Most studies (9/14, 64.3%) were rated as having a serious risk of bias, while 28.6% and 7.1% were rated as having a moderate risk and low risk of bias, respectively. For sharing-syringe behavior, Pharmacy-based NSPs were significantly better than no NSPs for both main (OR: 0.50 (95%CI = 0.34-0.73; I<sup>2</sup> = 59.6%)) and sensitivity analyses, excluding studies with a serious risk of bias (OR: 0.52 (95%CI = 0.32-0.84; I<sup>2</sup> = 41.4%)). For safe syringe disposal and HIV/HCV prevalence, the evidence for Pharmacy-based NSPs compared with other NSP or No NSP was unclear since few of the studies reported this and most of them had a serious risk of bias. Compared with the total lifetime cost of 55,640 USD for treating a person with HIV infection, the HIV prevalence among PWID has to be at least 0.8% (for Pharmacy-based NSPs) or 2.1% (for other NSPs) to result in cost-savings.

**CONCLUSIONS:** Pharmacy-based needle/syringe exchange programs appear to be effective for reducing risk behaviors among people who inject drugs, though their effect on HIV/HCV prevalence and economic outcomes is unclear.

10. Vasylyeva, T. I., et al. "**Engagement in sex work does not increase HIV risk for women who inject drugs in Ukraine.**" *J Public Health (Oxf)* 2016.

**BACKGROUND:** We studied the association between sex in exchange for money, drugs or goods and HIV for women who inject drugs (WWID) in Ukraine, as previous data on this association from the post-USSR region are contradictory.

**METHODS:** Data come from the Integrated Bio-Behavioral Survey of Ukrainian people who inject drugs collected in 2011 using respondent-driven sampling. Participants were interviewed and tested with rapid HIV tests.

**RESULTS:** The sample included 2465 WWID (24% HIV positive); 214 (8.7%) of which reported having had exchange sex during the last 90 days. Crude analysis showed no association between exchange sex and HIV (OR = 0.644; 95% CI 0.385-1.077). No confounders were found to alter this result in a multivariable analysis. Further modeling showed that exchange sex modifies association between HIV and alcohol use: no association between HIV and daily alcohol use was found for those women who exchanged sex (OR = 1.699, 95% CI 0.737-3.956); while not engaging in sex work and daily using alcohol reduced odds to be HIV infected (OR = 0.586, 95% CI 0.389-0.885).



**CONCLUSIONS:** Exchange sex may have less impact on the HIV status of WWID who are exposed to injecting risks. The finding that daily alcohol use appears protective against HIV among WWID who do not exchange sex requires more research.

11. Ganju, D., et al. "**Factors associated with HIV testing among male injecting drug users: findings from a cross-sectional behavioural and biological survey in Manipur and Nagaland, India.**" *Harm Reduct J* 2016 13(1): 21. Online at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4915098/pdf/12954\\_2016\\_Article\\_110.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4915098/pdf/12954_2016_Article_110.pdf)

**BACKGROUND:** Although targeted interventions in India require all high-risk groups, including injecting drug users (IDUs), to test for HIV every 6 months, testing uptake among IDUs remains far from universal. Our study estimates the proportion of IDUs who have taken an HIV test and identifies the factors associated with HIV testing uptake in Nagaland and Manipur, two high HIV prevalence states in India where the epidemic is driven by injecting drug use.

**METHODS:** Data are drawn from the cross-sectional Integrated Behavioural and Biological Assessment (2009) of 1650 male IDUs from two districts each of Manipur and Nagaland. Participants were recruited using respondent-driven sampling (RDS). Descriptive data were analysed using RDSAT 7.1. Multivariate logistic regression analysis was undertaken using STATA 11 to examine the association between HIV testing and socio-demographic, behavioural and programme exposure variables.

**RESULTS:** One third of IDUs reported prior HIV testing, of whom 8 % had tested HIV-positive. Among those without prior testing, 6.2 % tested HIV-positive in the current survey. IDUs aged 25-34 years (adjusted odds ratio (OR) = 1.41; 95 % confidence interval (CI) = 1.03-1.93), married (Adjusted OR = 1.56; 95 % CI = 1.15-2.12), had a paid sexual partner (Adjusted OR = 1.64; 95 % CI = 1.24-2.18), injected drugs for more than 36 months (Adjusted OR = 1.38; 95 % CI = 1.06-1.81), injected frequently (Adjusted OR = 1.49; 95 % CI = 1.12-1.98) and had high-risk perception (Adjusted OR = 1.68; 95 % CI = 1.32-2.14) were more likely than others to test for HIV. Compared to those with no programme exposure, IDUs who received counselling, or counselling and needle/syringe services, were more likely to test for HIV.

**CONCLUSIONS:** HIV testing uptake among IDUs is low in Manipur and Nagaland, and a critical group of HIV-positive IDUs who have never tested for HIV are being missed by current programmes. This study identifies key sub-groups-including early initiators, short duration and less frequent injectors, perceived to be at low risk-for promoting HIV testing. Providing needles/syringes alone is not adequate to increase HIV testing; additionally, interventions must provide counselling services to inform all IDUs about HIV testing benefits, facilitate visits to testing centres and link those testing positive to timely treatment and care.

12. Kutsa, O., et al. "**Factors associated with physical and sexual violence by police among people who inject drugs in Ukraine: implications for retention on opioid agonist therapy.**" *J Int AIDS Soc* 2016 19(4 Suppl 3): 20897. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4951533/pdf/JIAS-19-20897.pdf>

**INTRODUCTION:** Ukraine's volatile HIV epidemic, one of the largest in Eastern Europe and Central Asia, remains concentrated in people who inject drugs (PWID). HIV prevalence is high (21.3% to 41.8%) among the estimated 310,000 PWID. Opioid agonist therapy (OAT) is the most cost-effective HIV prevention strategy there, yet OAT services are hampered by negative attitudes and frequent harassment of OAT clients and site personnel by law enforcement. This paper examines the various types of police violence that Ukrainian PWID experience and factors associated with the different types of violence, as well as the possible implications of police harassment on OAT retention.

**METHODS:** In 2014 to 2015, we conducted a cross-sectional survey in five Ukrainian cities with 1613 PWID currently, previously and never on OAT, using a combination of respondent-driven sampling, as well as random sampling. We analysed correlates of police violence by multiple factors, including by gender, and their effects on duration of OAT retention. Self-reported physical and sexual violence by police were the two

primary outcomes, while retention on OAT was used as a secondary outcome.

**RESULTS:** Overall, 1033 (64.0%) PWID reported being physically assaulted by police, which was positively correlated with currently or previously being on OAT (69.1% vs. 60.2%;  $p < 0.01$ ). HIV prevalence rates were higher in those receiving OAT than those not on OAT (47.6% vs. 36.1%;  $p < 0.01$ ). Police violence experiences differed by sex, with men experiencing significantly more physical violence, while women experienced more sexual violence (65.9% vs. 42.6%;  $p < 0.01$ ). For PWID who had successfully accessed OAT, longer OAT retention was significantly correlated both with sexual assault by police and fewer non-fatal overdoses.

**CONCLUSIONS:** Police violence is a frequent experience among PWID in Ukraine, particularly for those accessing OAT, an evidence-based primary and secondary HIV prevention strategy. Police violence experiences, however, were different for men and women, and interventions with police that address these sexual differences and focus on non-violent interactions with PWID to improve access and retention on OAT are crucial for improving HIV prevention and treatment goals for Ukraine.

13. Chu, C. E., et al. "**Hepatitis C Virus Treatment Access Among Human Immunodeficiency Virus and Hepatitis C Virus (HCV)-Coinfected People Who Inject Drugs in Guangzhou, China: Implications for HCV Treatment Expansion.**" *Open Forum Infect Dis* 2016 3(2): ofw065. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4943171/pdf/ofw065.pdf>

**BACKGROUND.** Hepatitis C virus (HCV) treatment access among human immunodeficiency virus (HIV)/HCV-coinfected people who inject drugs is poor, despite a high burden of disease in this population. Understanding barriers and facilitators to HCV treatment uptake is critical to the implementation of new direct-acting antivirals.

**METHODS:** We conducted in-depth interviews with patients, physicians, and social workers at an HIV treatment facility and methadone maintenance treatment centers in Guangzhou, China to identify barriers and facilitators to HCV treatment. We included patients who were in various stages of HCV treatment and those who were not treated. We used standard qualitative methods and organized data into themes.

**RESULTS:** Interview data from 29 patients, 8 physicians, and 3 social workers were analyzed. Facilitators and barriers were organized according to a modified Consolidated Framework for Implementation Research schematic. Facilitators included patient trust in physicians, hope for a cure, peer networks, and social support. Barriers included ongoing drug use, low HCV disease knowledge, fragmented reimbursement systems, HIV exceptionalism, and stigma.

**CONCLUSIONS:** Expanding existing harm reduction programs, HIV treatment programs, and social services may facilitate scale-up of direct-acting antivirals globally. Improving integration of ancillary social and mental health services within existing HIV care systems may facilitate HCV treatment access.

14. Simmons, R., et al. "**HIV Incidence Estimates Using the Limiting Antigen Avidity EIA Assay at Testing Sites in Kiev City, Ukraine: 2013-2014.**" *PLoS One* 2016 11(6): e0157179. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4898716/pdf/pone.0157179.pdf>

**OBJECTIVE:** To estimate HIV incidence and highlight the characteristics of persons at greatest risk of HIV in the Ukraine capital, Kiev. **METHOD:** Residual samples from newly-diagnosed persons attending the Kiev City AIDS Centre were tested for evidence of recent HIV infection using an avidity assay. Questions on possible risk factors for HIV acquisition and testing history were introduced. All persons ( $\geq 16$  yrs) presenting for an HIV test April'13-March'14 were included. Rates per 100,000 population were calculated using region-specific denominators.

**RESULTS:** During the study period 6370 individuals tested for HIV. Of the 467 individuals newly-diagnosed with HIV, 21 had insufficient samples for LAg testing. Of the remaining 446, 39 (8.7%) were classified as recent with an avidity index  $< 1.5OD_n$ , 10 were reclassified as long-standing as their viral load was  $< 1000$

copies/mL, resulting in 29 (6.5%) recent HIV infections. The only independent predictor for a recent infection was probable route of exposure, with MSM more likely to present with a recent infection compared with heterosexual contact [Odds Ratio 8.86; 95%CI 2.65-29.60]. We estimated HIV incidence at 21.5 per 100,000 population, corresponding to 466 new infections. Using population estimates for MSM and PWID, incidence was estimated to be between 2289.6 and 6868.7/100,000 MSM, and 350.4 for PWID.

**CONCLUSION:** A high proportion of persons newly-infected remain undiagnosed, with MSM disproportionately affected with one in four newly-HIV-diagnosed and one in three recently-HIV-infected. Our findings should be used for targeted public health interventions and health promotion.

15. Nguyen Bich, D., et al. "**HIV Patients' Preference for Integrated Models of Addiction and HIV Treatment in Vietnam.**" *J Subst Abuse Treat* 2016 69: 57-63.

**BACKGROUND:** Integrated care models for HIV and substance use disorder (SUD) care are proposed as a strategy for closing gaps in the HIV care continuum and decreasing HIV transmission. We examined attitudes regarding integration of HIV and SUD treatment among HIV-infected patients with illicit drug and unhealthy alcohol use.

**METHOD:** We conducted a cross-sectional survey of HIV-infected patients receiving care at 5 HIV clinics in Hanoi, Vietnam, regarding substance use and attitudes toward HIV and SUD treatment integration. We used multivariate logistic regression to identify correlates of integrated care preference.

**RESULT:** Among 312 participants with current or past illicit drug use or unhealthy alcohol use, 81.4% preferred integrated treatment for HIV and SUD. In multivariate analysis, completing a college education (aOR 0.22, 95% CI 0.08, 0.65), risk of depression (aOR 3.51, 95% CI 1.57, 7.87), ever having received medication-assisted treatment for opioid use disorder (aOR 4.20, 95% CI 1.65, 10.69), being comfortable discussing substance use with counselors/nurses (aOR 3.86, 95% CI 1.38, 10.81) and having discussed alcohol use with their health providers (aOR 2.34, 95% CI 1.09, 4.99) were associated with patients' preference for integrated care, after adjusting for age and gender.

**CONCLUSION:** Most, but not all, HIV-infected patients with substance use preferred integrated HIV and SUD treatment. Our findings suggest that policies to expand integration of HIV and SUD treatment will be well received by most patients, and that stand-alone treatment options should be preserved for a significant minority.

16. Hsu, C. S., et al. "**HIV/HCV Coinfection in Taiwan.**" *AIDS Rev* 2016 18(4).

Both human immunodeficiency virus (HIV) and hepatitis C virus (HCV) infection are important global public health problems with shared transmission routes. Although HIV/HCV coinfection is not uncommon, the prevalence rates vary significantly across different studies and regions. In Taiwan, injection drug users have become the major contributors to the HIV/AIDS epidemic since 2005. Because the prevalence of HCV infection is high in injection drug users, this HIV epidemic is also associated with a significant increase of HIV/HCV coinfection in Taiwan. To control Taiwan's HIV epidemic, Taiwan Centers for Disease Control (CDC) launched a harm-reduction program in 2006. The HIV epidemic, the percentage attributed to injection drug users, and the prevalence of HIV/HCV coinfection gradually declined thereafter. In this article, we aimed to thoroughly examine the current literatures of HIV/HCV coinfection in Taiwan and hope to provide a better understanding of the needs for the management of this coinfection. We conducted a narrative review and searched for literature from PubMed, Ovid MEDLINE, and the Cochrane Library database until August 2015. Studies relevant to the epidemiology and associated risk factors of HIV/HCV coinfection in Taiwan were examined and discussed.

17. Low, A. J., et al. "**Impact of Opioid Substitution Therapy on Antiretroviral Therapy Outcomes: A Systematic Review and Meta-Analysis.**" *Clin Infect Dis* 2016.

**BACKGROUND:** Human immunodeficiency virus (HIV)-infected people who inject drugs (PWID) frequently encounter barriers accessing and remaining on antiretroviral therapy (ART). Some studies have suggested that opioid substitution therapy (OST) could facilitate PWID's engagement with HIV services. We conducted a systematic review and meta-analysis to evaluate the impact of concurrent OST use on ART-related outcomes among HIV-infected PWID.

**METHODS:** We searched Medline, PsycInfo, Embase, Global Health, Cochrane, Web of Science, and Social Policy and Practice databases for studies between 1996 to November 2014 documenting the impact of OST, compared to no OST, on ART outcomes. Outcomes considered were coverage and recruitment onto ART, adherence, viral suppression, attrition from ART, and mortality. Meta-analyses were conducted using random-effects modeling, and heterogeneity assessed using Cochran Q test and I2 statistic.

**RESULTS:** We identified 4685 articles, and 32 studies conducted in North America, Europe, Indonesia, and China were included. OST was associated with a 69% increase in recruitment onto ART (hazard ratio [HR], 1.69; 95% confidence interval [CI], 1.32-2.15), a 54% increase in ART coverage (odds ratio [OR], 1.54; 95% CI, 1.17-2.03), a 2-fold increase in adherence (OR, 2.14; 95% CI, 1.41-3.26), and a 23% decrease in the odds of attrition (OR, 0.77; 95% CI, .63-.95). OST was associated with a 45% increase in odds of viral suppression (OR, 1.45; 95% CI, 1.21-1.73), but there was limited evidence from 6 studies for OST decreasing mortality for PWID on ART (HR, 0.91; 95% CI, .65-1.25).

**CONCLUSIONS:** These findings support the use of OST, and its integration with HIV services, to improve the HIV treatment and care continuum among HIV-infected PWID.

18. Wei, X., et al. "**Incident Infection and Resistance Mutation Analysis of Dried Blood Spots Collected in a Field Study of HIV Risk Groups, 2007-2010.**" *PLoS One* 2016 11(7): e0159266. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4944983/pdf/pone.0159266.pdf>

**OBJECTIVE:** To assess the utility of cost-effective dried blood spot (DBS) field sampling for incidence and drug resistance surveillance of persons at high risk for HIV infection.

**METHODS:** We evaluated DBS collected in 2007-2010 in non-clinical settings by finger-stick from HIV-positive heterosexuals at increased risk of HIV infection (n = 124), men who have sex with men (MSM, n = 110), and persons who inject drugs (PWID, n = 58). Relative proportions of recent-infection findings among risk groups were assessed at avidity index (AI) cutoffs of  $\leq 25\%$ ,  $\leq 30\%$ , and  $\leq 35\%$ , corresponding to an infection mean duration of recency (MDR) of 220.6, 250.4, and 278.3 days, respectively. Drug resistance mutation prevalence was compared among the risk groups and avidity indices.

**RESULTS:** HIV antibody avidity testing of all self-reported ARV-naïve persons (n = 186) resulted in 9.7%, 11.3% and 14.0% with findings within the 221, 250, and 278-day MDRs, respectively. The proportion of ARV-naïve MSM, heterosexuals, and PWID reporting only one risk category who had findings below the suggested 30% AI was 23.1%, 6.9% and 3.6% ( $p < 0.001$ ), respectively. MSM had the highest prevalence of drug resistance and the only cases of transmitted multi-class resistance. Among the ARV-experienced, MSM had disproportionately more recent-infection results than did heterosexuals and PWID.

**CONCLUSIONS:** The disproportionately higher recent-infection findings for MSM as compared to PWID and heterosexuals increased as the MDR window increased. Unreported ARV use might explain greater recent-infection findings and drug resistance in this MSM population. DBS demonstrated utility in expanded HIV testing; however, optimal field handling is key to accurate recent-infection estimates.

19. Azbel, L., et al. "**Intersecting epidemics of HIV, HCV, and syphilis among soon-to-be released prisoners in Kyrgyzstan: Implications for prevention and treatment.**" *Int J Drug Policy* 2016 37: 9-20.

**BACKGROUND:** Central Asia is afflicted with increasing HIV incidence, low antiretroviral therapy (ART) coverage and increasing AIDS mortality, driven primarily by people who inject drugs (PWID). Reliable data

about HIV, other infectious diseases, and substance use disorders in prisoners in this region is lacking and could provide important insights into how to improve HIV prevention and treatment efforts in the region.

**METHODS:** A randomly sampled, nationwide biobehavioural health survey was conducted in 8 prisons in Kyrgyzstan among all soon-to-be-released prisoners; women were oversampled. Consented participants underwent computer-assisted, standardized behavioural health assessment surveys and testing for HIV, HCV, HBV, and syphilis. Prevalence and means were computed, and generalized linear modelling was conducted, with all analyses using weights to account for disproportionate sampling by strata.

**RESULTS:** Among 381 prisoners who underwent consent procedures, 368 (96.6%) were enrolled in the study. Women were significantly older than men (40.6 vs. 36.5;  $p=0.004$ ). Weighted prevalence (%), with confidence interval (CI), for each infection was high: HCV (49.7%; CI: 44.8-54.6%), syphilis (19.2%; CI: 15.1-23.5%), HIV (10.3%; CI: 6.9-13.8%), and HBV (6.2%; CI: 3.6-8.9%). Among the 31 people with HIV, 46.5% were aware of being HIV-infected. Men, compared to women, were significantly more likely to have injected drugs (38.3% vs. 16.0%;  $p=0.001$ ). Pre-incarceration and within-prison drug injection, primarily of opioids, was 35.4% and 30.8%, respectively. Independent correlates of HIV infection included lifetime drug injection (adjusted odds ratio [AOR]=38.75;  $p=0.001$ ), mean number of years injecting (AOR=0.93;  $p=0.018$ ), mean number of days experiencing drug problems (AOR=1.09;  $p=0.025$ ), increasing duration of imprisonment (AOR=1.08;  $p=0.02$  for each year) and having syphilis (AOR=3.51;  $p=0.003$ ), while being female (AOR=3.06;  $p=0.004$ ) and being a recidivist offender (AOR=2.67;  $p=0.008$ ) were independently correlated with syphilis infection.

**CONCLUSION:** Drug injection, syphilis co-infection, and exposure to increased risk during incarceration are likely to be important contributors to HIV transmission among prisoners in Kyrgyzstan. Compared to the community, HIV is concentrated 34-fold higher in prisoners. A high proportion of undiagnosed syphilis and HIV infections presents a significant gap in the HIV care continuum. Findings highlight the critical importance of evidence-based responses within prison, including enhanced testing for HIV and sexually transmitted infections, to stem the evolving HIV epidemic in the region.

20. Mehta, S. H., et al. "Morbidity and Mortality Among Community-Based People Who Inject Drugs With a High Hepatitis C and Human Immunodeficiency Virus Burden in Chennai, India." *Open Forum Infect Dis* 2016 3(3): ofw121. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4942762/pdf/ofw121.pdf>

**BACKGROUND:** There are limited data on clinical outcomes of hepatitis C virus (HCV) infection from low- and middle-income countries. We characterize mortality and liver disease progression in a cohort of people who inject drugs (PWID) with high HCV burden.

**METHODS:** In a cohort of PWID in Chennai, India, 851 persons were observed semiannually. Information on death was obtained through verbal autopsy and liver disease progression, which was defined as an incident liver stiffness measurement of  $\geq 12.3$  kPa if it was  $< 12.3$  at baseline. Poisson and Cox regression were used to identify factors associated with mortality and disease progression, respectively.

**RESULTS:** At baseline, 36.9% of cases were infected with HCV, 16.7% were infected with human immunodeficiency virus (HIV), 71.6% had no or mild stiffness, 14.9% had moderate stiffness, and 13.5% had severe stiffness or cirrhosis. Mortality was significantly higher among those with moderate (mortality rate ratio [MRR] = 2.31) and severe stiffness (MRR = 4.86) at baseline, those with ongoing substance use, those who were HIV monoinfected and not on antiretroviral therapy (ART) (MRR = 6.59), and those who were HIV/HCV coinfecting regardless of ART status (MRR for no ART = 5.34; MRR for ART = 4.51). Of those with no or mild stiffness, 25.9% and 6.4% had evidence of progression to moderate and severe stiffness or cirrhosis, respectively; 38.3% of those with moderate stiffness had evidence of progression to severe stiffness or cirrhosis. Factors associated with progression included age, alcohol use, body mass index, and chronic HCV infection.

**CONCLUSIONS:** We observed significant morbidity and mortality primarily driven by untreated HIV,

HIV/HCV coinfection, and alcohol use. Even with improved access to HIV treatment, in the absence of HCV treatment, outcomes are unlikely to improve for HIV/HCV-coinfected persons.

21. Nasarruddin, A. M., et al. **"Opening up the HIV epidemic: a review of HIV seropositive status disclosure among people who inject drugs."** *AIDS Care* 2016: 1-8.

HIV status disclosure plays a crucial role in reducing risk behaviors of drug and sexual partners and thereby limiting HIV transmission. As people who inject drugs (PWID) bear a significant HIV burden and disclosure research among PWID is relatively few, we reviewed the literature to highlight what is known about disclosure among HIV-positive PWID. Searches of articles published from 2000 to 2015 yielded 17 studies addressing different aspects of disclosure, and results are presented by major themes. Our results suggest that despite the difficulties, most PWID (64-86%) disclose their HIV-positive status to trusted individuals (family members and intimate sexual partners) and to those who are known to be HIV-positive. Disclosure to non-intimate sexual partners and fellow drug users is relatively lower. Disclosure decision-making is primarily driven by the perceived positive and negative consequences of disclosure. Subsequent risk reduction practices following disclosure are influenced by the feeling of responsibility, as well as partners' willingness to accept risk. Cultural family values, ethnicity, and different localities were several contextual factors that affect patterns of disclosure and risk behaviors of PWID. Areas for future research are recommended.

22. Altice, F. L., et al. **"The perfect storm: incarceration and the high-risk environment perpetuating transmission of HIV, hepatitis C virus, and tuberculosis in Eastern Europe and Central Asia."** *Lancet* 2016.

Despite global reductions in HIV incidence and mortality, the 15 UNAIDS-designated countries of Eastern Europe and Central Asia (EECA) that gained independence from the Soviet Union in 1991 constitute the only region where both continue to rise. HIV transmission in EECA is fuelled primarily by injection of opioids, with harsh criminalisation of drug use that has resulted in extraordinarily high levels of incarceration. Consequently, people who inject drugs, including those with HIV, hepatitis C virus, and tuberculosis, are concentrated within prisons. Evidence-based primary and secondary prevention of HIV using opioid agonist therapies such as methadone and buprenorphine is available in prisons in only a handful of EECA countries (methadone or buprenorphine in five countries and needle and syringe programmes in three countries), with none of them meeting recommended coverage levels. Similarly, antiretroviral therapy coverage, especially among people who inject drugs, is markedly under-scaled. Russia completely bans opioid agonist therapies and does not support needle and syringe programmes-with neither available in prisons-despite the country's high incarceration rate and having the largest burden of people with HIV who inject drugs in the region. Mathematical modelling for Ukraine suggests that high levels of incarceration in EECA countries facilitate HIV transmission among people who inject drugs, with 28-55% of all new HIV infections over the next 15 years predicted to be attributable to heightened HIV transmission risk among currently or previously incarcerated people who inject drugs. Scaling up of opioid agonist therapies within prisons and maintaining treatment after release would yield the greatest HIV transmission reduction in people who inject drugs. Additional analyses also suggest that at least 6% of all incident tuberculosis cases, and 75% of incident tuberculosis cases in people who inject drugs are due to incarceration. Interventions that reduce incarceration itself and effectively intervene with prisoners to screen, diagnose, and treat addiction and HIV, hepatitis C virus, and tuberculosis are urgently needed to stem the multiple overlapping epidemics concentrated in prisons.

23. Polonsky, M., et al. **"Pre-incarceration police harassment, drug addiction and HIV risk behaviours among prisoners in Kyrgyzstan and Azerbaijan: results from a nationally representative cross-sectional study."** *J Int AIDS Soc* 2016 19(4 Suppl 3): 20880. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4951538/pdf/JIAS-19-20880.pdf>

**INTRODUCTION:** The expanding HIV epidemic in Azerbaijan and Kyrgyzstan is concentrated among people who inject drugs (PWID), who comprise a third of prisoners there. Detention of PWID is common but its impact on health has not been previously studied in the region. We aimed to understand the relationship between official and unofficial (police harassment) detention of PWID and HIV risk behaviours.

**METHODS:** In a nationally representative cross-sectional study, soon-to-be released prisoners in Kyrgyzstan (N=368) and Azerbaijan (N=510) completed standardized health assessment surveys. After identifying correlated variables through bivariate testing, we built multi-group path models with pre-incarceration official and unofficial detention as exogenous variables and pre-incarceration composite HIV risk as an endogenous variable, controlling for potential confounders and estimating indirect effects.

**RESULTS:** Overall, 463 (51%) prisoners reported at least one detention in the year before incarceration with an average of 1.3 detentions in that period. Unofficial detentions (13%) were less common than official detentions (41%). Optimal model fit was achieved ( $\chi^2=5.83$ ,  $p=0.44$ ; Goodness of Fit Index (GFI) GFI=0.99; Comparative Fit Index (CFI) CFI=1.00; Root Mean Square Error of Approximation (RMSEA) RMSEA=0.00; PCLOSE=0.98) when unofficial detention had an indirect effect on HIV risk, mediated by drug addiction severity, with more detentions associated with higher addiction severity, which in turn correlated with increased HIV risk. The final model explained 35% of the variance in the outcome. The effect was maintained for both countries, but stronger for Kyrgyzstan. The model also holds for Kyrgyzstan using unique data on within-prison drug injection as the outcome, which was frequent in prisoners there.

**CONCLUSIONS:** Detention by police is a strong correlate of addiction severity, which mediates its effect on HIV risk behaviour. This pattern suggests that police may target drug users and that such harassment may result in an increase in HIV risk-taking behaviours, primarily because of the continued drug use within prisons. These findings highlight the important negative role that police play in the HIV epidemic response and point to the urgent need for interventions to reduce police harassment, in parallel with interventions to reduce HIV transmission within and outside of prison.

24. Guise, A., et al. **"PrEP is not ready for our community, and our community is not ready for PrEP': pre-exposure prophylaxis for HIV for people who inject drugs and limits to the HIV prevention response."** *Addiction* 2016.

**BACKGROUND AND AIMS:** Pre-exposure prophylaxis for HIV, or 'PrEP', is the use of antiretroviral medicines by people who are HIV-negative to protect themselves against acquiring HIV. PrEP has shown efficacy for preventing HIV acquisition. Despite the potential, many concerns have been voiced by people who inject drugs (PWID) and their organizations. There is a need to engage with these views and ensure their integration in to policy and strategy. This paper presents PWID views on PrEP to foster the uptake of these opinions into scientific and policy debate around PrEP

**METHODS:** Critical analysis of a report of a community consultation led by the International Network of People who Use Drugs (INPUD).

**RESULTS:** The INPUD report highlights enthusiasm from PWID for PrEP, but also three main concerns: the feasibility and ethics of PrEP, its potential use as a substitute for other harm reduction strategies and how a focus on PrEP heralds a re-medicalization of HIV. Each concern relates to evidenced gaps in essential services or opposition to harm reduction and PWID human rights.

**CONCLUSIONS:** People who use drugs have fundamental concerns about the potential impacts of pre-exposure prophylaxis for HIV which reflect a 'fault line' in HIV prevention: a predominance of biomedical approaches over community perspectives. Greater community engagement in HIV prevention strategy is needed, or we risk continuing to ignore the need for action on the underlying structural drivers and social context of the HIV epidemic.

25. Yi, S., et al. **"Prevalence and correlates of psychological distress among drug users in Phnom Penh, Cambodia."** *Int J Drug Policy* 2016 36: 25-32.

**BACKGROUND:** Compared to the general population, drug users are at increased risk of both poor mental health and HIV infection. The aim of this study was to determine the prevalence and correlates of high

psychological distress among drug users in Cambodia. **METHODS:** In April 2014, a two-stage cluster sampling method was used to randomly select 169 drug users from hotspots in Phnom Penh. Psychological distress was measured using General Health Questionnaire (GHQ-12). Bivariate and multivariable analyses were conducted to identify factors associated with levels of psychological distress among this population.

**RESULTS:** Our study found high prevalence of attempted suicide (15.3%), drug related arrests (46.2%), and incarceration (31.4%). Of the 169 participants, 42.0% were found to have high levels of psychological distress, indicating poor mental health. After adjustment, high levels of psychological distress were independently associated with suicidal ideation ( $p < 0.001$ ), higher frequency of drug use ( $p = 0.02$ ), sharing of needles or syringes ( $p = 0.005$ ), and having been sent to a rehabilitation centre ( $p = 0.02$ ). In addition, participants who perceived their overall health as being poor or very poor were more likely to have high levels of psychological distress ( $p = 0.002$ ).

**CONCLUSION:** Integration of mental health within HIV and needle and syringe exchange programmes is required to address psychological distress among drug users in Cambodia. Health system interventions, such as screening, referral, and training of health providers, need to be strengthened. In addition, interventions addressing social determinants of mental health and mitigation of frequent arrests and improving conditions in rehabilitation centres are required.

26. Kakavand-Ghalehnoei, R., et al. "**Prevalence of human herpesvirus-8 among HIV-infected patients, intravenous drug users and the general population in Iran.**" *Sex Health* 2016 13(3): 295-8.

Studies looking at the frequency of human herpesvirus-8 (HHV-8) among Iranian blood donors have produced conflicting results. The aim of this study was to investigate the prevalence of HHV-8 DNA by using polymerase chain reaction methods among 168 healthy individuals, 60 intravenous drug users and 100 HIV-infected patients from Iran. The prevalence of HHV-8 was significantly higher among intravenous drug users (13.3%) compared with the general population (3.6%;  $P = 0.017$ ). The HHV-8 genome was mostly detected among intravenous drug users who displayed high-risk sexual behaviours. Moreover, the HHV-8 genome was also detected in 8% of HIV-infected patients. The present study findings support the likelihood that the transmission of HHV-8 is via a sexual route in the Iranian population.

27. Li, M. D., et al. "**Promoting Global Health - Prevention and Treatment of Substance Abuse and HIV in Asia.**" *J Neuroimmune Pharmacol* 2016 11(3): 379-82.

This special issue contains 20 papers including 3 Perspectives, 1 Brief Report, 6 Invited Reviews, and 10 Original Articles, which highlight the work by presenters at the second meeting of the biennial Conference Series to Promote Global Health held on April 22-24, 2015 in Hangzhou, Zhejiang, China. These papers focused on the prevalent substance misuse of amphetamine-type-stimulants and opioids, and the increasing prevalence of HIV-infection in Asian countries. The Conference Series is sponsored by the National Institute on Drug Abuse of the U.S. National Institutes of Health, with the goal of exchanging knowledge and ideas related to, and promoting international collaborative work on, the prevention and treatment of substance use disorders and HIV-infection, in order to promote health in Asian and Pacific Islanders and other populations.

28. Des Jarlais, D. C., et al. "**Prospects for ending the HIV epidemic among persons who inject drugs in Haiphong, Vietnam.**" *Int J Drug Policy* 2016 32: 50-6.

**BACKGROUND:** To examine the prospects for "ending the HIV epidemic" among persons who inject drugs (PWID) in Haiphong, Vietnam. Reaching an incidence of  $< 0.5/100$  person-years at risk (PY) was used as an operational definition for "ending the epidemic."

**METHODS:** A respondent driven sampling study of 603 PWID was conducted from September to October 2014. Current heroin use (verified with urine testing and marks of injection) was an eligibility requirement. A structured questionnaire was administered by trained interviewers to obtain demographic, drug use, and risk



behavior data; HIV counseling and testing and HCV testing was also conducted. Two methods (by assuming all new injectors were HIV negative at first injection and by slope of prevalence by years injecting) were used for estimating HIV among persons injecting for <5 years ("new injectors"). Comparisons were made to the HIV epidemic among PWID in New York City and modeling of the HIV epidemic in Can Tho province.

**RESULTS:** HIV prevalence was 25% in 2014, down from 68% in 2006 and 48% in 2009; overall HCV prevalence in the study was 67%. Among HIV seropositive PWID, 33% reported receiving antiretroviral treatment. The great majority (83%) of subjects reported pharmacies as their primary source of needles and syringes and self-reported receptive and distributive syringe sharing were quite low (<6%). Estimating HIV incidence among non-MSM male new injectors with the assumption that all were HIV negative at first injection gave a rate of 1.2/100 person-years (95% CI -0.24, 3.4). Estimating HIV incidence by the slope of prevalence by years injecting gave a rate of 0.8/100 person-years at risk (95% CI -0.9, 2.5).

**CONCLUSIONS:** The current HIV epidemic among PWID in Haiphong is in a declining phase, but estimated incidence among non-MSM new injectors is approximately 1/100 person-years and there is a substantial gap in provision of ART for HIV seropositives. Scaling up interventions, particularly HIV counseling and testing and antiretroviral treatment for all seropositive PWID, should accelerate the decline. Ending the epidemic is an attainable public health goal.

29. Vu, N. T., et al. "**The Relationship Between Methamphetamine Use, Sexual Sensation Seeking and Condomless Anal Intercourse Among Men Who Have Sex With Men in Vietnam: Results of a Community-Based, Cross-Sectional Study.**" *AIDS Behav* 2016.

This study assessed the relationship between methamphetamine use and condomless anal intercourse (CAI) among men who have sex with men (MSM) in Hanoi and Ho Chi Minh City, Vietnam. Of 622 MSM participants, 75.7% reported any CAI in the last three months, 23.2% reported engaging in sex work in the last three months, 21.1% reported group sex in the last twelve months (21.1%) and 14.3% had used methamphetamine for sex in the last three months. CAI was associated with living in Ho Chi Minh City vs. Hanoi, being versatile during anal sex, a greater degree of sexual sensation-seeking, and more strongly agreeing that withdrawal before ejaculation is effective in preventing HIV. Effect-modification analysis showed that recent sex-related methamphetamine use was related to a higher probability of CAI for men with low sexual sensationseeking scores. Methamphetamine assessment and/or interventions should be incorporated into HIV prevention and research with Vietnam's MSM population.

30. Lunze, K., et al. "**Sexual violence from police and HIV risk behaviours among HIV-positive women who inject drugs in St. Petersburg, Russia - a mixed methods study.**" *J Int AIDS Soc* 2016 19(4 Suppl 3): 20877. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4951542/pdf/JIAS-19-20877.pdf>

**INTRODUCTION:** Police violence against people who inject drugs (PWID) is common in Russia and associated with HIV risk behaviours. Sexual violence from police against women who use drugs has been reported anecdotally in Russia. This mixed-methods study aimed to evaluate sexual violence from police against women who inject drugs via quantitative assessment of its prevalence and HIV risk correlates, and through qualitative interviews with police, substance users and their providers in St. Petersburg, Russia.

**METHODS:** Cross-sectional analyses with HIV-positive women who inject drugs (N=228) assessed the associations between sexual violence from police (i.e. having been forced to have sex with a police officer) and the following behaviours: current drug use, needle sharing and injection frequency using multiple regression models. We also conducted in-depth interviews with 23 key informants, including PWID, police, civil society organization workers, and other stakeholders, to explore qualitatively the phenomenon of sexual violence from police in Russia and strategies to address it. We analyzed qualitative data using content analysis.

**RESULTS:** Approximately one in four women in our quantitative study (24.1%; 95% CI, 18.6%, 29.7%) reported sexual violence perpetrated by police. Affected women reported more transactional sex for drugs

or money than those who were not; however, the majority of those reporting sexual violence from police were not involved in these forms of transactional sex. Sexual violence from police was not significantly associated with current drug use or needle sharing but with more frequent drug injections (adjusted incidence rate ratio 1.43, 95% CI 1.04, 1.95). Qualitative data suggested that sexual violence and coercion by police appear to be entrenched as a norm and are perceived insurmountable because of the seemingly absolute power of police. They systematically add to the risk environment of women who use drugs in Russia.

**CONCLUSIONS:** Sexual violence from police was common in this cohort of Russian HIV-positive women who inject drugs. Our analyses found more frequent injection drug use among those affected, suggesting that the phenomenon represents an underappreciated human rights and public health problem. Addressing sexual violence from police against women in Russia will require addressing structural factors, raising social awareness and instituting police trainings that protect vulnerable women from violence and prevent HIV transmission.

31. Glasman, L. R., et al. "**Using Peer-Referral Chains with Incentives to Promote HIV Testing and Identify Undiagnosed HIV Infections Among Crack Users in San Salvador.**" *AIDS Behav* 2016 20(6): 1236-43.

In El Salvador, crack users are at high risk for HIV but they are not targeted by efforts to promote early HIV diagnosis. We evaluated the promise of peer-referral chains with incentives to increase HIV testing and identify undiagnosed HIV infections among networks of crack users in San Salvador. For 14 months, we offered HIV testing in communities with a high prevalence of crack use. For the following 14 months, we promoted chains in which crack users from these communities referred their peers to HIV testing and received a small monetary incentive. We recorded the monthly numbers of HIV testers, and their crack use, sexual risk behaviors and test results. After launching the referral chains, the monthly numbers of HIV testers increased significantly ( $Z = 6.90$ ,  $p < .001$ ) and decayed more slowly ( $Z = 5.93$ ,  $p < .001$ ), and the total number of crack-using testers increased nearly fourfold. Testers in the peer-referral period reported fewer HIV risk behaviors, but a similar percentage (~5 %) tested HIV positive in both periods. More women than men received an HIV-positive diagnosis throughout the study ( $\chi^2(1, N = 799) = 4.23$ ,  $p = .040$ ). Peer-referral chains with incentives can potentially increase HIV testing among networks of crack users while retaining a focus on high-risk individuals.

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## Men who have Sex with Men - 51

1. Volk, J. E., et al. "**Acceptability and feasibility of HIV self-testing among men who have sex with men in Peru and Brazil.**" *Int J STD AIDS* 2016 27(7): 531-6.

HIV self-testing has the potential to increase testing frequency and uptake. This pilot study assessed the feasibility and acceptability of HIV self-testing in a sample of sexually active men who have sex with men (MSM) in Peru and Brazil. Participants were trained to use a whole blood rapid HIV self-test and instructed to use the self-test monthly during this three-month study. Test acceptability was measured with self-reported use of the test at the one-month and three-month study visits, and test feasibility was assessed by direct observation of self-test administration at the final three-month visit. A total of 103 participants (52 in Peru and 51 in Brazil) were enrolled, and 86% completed the three-month study. Nearly all participants reported use of the self-test (97% at one-month and 98% at three-month visit), and all participants correctly interpreted the self-administered test results when observed using the test at the final study visit. HIV self-

testing with a blood-based assay was highly acceptable and feasible. HIV self-testing may have the potential to increase testing frequency and to reach high-risk MSM not currently accessing HIV-testing services.

2. Lee, C. H., et al. "**Anal Human Papillomavirus Infection among HIV-Infected Men in Korea.**" *PLoS One* 2016 11(8): e0161460. Online at: <http://journals.plos.org/plosone/article/asset?id=10.1371/journal.pone.0161460.PDF>

**BACKGROUND:** Little is known about the epidemiology on human papillomavirus (HPV) infection among HIV-infected men in Korea. The objective of this study was to determine the prevalence, genotype distribution and risk factors associated with anal HPV infection among HIV-infected men in Korea.

**METHODS:** A single-center cross-sectional study was conducted with HIV-infected men in Korea. Participants completed a detailed sexual behavior risk factor questionnaire. Anal samples were collected for cytology and HPV genotyping. Factors associated with anal HPV infection were assessed using multivariable logistic regression, stratifying by sexual behaviour.

**RESULTS:** A total of 201 HIV-infected men were included in the study: 133 were from men who have sex with men (MSM) and 68 from men who have sex with women (MSW). Any anal HPV infection was detected in 82.7% of HIV-infected MSM and in 51.5% of HIV-infected MSW ( $P < 0.001$ ). High-risk HPV (HR-HPV) prevalence was higher among MSM (47.4%) than MSW (25.0%;  $P = 0.002$ ). The HR-HPV types identified most frequently were HPV 16 (11%), HPV 18 (9.9%), and HPV 58 (5%) in MSM, and HPV 58(11%) and HPV 16 (8.9%) in MSW. Prevalence of any HPV types in 9-valent vaccine types was higher among MSM than MSW (47.4% vs 22.1%,  $P = 0.001$ ). Abnormal anal cytology was more commonly detected in MSM than MSW (42.9% vs.19.1%,  $P < 0.001$ ). In HIV-infected MSM, higher number of lifetime male sex partners was significantly associated with any anal HPV infection, but age was a significant risk factor associated with anal HR-HPV infection.

**CONCLUSION:** Anal HPV infection was highly prevalent in HIV-infected MSM in Korea, and also commonly found in HIV-infected MSW. In HIV-infected MSM, the significant risk factor for being infected with any HPV infection was lifetime number of male sexual partners, and with anal oncogenic HPV infection was age.

3. Oldenburg, C. E., et al. "**Antiretroviral pre-exposure prophylaxis preferences among men who have sex with men in Vietnam: results from a nationwide cross-sectional survey.**" *Sex Health* 2016.

**BACKGROUND:** The HIV/AIDS epidemic in Vietnam is concentrated in subgroups of the population, including men who have sex with men (MSM). Pre-exposure prophylaxis (PrEP) is a viable strategy for HIV prevention, but knowledge about and preferences for PrEP delivery among Vietnamese MSM are not well understood.

**METHODS:** In 2015, an online survey was conducted with recruitment via social networking websites for MSM and peer recruitment. A description of daily oral, long-acting injectable, and rectal microbicide formulations of PrEP was provided to participants. Participants were asked about their prior awareness of and interest in PrEP, and ranked their most preferred PrEP modality. Multivariable logistic regression models were used to assess factors associated with having heard of PrEP and preference for each PrEP modality.

**RESULTS:** Of 548 participants who answered demographic and PrEP-related questions, 26.8% had previously heard of PrEP and most (65.7%) endorsed rectal microbicides as their most preferred PrEP delivery modality. Commonly-cited perceived barriers to uptake of PrEP included concern about side-effects, perception about being HIV positive, and family or friends finding out about their sexual behaviour. In multivariable models, older participants less often endorsed rectal microbicides (adjusted odds ratio (AOR) 0.95 per year, 95% confidence interval (CI) 0.91-0.99) and more often endorsed long-acting injectables (AOR 1.08 per year, 95% CI 1.03 to 1.14) as their preferred PrEP modality. Participants who were willing to pay more for PrEP less often endorsed rectal microbicides (AOR 0.81, 95% CI 0.72-0.92) and more often endorsed long-acting injectables (AOR 1.17, 95% CI 1.01-1.35) and daily oral pills (AOR 1.16, 95% CI 1.00-1.35) as their preferred

form of PrEP.

**CONCLUSIONS:** A variety of PrEP modalities were acceptable to MSM in Vietnam, but low knowledge of PrEP may be a barrier to implementation.

4. McLean, S. A., et al. "**Association between sexual role and HIV status among Peruvian men who have sex with men seeking an HIV test: a cross-sectional analysis.**" *Int J STD AIDS* 2016 27(9): 783-9.

In Latin America, sexual role, sexual identity and sexual practices are intricately related; the roles activo, pasivo and moderno often encompass sexual identity and sexual practices. We aimed to understand the association between sexual role and HIV status in Peruvian men who have sex with men. HIV-testing services at Epicentro Salud, a Peruvian gay men's health centre, were paired with clinic data on demographics and sexual behaviour. Bidirectional stepwise logistic regression was conducted to determine associations between sexual role and HIV status. Of 366 clients who underwent HIV testing, 86 (23.5%) tested positive. There was a strong association between sexual role ('activo' or typically insertive, 'pasivo' or typically receptive, 'moderno' or typically versatile) and a positive HIV test ( $p = 0.002$ ). Compared to clients with an activo role, those who reported a pasivo (OR = 6.14) and moderno (OR = 6.26) role were more likely to test positive for HIV. Sexual role was associated with sexual identity (gay, straight and bisexual) and gender of partners in the past six months. Self-reported pasivo and moderno sexual roles were strongly associated with a positive HIV test result. Further research should examine differences in sexual practices between sexual role groups.

5. Hoagland, B., et al. "**Awareness and Willingness to Use Pre-exposure Prophylaxis (PrEP) Among Men Who Have Sex with Men and Transgender Women in Brazil.**" *AIDS Behav* 2016.

Antiretroviral pre-exposure prophylaxis (PrEP) is recommended to prevent HIV infection among high-risk men who have sex with men (MSM) though not available in Brazil where the HIV epidemic persists unabated in this group. This cross-sectional study describes PrEP awareness and willingness and associated factors among MSM and transvestite/transgender women (trans women) pre-screened for the PrEP Brasil study. Awareness was reported by 61.3 % of the participants and was associated with age, education, site, study period and prior HIV testing. Most participants (82.1 %) were willing to use PrEP, which was associated with site, study period, number of male condomless anal sexual partners and anal sex with HIV positive/unknown partners. PrEP information is need among young and less educated individuals. Willingness to use PrEP was high and future studies should be conducted to confirm PrEP acceptability and the characteristics of the population who chose to adopt this intervention.

6. Nugroho, A., et al. "**Behavioral interventions to reduce HIV risk behavior for MSM and transwomen in Southeast Asia: a systematic review.**" *AIDS Care* 2016: 1-7.

This systematic review aims to gain insights from existing literature from Southeast Asian countries to improve future HIV prevention programs for men who have sex with men (MSM) and transgender women (transwomen). We conducted a systematic search in six international databases for literature published prior to 1 January 2015. We included studies describing behavioral interventions targeting MSM and/or transwomen, and conducted in at least one Southeast Asian country. Five out of 575 screened studies met the inclusion criteria and reported a significant intervention effect on at least one outcome measure, that is, condom use (with casual or commercial partner), water-based lubricant use, number of sex partners, HIV prevention knowledge, or willingness to use pre-exposure prophylaxis. Peer education/outreach was the most commonly employed type of intervention in the five included studies and was usually delivered as an element of a larger intervention package, together with condom distribution and the provision of drop-in centers. Motivational interviewing was effective, while internet-based interventions appeared to be a viable platform for intervention delivery. Nevertheless, research on behavioral interventions among MSM and transwomen in Southeast Asia is limited. Future interventions should be culturally appropriate, theoretically grounded, and rigorously evaluated. Only then can we best address the HIV epidemic among MSM and transwomen in this region.

7. Qin, Q., et al. "**Changing trend of HIV, Syphilis and Hepatitis C among Men Who Have Sex with Men in China.**" *Sci Rep* 2016 6: 31081. Online at:  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4989164/pdf/srep31081.pdf>

Dearth of information regarding the trend and correlates of HIV, syphilis and Hepatitis C (HCV) in a country-wide sample of understudied though high-risk Chinese men who have sex with men (MSM) called for a comprehensive serial cross-sectional study. Using a multistage mixed-method strategy, 171,311 MSM from 107 selected cities/counties in 30 provinces of mainland China, were interviewed and tested. Descriptive, bivariate, multivariate and Cochran-Armitage trend analyses were conducted using SAS 9.2. During 2009-13, recent (71.5% to 78.6%,  $p < 0.001$ ) and consistent (40.4% to 48.8%,  $p < 0.001$ ) condom use as well as condom use during commercial anal sex (46.5% to 55.0%,  $p < 0.001$ ) were increasing. In contrast, commercial anal sex with male (11.9% to 7.1%,  $p < 0.001$ ) and drug use (1.9% to 0.8%,  $p < 0.001$ ) were decreasing over time. HIV prevalence increased gradually (5.5% to 7.3%,  $p < 0.001$ ), while syphilis (9.0% to 6.3%,  $p < 0.001$ ) and HCV prevalence (1.5% to 0.7%,  $p < 0.001$ ) decreased over time. A positive correlation was observed between HIV and syphilis prevalence ( $r = 0.38$ ). HIV infection was associated with HIV-related knowledge, services and injecting drug use. An increasing trend of HIV prevalence was observed during 2009-13 among MSM in China. While gradual reduction of risk behaviors along with syphilis and HCV prevalence supported expansion of testing and prevention services, increasing HIV burden called for deeper thematic investigations.

8. Brown, C. A., et al. "**Characterizing the Individual, Social, and Structural Determinants of Condom Use Among Men Who Have Sex with Men in Swaziland.**" *AIDS Res Hum Retroviruses* 2016 32(6): 539-46.

Within the broadly generalized HIV epidemic in Swaziland, men who have sex with men (MSM) have specific HIV acquisition and transmission risks. In the current era of expanding antiretroviral therapy-based prevention and treatment approaches, condom use remains a core component of mitigating these risks. A cross-sectional study characterizing the vulnerabilities for HIV among MSM in Swaziland was analyzed to describe factors associated with condom use at last sex with a male partner. Bivariate and multivariate logistic regression analyses were conducted to assess correlates of condom use at last sex with both casual and regular male partners. Disclosure of sexual practices to a healthcare provider and being able to count on other MSM to support condom use were significantly associated with condom use at last sex with a casual and a regular partner, respectively. Reporting difficulty insisting on condom use was inversely associated with condom use at last sex with both regular and casual partners. In addition, having faced legal discrimination was similarly inversely associated with condom use at last sex with a regular partner. Condom use among MSM in Swaziland may increase with improved partner communication, provider sensitization to encourage sexual disclosure, and the promotion of safer sex norms within MSM communities. These approaches, in combination with existing and emerging evidence of informed and human rights affirming prevention and HIV treatment approaches may reduce the incidence of HIV among MSM in Swaziland and all those in their sexual networks.

9. Wirtz, A. L., et al. "**Comparison of Respondent Driven Sampling Estimators to Determine HIV Prevalence and Population Characteristics among Men Who Have Sex with Men in Moscow, Russia.**" *PLoS One* 2016 11(6): e0155519. Online at:  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4889072/pdf/pone.0155519.pdf>

Analytically distinct estimators have been proposed for the calculation of population-based estimates derived from respondent-driven sampling (RDS), yet there have been few comparisons of the inferences from these estimators using empirical data. We compared estimates produced by unweighted analysis used to calculate sample proportions and by three available estimators that are used to calculate population proportions, RDS-I, RDS-II (Volz-Heckathorn), and Gile's RDS-SS. Data were derived from a cross-sectional, RDS study of men who have sex with men (MSM) conducted from October 2010 to April 2013 in Moscow, Russia (N = 1,376, recruitment depth: 31 waves). Analyses investigated the influence of key parameters: recruitment depth, homophily, and network size on sample and population estimates. Variability in results

produced by the estimators and recruitment depth were statistically compared using the coefficient of variation (CV). Sample proportions had the least variability across different recruitment depths, compared to the RDS estimators. Population estimates tended to differ at lower recruitment depth but were approximately equal after reaching sampling equilibrium, highlighting the importance of sampling to greater recruitment depth. All estimators incorporate inverse probability weighting using self-reported network size, explaining the similarities in across population estimates and the difference of these estimates relative to sample proportions. Current biases and limitations associated with RDS estimators are discussed.

10. Budhwani, H., et al. **"A comparison of younger and older men who have sex with men using data from Jamaica AIDS Support for Life: characteristics associated with HIV status."** *Int J STD AIDS* 2016 27(9): 769-75.

Jamaica is home to over 10% of the Caribbean's HIV-positive population. Men who have sex with men (MSM) have a higher prevalence of HIV compared to the general public. Thus, the purpose of this study is to assess characteristics associated with HIV, such as condom use and number of sexual partners, comparing young, those aged 18-24, to older, aged 25 and older, MSM in Jamaica. We hypothesised, and found support for the notion, that younger MSM would have a lower rate of some risky behaviours associated with HIV seropositivity. Service data for 160 self-selected MSM aged 18-62, from Kingston, Jamaica were analysed. The majority identified as homosexual (compared to bisexual), over half of respondents completed a tertiary level of education (e.g. any post-high school training), and 59.1% were employed. Almost all participants reported agreeing to use a condom when requested (93.6%). Prevalence of HIV was 17.8%, much lower than the 32% found in national studies, and is likely an underestimation reflecting patterns of this self-selected sample. Additionally, over one-third reported experiencing sexual abuse. Statistically significant relationships were found between age group and tertiary education, employment status, condom use with a regular partner, and sexual abuse. Younger MSM were more likely to have been sexually abused and were more likely to always wear a condom with their regular partner. A limitation of this study was the extent of missing data, restricting generalisability. However, by acknowledging the heterogeneity of the Jamaican MSM population, and subsequently evaluating behaviours across age groups, nuances emerge which highlight behavioural diversity. Findings may inform public health practitioners in developing targeted interventions.

11. Defechereux, P. A., et al. **"Depression and Oral FTC/TDF Pre-exposure Prophylaxis (PrEP) Among Men and Transgender Women Who Have Sex With Men (MSM/TGW)."** *AIDS Behav* 2016 20(7): 1478-88.

We conducted a longitudinal and cross-sectional analysis of depressive symptomology in iPrEx, a randomized, placebo-controlled trial of daily, oral FTC/TDF HIV pre-exposure prophylaxis (PrEP) in men and transgender women who have sex with men. Depression-related adverse events (AEs) were the most frequently reported severe or life-threatening AEs and were not associated with being randomized to the FTC/TDF arm (152 vs. 144 respectively OR 0.66 95 % CI 0.35-1.25). Center for Epidemiologic Studies Depression scale (CES-D) and a four questions suicidal ideation scale scores did not differ by arm. Participants reporting forced sex at anal sexual debut had higher CES-D scores (coeff: 3.23; 95 % CI 1.24-5.23) and were more likely to have suicidal ideation (OR 2.2; 95 % CI 1.09-4.26). CES-D scores were higher among people reporting non-condom receptive anal intercourse (ncRAI) (OR 1.46; 95 % CI 1.09-1.94). We recommend continuing PrEP during periods of depression in conjunction with provision of mental health services.

12. Wendi, D., et al. **"Depressive symptoms and substance use as mediators of stigma affecting men who have sex with men in Lesotho: a structural equation modeling approach."** *Ann Epidemiol* 2016 26(8): 551-6.

**PURPOSE:** Research on the relationship between sexual orientation-related stigma and risks for HIV among men who have sex with men (MSM) is limited. This study tests a hypothesis that substance use and depressive symptoms mediate the relationship between stigma in the health care system and HIV-related risk practices among MSM in Maseru, Lesotho.

**METHODS:** In 2014, we conducted a cross-sectional study among MSM in Lesotho accrued via respondent-driven sampling including a survey and biological testing for HIV. The hypothesis was tested using structural equation modeling.

**RESULTS:** Of the 318 participants, 22.3% had experienced stigma in the health care system. Stigma in the health care system was associated with depression (beta = 0.329, P = .018) and alcohol use (beta = 1.417, P = .001). Noninjection illicit drug use (beta = 0.837, P = .039) and alcohol use (beta = 0.282, P = .000) significantly predicted number of sex partners. Stigma was directly associated with condomless anal sex (beta = 0.441, P = .036), and no indirect association was found.

**CONCLUSIONS:** Alcohol use and depressive symptoms mediate the relationship between MSM stigma in the health care system and reported number of sex partners. The implications are significant with a focus on the need for comprehensive interventions addressing stigma and mental health when aiming to improve more proximal HIV-related risk practices for MSM.

13. Shaw, S. Y., et al. "**Descriptive Epidemiology of Factors Associated with HIV Infections Among Men and Transgender Women Who Have Sex with Men in South India.**" *LGBT Health* 2016 3(4): 292-9. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4976224/pdf/lgbt.2015.0023.pdf>

**PURPOSE:** Men and transgender women who have sex with men (MTWSM) continue to be an at-risk population for human immunodeficiency virus (HIV) infection in India. Identification of risk factors and determinants of HIV infection is urgently needed to inform prevention and intervention programming.

**METHODS:** Data were collected from cross-sectional biological and behavioral surveys from four districts in Karnataka, India. Multivariable logistic regression models were constructed to examine factors related to HIV infection. Sociodemographic, sexual history, sex work history, condom practices, and substance use covariates were included in regression models.

**RESULTS:** A total of 456 participants were included; HIV prevalence was 12.4%, with the highest prevalence (26%) among MTWSM from Bellary District. In bivariate analyses, district (P = 0.002), lack of a current regular female partner (P = 0.022), and reported consumption of an alcoholic drink in the last month (P = 0.004) were associated with HIV infection. In multivariable models, only alcohol use remained statistically significant (adjusted odds ratios: 2.6, 95% confidence intervals: 1.2-5.8; P = 0.02).

**CONCLUSION:** The prevalence of HIV continues to be high among MTWSM, with the highest prevalence found in Bellary district.

14. Sapsirisavat, V., et al. "**Differences Between Men Who Have Sex with Men (MSM) with Low CD4 Cell Counts at Their First HIV Test and MSM with Higher CD4 Counts in Bangkok, Thailand.**" *AIDS Behav* 2016.

Although HIV prevalence remains high among Bangkok's MSM early HIV testing as an entry point to ART has not been successfully implemented among in this population. Men who present late for initial HIV testing are a particular concern in the context of the Bangkok HIV epidemic, in that if long-term positives have had condomless sex during the time that they remained untreated they are likely to have been efficient transmitters of infection, to say nothing of the implications for their own health. A sequential sample of MSM who tested HIV positive, and CD4 counts, was taken at the Thai Red Cross Anonymous Clinic and two drop-in centers in Bangkok. Inclusion criteria were MSM aged >18 years, having not tested HIV positive earlier, who reported >=1 of the following in the previous 6 months: condomless sex with a male, being a sex worker, or having a sexual transmitted infection (STI) diagnosis. Analysis was conducted by distinguishing between three groups of CD4 counts: <200, 200-500, >500 cells/mu to identify the social and behavioral characteristics of the men who presented late for HIV testing. Median CD4 was 325 cells/mu(n = 95). MSM with initial CD4 < 200 cells/mu were significantly more likely to report problematic alcohol use. They were

also more likely to report receptive anal sex and more likely to be engaged in sex work. MSM with CD4 < 200 cells/ $\mu$ m were less likely to report recent HIV testing. Main barriers to HIV testing included being afraid of finding out that they were HIV positive and concerns about efficacy and side effects of HIV treatment. HIV stigma and concerns about treatment are still widespread and are potential barriers to HIV care among MSM in Bangkok. These barriers may work to keep men from finding out their positive HIV status in a timely manner. Thai MSM need to be made aware of the current availability of friendly HIV testing and ART services, and public health programs need to work to change their perceptions regarding ART itself. These same types of strategies might also work to destigmatize HIV and MSM within Thai society as a whole.

15. Ibragimov, U., et al. "**Estimating self-reported sex practices, drug use, depression, and intimate partner violence among MSM in China: a comparison of three recruitment methods.**" *AIDS Care* 2016: 1-7.

Men who have sex with men (MSM) are the group at highest risk for HIV in China. Researchers have used various recruitment methods to reach this population hidden from the hetero-normative culture. To inform future recruitment strategies, we compared estimates of socio-demographic characteristics, HIV risk behaviors, depression, and intimate partner violence (IPV) across three samples of MSM and money boys in Shanghai, China. Data were collected from three community-based samples of MSM and money boys (n = 1352) recruited via respondent-driven sampling (RDS) (n = 404), community popular opinion leaders (CPOL) (n = 385), and Internet and venue-based sampling (VBS) (n = 546). Different recruitment methods generated samples with statistically significant differences among a number of socio-demographic characteristics, sexual behaviors, drug use, depression scores, and exposure to IPV. Specifically, RDS participants had lower education (p = .002), income levels (p < .001), and were more likely to report condomless sex with a woman (p < .001). CPOL participants were younger (p < .001), more likely to report lifetime condomless anal sex (p = .009), more than 10 male partners in the past 30 days (p < .001), and were less likely to experience violence by a male intimate partner (p = .001). VBS participants had lowest depression score (p = .005) and were more likely to report lifetime drug use (p = .003). Our findings reinforce that each recruitment method may reach a sub-group of MSM with a specific risk profile, so multiple methods may be needed to obtain a representative sample of MSM. Interventions may use specific recruitment methods to target certain segments of the MSM population.

16. McKay, T. "**From marginal to marginalised: The inclusion of men who have sex with men in global and national AIDS programmes and policy.**" *Glob Public Health* 2016 11(7-8): 902-22.

In the last decade, gay men and other men who have sex with men (msm) have come to the fore of global policy debates about AIDS prevention. In stark contrast to programmes and policy during the first two decades of the epidemic, which largely excluded msm outside of the Western countries, the Joint United Nations Programme on HIV/AIDS now identifies gay men and other msm as 'marginalized but not marginal' to the global response. Drawing on archival data and five waves of United Nations Country Progress Reports on HIV/AIDS (2001-2012), this paper examines the productive power of international organisations in the development and diffusion of the msm category, and considers how international organisations have shaped the interpretation of msm in national policies and programmes. These data show that the increasing separation of sexual identity and sexual behaviour at the global level helped to construct notions of risk and disease that were sufficiently broad to accommodate the diverse interests of global policy-makers, activists, and governments. However, as various international and national actors have attempted to develop prevention programmes for msm, the failure of the msm category to map onto lived experience is increasingly apparent.

17. Tang, W., et al. "**Gay mobile apps and the evolving virtual risk environment: a cross-sectional online survey among men who have sex with men in China.**" *Sex Transm Infect* 2016.

**OBJECTIVES:** The expansion of gay sex-seeking application (gay app) use among men who have sex with men (MSM) may create new virtual risk environments that facilitate STI transmission. The goals of this study were to compare sexual behaviours between gay app users and non-users, and to describe sexual behaviours among gay app users in China.



**METHODS:** In October 2014, we recruited MSM from three Chinese gay websites. Data on sociodemographics, sexual behaviours and gay app use were collected. Logistic regressions were used to compare gay app users with non-app users and to identify factors associated with condomless sex among gay app users.

**RESULTS:** Of the 1424 participants, most were <30 years old (77.5%), single (83.8%) and self-identified as gay (72.9%). Overall, 824 (57.9%) had used gay apps for partner-seeking in the last 6 months. Among gay app users, 36.4% met their last partner within 24 hours of first message exchange through gay apps, and 59.0% negotiated condom use before in-person meeting. Compared with non-users, gay app users reported engaging in more condomless sex in the last 6 months (adjusted OR (aOR) =1.52, 95% CI 1.19 to 1.94) and more group sex (aOR =1.49, 95% CI 1.02 to 2.18). Negotiating condom use before in-person meeting was positively associated with condom use with partners met through gay apps (aOR =1.83, 95% CI 1.29 to 2.60).

**CONCLUSIONS:** Gay apps are linked to risky sexual behaviours and may foster a virtual risk environment for STI transmission among Chinese MSM. App-based interventions could target young gay men and facilitate condom negotiation.

18. Beyrer, C., et al. **"The global response to HIV in men who have sex with men."** *Lancet* 2016 388(10040): 198-206.

Gay, bisexual, and other men who have sex with men (MSM) continue to have disproportionately high burdens of HIV infection in countries of low, middle, and high income in 2016. 4 years after publication of a Lancet Series on MSM and HIV, progress on reducing HIV incidence, expanding sustained access to treatment, and realising human rights gains for MSM remains markedly uneven and fraught with challenges. Incidence densities in MSM are unacceptably high in countries as diverse as China, Kenya, Thailand, the UK, and the USA, with substantial disparities observed in specific communities of MSM including young and minority populations. Although some settings have achieved sufficient coverage of treatment, pre-exposure prophylaxis (PrEP), and human rights protections for sexual and gender minorities to change the trajectory of the HIV epidemic in MSM, these are exceptions. The roll-out of PrEP has been notably slow and coverage nowhere near what will be required for full use of this new preventive approach. Despite progress on issues such as marriage equality and decriminalisation of same-sex behaviour in some countries, there has been a marked increase in anti-gay legislation in many countries, including Nigeria, Russia, and The Gambia. The global epidemic of HIV in MSM is ongoing, and global efforts to address it remain insufficient. This must change if we are ever to truly achieve an AIDS-free generation.

19. Mimiaga, M. J., et al. **"A Group-Based Sexual Risk Reduction Intervention for Men Who Have Sex With Men in Ho Chi Minh City, Vietnam: Feasibility, Acceptability, and Preliminary Efficacy."** *Arch Sex Behav* 2016 45(6): 1493-500.

An emerging HIV epidemic can be seen among men who have sex with men (MSM) in Vietnam. There are currently no evidence-based behavioral sexual risk reduction interventions for MSM in this setting. Between October 2012 and June 2013, 100 high-risk MSM from Ho Chi Minh City were enrolled in an open pilot trial to assess feasibility and acceptability of a group-based, manualized sexual risk reduction intervention, and to preliminarily examine changes in primary and secondary outcomes. Participants completed a behavioral assessment battery and HIV testing at baseline, 3, and 6 months post-baseline. Over 80.0 % of the sample was <25 years old and 77.0 % identified as Bong kin ("hidden," masculine-appearing). Feasibility and acceptability of the program was evidenced by 87.0 % retention for the intervention sessions, 78.0 % completion of the 6 month assessment, and positive responses on evaluation forms and qualitative exit interviews. There was a decline in the number of condomless anal sex acts from baseline (6.32) to 3 month (2.06) and 6 month (2.49) follow-up ( $p < .0001$ ). These data support the need for further testing of this group-based, behavioral HIV prevention intervention to reduce sexual risk behavior among MSM in Vietnam in a randomized controlled efficacy trial.

20. Passaro, R. C., et al. "High HIV prevalence and the internet as a source of HIV-related service information at a community-based organization in Peru: a cross-sectional study of men who have sex with men." *BMC Public Health* 2016 16(1): 871. Online at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4997688/pdf/12889\\_2016\\_Article\\_3561.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4997688/pdf/12889_2016_Article_3561.pdf)

**BACKGROUND:** The HIV prevalence among men who have sex with men (MSM) in Peru (12.4 %) is 30 times higher than in the general adult population (0.4 %). It is critical for community-based organizations to understand how to provide HIV services to MSM while maximizing limited resources. This study describes the HIV prevalence and risk profiles of MSM seeking HIV services at a community-based organization in Lima, Peru. It then compares HIV prevalence between those who found out about the HIV services through different sources.

**METHODS:** A cross-sectional study of MSM seeking HIV services at Epicentro Salud in Lima, Peru for the first time between April 2012 and October 2013. We compared HIV prevalence among MSM who found out about Epicentro via online sources of information (N = 419), those using in-person sources (friends, partners) (N = 907), and sex workers (N = 140) using multivariable logistic regression models. **RESULTS:** HIV prevalence was 18.3 % overall: 23.2 % among MSM using online sources, 19.3 % among sex workers, and 15.9 % among MSM using in-person sources. However, when compared to the in-person group, sexual risk behaviors were not statistically higher among MSM using online sources. For the sex worker group, some behaviors were more common, while others were less. After adjusting for confounders, the odds of having HIV was higher for the online group (Odds Ratio = 1.61; 95 % Confidence Interval: 1.19-2.18), but not for the sex worker group (OR = 1.12; 95 % CI: 0.68-1.86), compared to the in-person group.

**CONCLUSION:** Internet-based promotion appears to successfully reach MSM at high risk of HIV in Peru. Outreach via this medium can facilitate HIV diagnosis, which is the critical first step in getting infected individuals into HIV care. For community-based organizations working in resource-limited settings, this may be an effective strategy for engaging a subset of high-risk persons in HIV care.

21. Gulov, K., et al. "HIV and STIs Among MSM in Tajikistan: Laboratory-Confirmed Diagnoses and Self-Reported Testing Behaviors." *AIDS Behav* 2016.

Little is known about the prevalence and associations of HIV/STI diagnoses and testing behaviors among men who have sex with men (MSM) in Tajikistan. A non-governmental organization conducted a cross-sectional study of MSM (n = 502) assessing laboratory-confirmed HIV/STI diagnoses, HIV/STI testing behavior in the past 6 months, sociodemographics, HIV/STI risk factors, and victimization/discrimination. Overall, 2.6 % were diagnosed with HIV, 2.2 % with syphilis, 17.6 % with chlamydia, and 56.0 % with herpes. Recent testing rates were low for HIV (35.9 %) and STIs (14.1 %). Compared to MSM who completed university, MSM with a high school education or less had lower odds of recent HIV and STI testing; however, victimization and healthcare discrimination were associated with greater odds of recent STI testing. Given the low HIV prevalence, there is a window of opportunity to extinguish the epidemic before it worsens. Non-governmental organizations are indispensable for expanding testing strategies because they can efficiently reach MSM in Tajikistan.

22. Simmons, R., et al. "HIV Incidence Estimates Using the Limiting Antigen Avidity EIA Assay at Testing Sites in Kiev City, Ukraine: 2013-2014." *PLoS One* 2016 11(6): e0157179. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4898716/pdf/pone.0157179.pdf>

**OBJECTIVE:** To estimate HIV incidence and highlight the characteristics of persons at greatest risk of HIV in the Ukraine capital, Kiev.

**METHOD:** Residual samples from newly-diagnosed persons attending the Kiev City AIDS Centre were tested for evidence of recent HIV infection using an avidity assay. Questions on possible risk factors for HIV acquisition and testing history were introduced. All persons (>/=16yrs) presenting for an HIV test April'13-March'14 were included. Rates per 100,000 population were calculated using region-specific denominators.

**RESULTS:** During the study period 6370 individuals tested for HIV. Of the 467 individuals newly-diagnosed with HIV, 21 had insufficient samples for LAg testing. Of the remaining 446, 39 (8.7%) were classified as recent with an avidity index  $<1.5\text{ODn}$ , 10 were reclassified as long-standing as their viral load was  $<1000$  copies/mL, resulting in 29 (6.5%) recent HIV infections. The only independent predictor for a recent infection was probable route of exposure, with MSM more likely to present with a recent infection compared with heterosexual contact [Odds Ratio 8.86; 95%CI 2.65-29.60]. We estimated HIV incidence at 21.5 per 100,000 population, corresponding to 466 new infections. Using population estimates for MSM and PWID, incidence was estimated to be between 2289.6 and 6868.7/100,000 MSM, and 350.4 for PWID.

**CONCLUSION:** A high proportion of persons newly-infected remain undiagnosed, with MSM disproportionately affected with one in four newly-HIV-diagnosed and one in three recently-HIV-infected. Our findings should be used for targeted public health interventions and health promotion.

23. Tohme, J., et al. **"HIV Prevalence and Demographic Determinants of Unprotected Anal Sex and HIV Testing among Male Refugees Who have Sex with Men in Beirut, Lebanon."** *AIDS Behav* 2016.

Men who have sex with men (MSM), the same as refugees are at higher risk for health issues including HIV infection. With the large influx of refugees to Lebanon, and to better understand HIV transmission in this setting, we explored the socio-demographic correlates of condom use and HIV testing among MSM refugees in Beirut, by surveying and testing 150 participants. 67 % self-identified as gay, 84.6 % of respondents reported unprotected anal intercourse (UAI) in the prior 3 months, and 56.7 % with men of positive or unknown HIV status (UAIPU). 2.7 % tested positive for HIV, and 36 % reported having engaged in sex work. Men in a relationship and men who self-identified as gay had higher odds of UAI, of ever been tested, but lower odds of UAIPU. HIV prevention and testing promotion efforts targeting MSM refugees need to account for how men self-identify in relation to their sexual behavior and relationship status. Such efforts also should place emphasis on MSM of lower socio-economic status.

24. Perez-Brumer, A. G., et al. **"HIV prevalence, sexual behaviours and engagement in HIV medical care among an online sample of sexually active MSM in Venezuela."** *Int J STD AIDS* 2016 27(9): 790-7.

In Venezuela, members of a social and sexual partner networking site for men who have sex with men (MSM) completed an online survey regarding sexual behaviours and HIV medical care. Among the 2851 respondents, self-reported HIV prevalence was 6.6%. Of participants living with HIV, 73.2% reported taking antiretroviral medication and 56.6% reported complete adherence within the past month. Participants living with HIV were more likely to be older (aOR = 1.04 per one-year increase in age, 95% CI: 1.02, 1.06) and diagnosed with a sexually transmitted infection in the previous year (aOR 3.26, 95% CI: 2.11, 5.04). These data provide further understanding of the HIV epidemic among MSM in Venezuela, and potential targets for HIV prevention interventions.

25. Konda, K. A., et al. **"HIV Status Communication with Sex Partners and Associated Factors Among High-Risk MSM and Transgender Women in Lima, Peru."** *AIDS Behav* 2016.

Men who have sex with men (MSM) and transgender women (TW) are key populations in the HIV epidemic. HIV status communication between sex partners can inform decisions regarding sexual behavior. MSM and TW were asked about HIV status communication with sex partners at baseline, 9- and 18-months. GEE models assessed associations with HIV status communication at baseline using prevalence ratios (PRs) and longitudinally using odds ratios (ORs). At baseline, those who had previously had an HIV test, disclosed their HIV status to 42 % of their sex partners. HIV status communication was associated with knowing their sex partner's HIV status at baseline (aPR 5.20) and longitudinally (aOR 1.86). HIV positivity at baseline was negatively associated with HIV status communication during follow-up (aOR 0.55). All reported aPRs and aORs have  $p < 0.05$ . Interventions promoting HIV status communication and more frequent HIV testing should be explored as current efforts are insufficient.

26. Chaillon, A., et al. "**HIV Trafficking between Blood and Semen during Early Untreated HIV Infection.**" *J Acquir Immune Defic Syndr* 2016.

**BACKGROUND:** Understanding the dynamics of HIV across anatomic compartments is important to design effective eradication strategies. Here, we evaluated viral trafficking between blood and semen during primary HIV infection (PHI) in six antiretroviral-naive men who have sex with men (MSM).

**METHODS:** Deep sequencing data of HIV env were generated from longitudinal blood plasma, peripheral blood mononuclear cells, and seminal plasma samples. The presence or absence of viral compartmentalization was assessed using tree-based Slatkin-Maddison and distance-based Fst methods. Phylogeographic analyses were performed using a discrete Bayesian asymmetric approach of diffusion with Markov jump count estimation to evaluate the gene flow between blood and semen during PHI. Levels of DNA from human herpesviruses and selected inflammatory cytokines were also measured on genital secretions collected at baseline to evaluate potential correlates of increased viral migration between anatomical compartments.

**RESULTS:** We detected varying degrees of compartmentalization in all six individuals evaluated. None of them maintained viral compartmentalization between blood and seminal plasma throughout all of the analyzed time points. Phylogeographic analyses revealed that the HIV population circulating in blood plasma populated the seminal compartment during the earliest stages of infection. In our limited dataset, we found no association between local inflammation or herpesvirus shedding at baseline and viral trafficking between semen and blood.

**CONCLUSIONS:** The early spread of virus from blood plasma to genital tract and the complex viral interplay between these compartments suggest that viral eradication efforts will require monitoring viral subpopulations in anatomical sites and viral trafficking during the course of infection.

27. Thomann, M. "**HIV vulnerability and the erasure of sexual and gender diversity in Abidjan, Cote d'Ivoire.**" *Glob Public Health* 2016 11(7-8): 994-1009.

In the fight against concentrated HIV epidemics, men who have sex with men (MSM) are often framed as a homogeneous population, with little attention paid to sexual and gender diversity and its impact on HIV vulnerability. This article draws on ethnographic research conducted in Abidjan, Cote d'Ivoire among les branches - a local term encompassing several categories of same-sex desire and practice. In the context of increased HIV prevention programming targeting Ivoirian sexual and gender minorities, such diversity is effectively erased. This obfuscation of difference has particularly negative impacts for travestis, who may be at higher risk for HIV infection, though research and prevention efforts in which they are grouped with 'MSM' render them underrepresented and make their vulnerability difficult to quantify. Branches whose class and/or ethnic backgrounds compound their stigmatised status as sexual and gender minorities also bear the burden of this exclusion. Furthermore, some branches deploy 'MSM' as a form of self-identification, further complicating who such categories represent. By highlighting the ways in which constructions of gender and sexuality within HIV/AIDS programming obscure complex social realities, I aim to reorient thinking around the development of purposeful HIV programming that engages the complexity of sexual and gender minority experience.

28. Kaplan, R. L., et al. "**In the name of brevity: The problem with binary HIV risk categories.**" *Glob Public Health* 2016 11(7-8): 824-34.

According to the 'Consolidated Guidelines on HIV Prevention, Diagnosis, Treatment and Care for Key Populations' there are five groups of people at elevated risk of HIV, including 'transgender women or transgender men who have receptive anal sex with men'. Although cost effectiveness strategies and best practice lessons recommend targeting specific populations for HIV prevention, existing risk categories lack specificity, and may in fact cause further confusion. Existing categories of risk often perpetuate notions of gender and sexuality that can erroneously exclude, alienate, and stigmatise those who are at the highest risk

and thus should be prioritised. We review the troubled history of the MSM category and the problematic conflation of trans feminine individuals and MSM in much of the existing HIV literature, and how this practice has stymied progress in slowing the HIV epidemic in the most at-risk groups, including those who do not fit neatly into binary notions of gender and sex. We draw from examples in the field, specifically among trans feminine people in Beirut and San Francisco, to illustrate the lived experiences of individuals whose identities may not fit into Euro-Atlantic constructs of HIV prevention categories.

29. Thienkrua, W., et al. "**Incidence of and temporal relationships between HIV, herpes simplex II virus, and syphilis among men who have sex with men in Bangkok, Thailand: an observational cohort.**" *BMC Infect Dis* 2016 16: 340. Online at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4957431/pdf/12879\\_2016\\_Article\\_1667.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4957431/pdf/12879_2016_Article_1667.pdf)

**BACKGROUND:** High HIV incidence has been detected among men who have sex with men (MSM) in Thailand, but the relationship and timing of HIV, herpes simplex virus 2 (HSV-2), and syphilis is unknown. This analysis measures incidence, temporal relationships, and risk factors for HIV, HSV-2, and syphilis among at-risk MSM in the Bangkok MSM Cohort Study.

**METHODS:** Between April 2006 and December 2010, 960 men negative for HIV, HSV-2, and syphilis at entry enrolled and contributed 12-60 months of follow-up data. Behavioral questionnaires were administered at each visit; testing for HIV antibody was performed at each visit, while testing for syphilis and HSV-2 were performed at 12 month intervals. We calculated HIV, HSV-2, and syphilis incidence, assessed risk factors with complementary log-log regression, and among co-infected men, measured temporal relationships between infections with Kaplan-Meier survival analysis and paired t-test.

**RESULTS:** The total number of infections and incidence density for HIV, HSV-2, and syphilis were 159 infections and 4.7 cases/100 PY (95 % Confidence Interval (CI): 4.0-5.4), 128 infections and 4.5/100 PY (95 % CI: 3.9-5.5), and 65 infections and 1.9/100 PY (95 % CI: 1.5-2.5), respectively. Among men acquiring >1 infection during the cohort period, mean time to HIV and HSV-2 infection was similar (2.5 vs. 2.9 years;  $p = 0.24$ ), while syphilis occurred significantly later following HIV (4.0 vs. 2.8 years,  $p < 0.01$ ) or HSV-2 (3.8 vs. 2.8 years,  $p = 0.04$ ) infection. The strongest independent predictor of any single infection in adjusted analysis was acquisition of another infection; risk of syphilis (Adjusted Hazards Ratio (AHR) = 3.49, 95 % CI: 1.89-6.42) or HIV (AHR = 2.26, 95 % CI: 1.47-3.48) acquisition during the cohort was significantly higher among men with incident HSV-2 infection. No single independent behavioral factor was common to HIV, HSV-2, and syphilis acquisition.

**CONCLUSION:** HIV and HSV-2 incidence was high among this Thai MSM cohort. However, acquisition of HIV and co-infection with either HSV-2 or syphilis was low during the time frame men were in the cohort. Evaluation of behavioral risk factors for these infections suggests different risks and possible different networks.

30. Wei, X., et al. "**Incident Infection and Resistance Mutation Analysis of Dried Blood Spots Collected in a Field Study of HIV Risk Groups, 2007-2010.**" *PLoS One* 2016 11(7): e0159266. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4944983/pdf/pone.0159266.pdf>

**OBJECTIVE:** To assess the utility of cost-effective dried blood spot (DBS) field sampling for incidence and drug resistance surveillance of persons at high risk for HIV infection.

**METHODS:** We evaluated DBS collected in 2007-2010 in non-clinical settings by finger-stick from HIV-positive heterosexuals at increased risk of HIV infection ( $n = 124$ ), men who have sex with men (MSM,  $n = 110$ ), and persons who inject drugs (PWID,  $n = 58$ ). Relative proportions of recent-infection findings among risk groups were assessed at avidity index (AI) cutoffs of  $\leq 25\%$ ,  $\leq 30\%$ , and  $\leq 35\%$ , corresponding to an infection mean duration of recency (MDR) of 220.6, 250.4, and 278.3 days, respectively. Drug resistance mutation prevalence was compared among the risk groups and avidity indices.

**RESULTS:** HIV antibody avidity testing of all self-reported ARV-naive persons (n = 186) resulted in 9.7%, 11.3% and 14.0% with findings within the 221, 250, and 278-day MDRs, respectively. The proportion of ARV-naive MSM, heterosexuals, and PWID reporting only one risk category who had findings below the suggested 30% AI was 23.1%, 6.9% and 3.6% ( $p < 0.001$ ), respectively. MSM had the highest prevalence of drug resistance and the only cases of transmitted multi-class resistance. Among the ARV-experienced, MSM had disproportionately more recent-infection results than did heterosexuals and PWID.

**CONCLUSIONS:** The disproportionately higher recent-infection findings for MSM as compared to PWID and heterosexuals increased as the MDR window increased. Unreported ARV use might explain greater recent-infection findings and drug resistance in this MSM population. DBS demonstrated utility in expanded HIV testing; however, optimal field handling is key to accurate recent-infection estimates.

31. Biello, K. B., et al. **"Is Involvement in Sex Work Associated with Engagement in HIV-Related Medical Care in Latin American Men Who Have Sex with Men? Results of a Large, Multinational Internet Survey."** *LGBT Health* 2016 3(3): 233-7. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4894012/pdf/lgbt.2015.0006.pdf>

Men who have sex with men (MSM) who engage in transactional sex are at increased HIV risk, and face complex barriers to care seeking. Among 2,035 men recruited through an MSM social/sexual networking website in Latin America and who reported being HIV-infected, 186 (9.1%) reported being paid for sex with another man in the past year. Engagement in transactional sex was associated with decreased odds of receiving medical care for HIV (AOR=0.57, 95% CI=0.37-0.85). No significant differences were seen in being on antiretroviral therapy (ART) or ART adherence once in care. Interventions in this population should focus on reducing barriers to engagement in care.

32. Hugo, J. M., et al. **"Knowledge, Attitudes and Beliefs regarding Post Exposure Prophylaxis among South African Men who have Sex with Men."** *AIDS Behav* 2016.

The Soweto Men's Study (2008), demonstrated an overall HIV prevalence rate of 13.2 %, with 10.1 % among straight-identified Men-who-have-sex-with-men (MSM), 6.4 % among bisexual-identified MSM and 33.9 % among gay-identified MSM. Behavioral interventions are imperative, but insufficient to prevent new HIV infections. Biomedical prevention of HIV offers a variety of combination prevention tools, including Post-exposure prophylaxis (PEP). PEP studies amongst MSM have been conducted in Amsterdam, Brazil and San Francisco, but never before in Africa. A cross-sectional, Internet-based survey was initiated to measure knowledge, attitudes and beliefs regarding PEP among South African MSM. Recruitment commenced in June 2014 and ran until October 2015. Participants were recruited through banner advertisements on Facebook.com and mambaonline.com, advertisements in the local gay media and at Health4Men (H4M) MSM-targeted clinics. Outreach workers distributed flyers advertising the study in their local communities. The survey was also made available on a computer at the H4M clinics in Cape Town and Johannesburg to reach MSM who may not have Internet access. A total of 408 men completed the survey. The majority of these men were under the age of 40, identified as gay/homosexual and were employed; 51 % (208/408) self-identified as black or of mixed race. In multivariate analysis participants who identified as gay had greater odds of having previously heard of PEP (AOR 1.91, 95 % CI 1.04, 3.51;  $p = 0.036$ ), as did those who reported their HIV status as positive (AOR 2.59, 95 % CI 1.47, 4.45;  $p = 0.001$ ). Participants with medical insurance had greater odds of having used PEP previously (AOR 2.67, 95 % CI 1.11, 6.43;  $p = 0.029$ ). Bivariate analysis showed that condomless sex in the past 6 months was not significantly associated with PEP knowledge ( $p = 0.75$ ) or uptake ( $p = 0.56$ ) of PEP. Our findings suggest a lack of PEP knowledge and uptake among non-gay identified, HIV negative and un-insured MSM. Focusing PEP programs on these men may potentially increase uptake. Increased knowledge needs to be provided to MSM who engage in risky sexual behaviors.

33. Dah, T. T., et al. **"[Men who have sex with men (MSM) and HIV infection in Ouagadougou, Burkina Faso: Knowledge, attitudes, practices and seroprevalence survey]."** *Rev Epidemiol Sante Publique* 2016.

**BACKGROUND:** Like many African countries, the issue of sex between men in Burkina Faso remains taboo

and sometimes result in social exclusion. This population which is vulnerable to HIV/AIDS is unknown, due to lack of scientific researches.

**AIM:** Our study aimed to characterize knowledge, attitudes and sexual practices and to estimate HIV seroprevalence among men having sex with men (MSM) living in Ouagadougou.

**METHODS:** A cross-sectional study was conducted in order to describe and analyze MSM living in Ouagadougou. They were recruited by snowball sampling, aged at least 18 years, and accepted to participate at the study. Data were collected by qualified interviewers through administered questionnaire face to face. HIV test was systematically proposed.

**RESULTS:** A total of 142 MSM were recruited during the study period. The sample was mostly composed of students or pupils (60.8%), single men (91%), with age range 18-30 years (96.5%). The HIV knowledge median score was 8/10. HIV seroprevalence was 8.9% (4.5-15.4).

**CONCLUSION:** Our study confirms the vulnerability of MSM living in Ouagadougou about HIV/AIDS given the high rate of HIV seroprevalence. Targeted interventions for prevention, care and scientific research are challenges for the authorities to sustain the achievements of the national fight against HIV and AIDS.

34. Castro, R., et al. "**The Men Who Have Sex with Men HIV Care Cascade in Rio de Janeiro, Brazil.**" *PLoS One* 2016 11(6): e0157309. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4907447/pdf/pone.0157309.pdf>

Brazil has a concentrated HIV epidemic and men who have sex with men (MSM) are disproportionately affected. Yet, no data is available on the HIV care cascade for this population. This study aimed to assess the HIV care cascade among MSM newly diagnosed through innovative testing strategies in Rio de Janeiro. Data from 793 MSM and travestites/transgender women (transwomen) tested for HIV at a non-governmental LGBT organization and a mobile testing unit located at a gay friendly venue were analyzed. A 12-month-after-HIV-diagnosis-censored cohort was established using CD4, viral load and combination antiretroviral therapy (cART) longitudinal data from those diagnosed with HIV. A cross-sectional HIV care cascade was built using this data. The relative risks of achieving each cascade-stage were estimated using generalized linear models according to age, self-declared skin-color, education, history of sexually transmitted diseases (STD), drug use and prior HIV testing. From Jan-2013 to Jan-2014, 793 MSM and transwomen were tested, 131 (16.5%) were HIV-infected. As of January 2015, 95 (72.5%) were linked to HIV care, 90 (68.7%) were retained in HIV care, 80 (61.1%) were on cART, and 50 (38.2%) were virally suppressed one year after HIV diagnosis. Being non-white (Relative risk [lower bound; upper bound of 95% confidence interval] = 1.709 [1.145; 2.549]) and having a prior HIV-test (1.954 [1.278; 2.986]) were associated with an HIV-positive diagnosis. A higher linkage (2.603 [1.091; 6.211]) and retention in care (4.510 [1.880; 10.822]) were observed among those who were older than 30 years of age. Using community-based testing strategies, we were able to access a high-risk MSM population and a small sample of transwomen. Despite universal care coverage and the test-and-treat policy adopted in Brazil, the MSM cascade of care indicates that strategies to increase linkage to care and prompt cART initiation targeted to these populations are critically needed. Interventions targeting non-white and young MSM should be prioritized.

35. Fujimoto, K., et al. "**Multiplex crack smoking and sexual networks: associations between network members' incarceration and HIV risks among high-risk MSM.**" *J Behav Med* 2016.

This study examined HIV risks in the multiplex crack-smoking and sexual networks of incarcerated drug-using men who have sex with men (MSM) and their associates. We estimated the associations between the network members' incarceration, self-reported HIV infection, and trading sex for money. Our analytic sample consisted of 508 crack-smoking or sexual partnerships of 273 high-risk MSM. Network members were specified by (1) crack smoking and sexual behavior or (2) crack smoking only. Longer incarceration of the crack-smoking and sexual network members was associated with self-reported HIV infection (AOR = 1.61,  $p < 0.05$ ), which extended up to one's partners' partners' partners (AOR = 1.63,  $p < 0.05$ ). Similar results were

found for trading sex (AOR = 2.77,  $p < 0.05$ ). The findings of the study call for the development of a system-level HIV intervention among former incarcerated MSM and their associates.

36. Tomori, C., et al. "**Perspectives on Sexual Identity Formation, Identity Practices, and Identity Transitions Among Men Who Have Sex With Men in India.**" *Arch Sex Behav* 2016.

Men who have sex with men (MSM) remain at high risk for HIV infection. Culturally specific sexual identities, encompassing sexual roles, behavior, and appearance, may shape MSM's experiences of stigmatization and discrimination, and affect their vulnerability to HIV. This multi-site qualitative study ( $n = 363$ ) encompassing 31 focus group discussions (FGDs) and 121 in-depth interviews (IDIs) across 15 sites in India investigated sexual identity formation, identity practices, and transitions and their implications for HIV prevention. IDIs and FGDs were transcribed, translated, and underwent thematic analysis. Our findings document heterogeneous sexual identity formation, with MSM who have more gender nonconforming behaviors or appearance reporting greater family- and community-level disapproval, harassment, violence, and exclusion. Concealing feminine aspects of sexual identities was important in daily life, especially for married MSM. Some participants negotiated their identity practices in accordance with socioeconomic and cultural pressures, including taking on identity characteristics to suit consumer demand in sex work and on extended periods of joining communities of hijras (sometimes called TG or transgender women). Participants also reported that some MSM transition toward more feminine and hijra or transgender women identities, motivated by intersecting desires for feminine gender expression and by social exclusion and economic marginalization. Future studies should collect information on gender nonconformity stigma, and any changes in sexual identity practices or plans for transitions to other identities over time, in relation to HIV risk behaviors and outcomes.

37. Tomori, C., et al. "**The prevalence and impact of childhood sexual abuse on HIV-risk behaviors among men who have sex with men (MSM) in India.**" *BMC Public Health* 2016 16: 784. Online at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4983056/pdf/12889\\_2016\\_Article\\_3446.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4983056/pdf/12889_2016_Article_3446.pdf)

**BACKGROUND:** Childhood sexual abuse (CSA) is a significant global public health problem, which is associated with negative psychosocial outcomes and high-risk sexual behaviors in adults. Men who have sex with men (MSM) often report higher prevalence of CSA history than the general population, and CSA may play a key role in MSM's greater vulnerability to HIV.

**METHODS:** This study examined the prevalence of CSA history and its impact on the number of recent HIV-related risk behaviors (unprotected anal intercourse, high number of male and female sexual partners, alcohol use, drug use, and sex work in prior 6 months) and lifetime risk behaviors and experiences (high number of lifetime male and female sexual partners, early sexual debut, injection drug use, sex work, and intimate partner violence) among 11,788 adult MSM recruited via respondent driven sampling across 12 sites in India, with additional insights from thematic analysis of qualitative research with 363 MSM from 15 sites.

**RESULTS:** Nearly a quarter (22.4 %) of participants experienced CSA, with substantially higher prevalence of CSA in the South and among kothis (feminine sexual identity). Qualitative findings revealed that older, trusted men may target young and, especially, gender nonconforming boys, and perpetrators' social position facilitates nondisclosure. CSA may also initiate further same-sex encounters, including sex work. In multivariable analysis, MSM who experienced CSA had 21 % higher rate of recent (adjusted rate ratio [aRR = 1.21], 95 % confidence interval [CI]: 1.14-1.28), and 2.0 times higher lifetime (aRR = 2.04, 95 % CI: 1.75-2.38) HIV-related behaviors/experiences compared with those who did not.

**CONCLUSION:** This large, mixed-methods study found high overall prevalence of CSA among MSM (22.4 %), with substantially higher prevalence among MSM residing in the South and among more feminine sexual identities. Qualitative findings highlighted boys' vulnerabilities to CSA, especially gender nonconformity, and CSA's role in further sexual encounters, including sex work. Additionally, CSA was associated with an elevated rate of recent, and an even higher rate of lifetime HIV-related risk factors. Our results suggest an acute need



for the development of CSA prevention interventions and the integration of mental health services for MSM with histories of CSA as part of HIV-prevention efforts.

38. Stahlman, S., et al. **"The Prevalence of Sexual Behavior Stigma Affecting Gay Men and Other Men Who Have Sex with Men Across Sub-Saharan Africa and in the United States."** *JMIR Public Health Surveill* 2016 2(2): e35. Online at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4978863/pdf/publichealth\\_v2i2e35.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4978863/pdf/publichealth_v2i2e35.pdf)

**BACKGROUND:** There has been increased attention for the need to reduce stigma related to sexual behaviors among gay men and other men who have sex with men (MSM) as part of comprehensive human immunodeficiency virus (HIV) prevention and treatment programming. However, most studies focused on measuring and mitigating stigma have been in high-income settings, challenging the ability to characterize the transferability of these findings because of lack of consistent metrics across settings.

**OBJECTIVE:** The objective of these analyses is to describe the prevalence of sexual behavior stigma in the United States, and to compare the prevalence of sexual behavior stigma between MSM in Southern and Western Africa and in the United States using consistent metrics.

**METHODS:** The same 13 sexual behavior stigma items were administered in face-to-face interviews to 4285 MSM recruited in multiple studies from 2013 to 2016 from 7 Sub-Saharan African countries and to 2590 MSM from the 2015 American Men's Internet Survey (AMIS), an anonymous Web-based behavioral survey. We limited the study sample to men who reported anal sex with a man at least once in the past 12 months and men who were aged 18 years and older. Unadjusted and adjusted prevalence ratios were used to compare the prevalence of stigma between groups.

**RESULTS:** Within the United States, prevalence of sexual behavior stigma did not vary substantially by race/ethnicity or geographic region except in a few instances. Feeling afraid to seek health care, avoiding health care, feeling like police refused to protect, being blackmailed, and being raped were more commonly reported in rural versus urban settings in the United States ( $P < .05$  for all). In the United States, West Africa, and Southern Africa, MSM reported verbal harassment as the most common form of stigma. Disclosure of same-sex practices to family members increased prevalence of reported stigma from family members within all geographic settings ( $P < .001$  for all). After adjusting for potential confounders and nesting of participants within countries, AMIS-2015 participants reported a higher prevalence of family exclusion ( $P = .02$ ) and poor health care treatment ( $P = .009$ ) as compared with participants in West Africa. However, participants in both West Africa ( $P < .001$ ) and Southern Africa ( $P < .001$ ) reported a higher prevalence of blackmail. The prevalence of all other types of stigma was not found to be statistically significantly different across settings.

**CONCLUSIONS:** The prevalence of sexual behavior stigma among MSM in the United States appears to have a high absolute burden and similar pattern as the same forms of stigma reported by MSM in Sub-Saharan Africa, although results may be influenced by differences in sampling methodology across regions. The disproportionate burden of HIV is consistent among MSM across Sub-Saharan Africa and the United States, suggesting the need in all contexts for stigma mitigation interventions to optimize existing evidence-based and human-rights affirming HIV prevention and treatment interventions.

39. Maiorana, A., et al. **"'Proyecto Orgullo', an HIV prevention, empowerment and community mobilisation intervention for gay men and transgender women in Callao/Lima, Peru."** *Glob Public Health* 2016 11(7-8): 1076-92.

We used qualitative, quantitative, and observational methods to assess the feasibility, acceptability, and potential efficacy of Proyecto Orgullo (PO), a pilot community mobilisation intervention to decrease sexual risk, promote health-seeking behaviours, and facilitate personal and community empowerment among gay men (GM) and transgender women (TW) in Peru. PO was adapted from Mpowerment and Hermanos de Luna y Sol, two US interventions. PO included six interrelated core elements: (1) Self-reflection Small Group sessions; (2) Supporting peers in HIV prevention; (3) Mobilisation Activities addressing HIV, GM/TW issues,

and community empowerment; (4) A Core Group (staff + GM/TW volunteers) designing/implementing those activities; (5) A Project Space; (6) Publicity. PO included specific components for TW, but promoted that GM/TW, who historically have not worked well together, collaborate for a common goal. We found that PO was embraced by GM/TW. PO positively influenced GM/TW's HIV prevention beliefs, self-efficacy, and behaviours; provided social support and created community; facilitated individual and community empowerment; achieved that GM/TW collaborate; and established a functional Community Centre for socialising/conducting mobilisation activities. Community mobilisation strategies, lacking from HIV prevention efforts in Peru but considered key to HIV prevention, can help improve health-seeking behaviours and consolidate social norms supporting preventive behaviours among GM/TW.

40. Sapsirisavat, V., et al. **"Psychosocial and Behavioral Characteristics of High-Risk Men Who Have Sex with Men (MSM) of Unknown HIV Positive Serostatus in Bangkok, Thailand."** *AIDS Behav* 2016.

HIV prevalence remains high in men who have sex with men (MSM) in Bangkok. Even though resources for HIV testing and treatment are available for all, a large proportion of MSM still do not get HIV tested. We studied high risk MSM who are unaware of their HIV status to help maximize effectiveness of our resources. Convenience sampling was conducted among MSM who came for HIV testing at the Thai Red Cross Anonymous Clinic and two popular drop-in centers in Bangkok. Inclusion criteria were MSM aged >18 years, have not been tested positive for HIV, who reported  $\geq 1$  of the following in the previous 6 months: condomless sex with a male, being a sex worker, or having a sexual transmitted infection diagnosis. Audio-Computer-Assisted Self-Interview was used to assess psychosocial profile, sexual risks, and HIV testing patterns prior to being informed of their HIV positive status. Among 499 high-risk MSM enrolled, the median age was 24.8 years and 112 (22 %) tested HIV-positive. Among the HIV-positive participants, 92 % self-identified as gay (versus bisexual), 39 % attained a bachelors degree or higher, 65 % had monthly income 10,000-29,999 baht (\$280-830 USD), 10 % had vaginal or anal sex with a woman in the past 12 months, 39 % had condomless receptive sex with men and 21 % went to Lat Phrao to find a sexual partner. Compared to HIV negative MSM, HIV-positive MSM had less HIV testing: 31 % had ever been tested for HIV, 12 % had been tested in the past 6 months; but were more likely to guess correctly their positive status (31 %). Regarding psychosocial variables among HIV-positive MSM, 7 % had regular methamphetamine use in the past 3 months, 10 % had >2 sources of discrimination, and 8 % had >2 sources of discrimination due to being MSM. In multivariable model, age<30 year old, self-identified as gay, had monthly income <50,000 baht (\$1400 USD), had anal sex with men in past 12 months, had >2 sources of discrimination because of being MSM, did not get HIV test in past 6 months, and guess of positive HIV were significantly associated with HIV positive status. Young MSM with lower socioeconomic status (SES) should be prioritized for innovative approaches to promoting awareness and uptake of HIV testing. Societal stigmatization of MSM should be addressed as a potential barrier to uptake of voluntary HIV testing. Resilience factors among these marginalized MSM who still test frequently and remain HIV-negative despite residing in a context with community viral loads and discrimination should also be studied in order to curb the HIV epidemic in Bangkok.

41. Tohme, J., et al. **"Psycho-social Correlates of Condom Use and HIV Testing among MSM Refugees in Beirut, Lebanon."** *AIDS Behav* 2016.

MSM refugees have to deal with personal challenges and social/structural adversaries based on their refugee status on top of their sexual identity. To better customize interventions beside this population, we explored psycho-social and structural correlates of condom use and HIV testing in Lebanon by surveying and testing 150 participants. 67 % self-identified as gay. 84.6 % reported any unprotected anal intercourse (UAI) with men in the prior 3 months. Those who engaged in UAI, were least comfortable with a doctor, didn't know where to get free HIV testing, experienced discrimination based on their refugee status and spent more time with their refugee peers, were less inclined to have seen a doctor in the past 12 month or knew where to get free HIV testing. Ever having been HIV tested was associated with being comfortable with medical doctors, knowing where to get HIV testing and spending time with other peer refugees. HIV prevention and testing promotion efforts targeting MSM refugees need to account for structural barriers, while fighting discrimination is crucial for a healthy sexual identity development.

42. Ibragimov, U., et al. **"Qualitative examination of enacted stigma towards gay and bisexual men and related health outcomes in Tajikistan, Central Asia."** *Glob Public Health* 2016: 1-15.

Gay and bisexual men (GBM) in Tajikistan are an extremely stigmatised group at high risk for sexually transmitted infections and HIV. However, there is a paucity of research on how and in what way stigma affects their lives. We conducted a qualitative study to examine the impact of stigma on GBM's lives in Tajikistan, focusing on stigma enactors, settings, factors affecting vulnerability of GBM and health consequences. Eight individual in-depth interviews and 3 focus-group discussions with 13 participants (N = 21) from GBM community were conducted in two cities of Tajikistan. Results reveal that police frequently engage in blackmail and perpetrate sexual and physical violence against GBM. Service providers often discriminate against GBM limiting their access to health and legal services. Exposure to stigma results in chronic stress affecting mental health of GBM. Fear of disclosure, low social cohesion, absence of prominent opinion leaders and activists reduce resilience of GBM community to stigma. State-sanctioned violations of human rights of marginalised populations and lack of effective legal protection mechanisms have enabled widespread harassment of GBM. These findings warrant further research on stigma leading to the development of culturally adapted and tailored multilevel structural interventions, including broad legal and policy reforms.

43. Chen, J., et al. **"Reducing the risk of HIV transmission among men who have sex with men: A feasibility study of the motivational interviewing counseling method."** *Nurs Health Sci* 2016.

HIV prevalence among Chinese men who have sex with men has rapidly increased in recent years. In this randomized, controlled study, we tested the feasibility and efficacy of motivational interviewing to reduce high-risk sexual behaviors among this population in Changsha, China. Eighty men who have sex with men were randomly assigned to either the intervention group, in which participants received a three-session motivational interviewing intervention over 4 weeks, or the control group, in which participants received usual counseling from peer educators. High-risk behavior indicators and HIV knowledge level were evaluated at baseline and 3 months after the intervention. Motivational interviewing significantly improved consistent anal condom use. However, there was no significant change in consistent condom use for oral sex or in the number of sexual partners over time. HIV knowledge scores improved equally in both groups. This study demonstrated that an intervention using motivational interviewing is feasible and results in increased condom use during anal sex for Chinese men who have sex with men. However, further work must be done to increase the use of condoms during oral sexual encounters.

44. Vu, N. T., et al. **"The Relationship Between Methamphetamine Use, Sexual Sensation Seeking and Condomless Anal Intercourse Among Men Who Have Sex With Men in Vietnam: Results of a Community-Based, Cross-Sectional Study."** *AIDS Behav* 2016.

This study assessed the relationship between methamphetamine use and condomless anal intercourse (CAI) among men who have sex with men (MSM) in Hanoi and Ho Chi Minh City, Vietnam. Of 622 MSM participants, 75.7% reported any CAI in the last three months, 23.2% reported engaging in sex work in the last three months, 21.1% reported group sex in the last twelve months (21.1%) and 14.3% had used methamphetamine for sex in the last three months. CAI was associated with living in Ho Chi Minh City vs. Hanoi, being versatile during anal sex, a greater degree of sexual sensation-seeking, and more strongly agreeing that withdrawal before ejaculation is effective in preventing HIV. Effect-modification analysis showed that recent sex-related methamphetamine use was related to a higher probability of CAI for men with low sexual sensationseeking scores. Methamphetamine assessment and/or interventions should be incorporated into HIV prevention and research with Vietnam's MSM population.

45. Tao, J., et al. **"Relationship of Stigma and Depression Among Newly HIV-Diagnosed Chinese Men Who Have Sex with Men."** *AIDS Behav* 2016.

Little is known about the relationship between HIV stigma and depression among newly diagnosed HIV-

infected men who have sex with men (MSM). We measured HIV-related stigma and current depression using standard scales among 367 Chinese MSM who had been diagnosed very recently with HIV infection, analyzing key associations with multivariable ordinal logistic regression. Current depression prevalence was 36 %. Median scores for felt, vicarious, and internalized stigma were 17, 2, and 5, respectively, each on a 0-30 scale. A one-point increase in the total stigma score was associated with a 4 % increase in the odds of current depression [adjusted odds ratio (aOR) = 1.04, 95 % confidence interval (CI) 1.03-1.05]. Internalized stigma had the strongest association with depression (aOR = 1.09, 95 % CI 1.07-1.12). Effective interventions to address coping with HIV-related stigma immediately following HIV-diagnosis might help reduce depression, improve long-term mental health, and improve engagement in their care.

46. Pan, S. W., et al. "**Religion and HIV sexual risk among men who have sex with men in China.**" *J Acquir Immune Defic Syndr* 2016.

**BACKGROUND:** Religion can profoundly impact the sociocultural contexts that shape sexual HIV vulnerability among men who have sex with men (MSM). However, the relationship between religion and HIV vulnerability remains poorly understood for MSM in China, where religious affiliations and practices are rapidly increasing.

**METHODS:** Using cross-sectional survey data collected in Beijing and Tianjin, China from 2013-2014 (n=400), this study tests three hypotheses regarding religion and HIV sexual risk: (1) HIV vulnerabilities and testing patterns among religiously affiliated MSM are lower than for areligious MSM, (2) Religiosity is inversely associated with HIV vulnerabilities and testing, and (3) The magnitude of inverse association between religiosity and HIV vulnerabilities/ testing will be stronger among Christian and Muslim MSM than Buddhist and areligious MSM.

**RESULTS:** Compared to areligious participants, Buddhists had higher odds of reporting unprotected anal intercourse (UAI) (adjusted odds ratio (AOR): 2.06, 95% confidence interval (CI): 1.13-3.75) and more male sex partners (AOR: 1.95, 1.16-3.27); while Muslims had lower odds of reporting UAI (AOR: 0.33, 95% CI: 0.15-0.73) and higher odds of reporting male circumcision (AOR: 3.04, 95% CI: 1.45-6.40). Reporting of forced sex was associated with more frequent participation in social religious activities (AOR: 1.25, 95% CI: 1.02-1.52) and private religious activities (AOR: 1.30, 95% CI: 1.04-1.61). Among Christians, participation in private religious activities was associated with lower odds of reporting anal intercourse (AOR: 0.49, 95% CI: 0.27-0.88).

**CONCLUSION:** The sustained growth of multiple religious traditions in China appears to have important implications for HIV vulnerability among religious minority MSM.

47. Stahlman, S., et al. "**Respondent-driven sampling as a recruitment method for men who have sex with men in southern sub-Saharan Africa: a cross-sectional analysis by wave.**" *Sex Transm Infect* 2016 92(4): 292-8.

**OBJECTIVES:** Respondent-driven sampling (RDS) is a popular method for recruiting men who have sex with men (MSM). Our objective is to describe the ability of RDS to reach MSM for HIV testing in three southern African nations.

**METHODS:** Data collected via RDS among MSM in Lesotho (N=318), Swaziland (N=310) and Malawi (N=334) were analysed by wave in order to characterise differences in sample characteristics. Seeds were recruited from MSM-affiliated community-based organisations. Men were interviewed during a single study visit and tested for HIV. chi(2) tests for trend were used to examine differences in the proportions across wave category.

**RESULTS:** A maximum of 13-19 recruitment waves were achieved in each study site. The percentage of those who identified as gay/homosexual decreased as waves increased in Lesotho (49% to 27%, p<0.01). In Swaziland and Lesotho, knowledge that anal sex was the riskiest type of sex for HIV transmission decreased across waves (39% to 23%, p<0.05, and 37% to 19%, p<0.05). The percentage of participants who had ever

received more than one HIV test decreased across waves in Malawi (31% to 12%,  $p < 0.01$ ). In Lesotho and Malawi, the prevalence of testing positive for HIV decreased across waves (48% to 15%,  $p < 0.01$  and 23% to 11%,  $p < 0.05$ ). Among those living with HIV, the proportion of those unaware of their status increased across waves in all study sites although this finding was not statistically significant.

**CONCLUSIONS:** RDS that extends deeper into recruitment waves may be a promising method of reaching MSM with varying levels of HIV prevention needs.

48. Garrett, R., et al. **"A Review of Social Media Technologies Across the Global HIV Care Continuum."** *Curr Opin Psychol* 2016 9: 56-66.

HIV remains one of the main health global threats of the 21st century. There is a great need to reach HIV at-risk and HIV+ populations across the HIV care continuum to improve HIV prevention, testing, and treatment. New technologies, such as Social Media (SM) and Social Networking Sites (SNS) have shown early promise in HIV research studies. To assess the state of research on the use of SM/SNSs across the HIV continuum, we conducted a systematic literature review on HIV-related research using SM during the last 10 years. A total of 44 papers were identified, of which 17 (38.6%) were classified as intervention studies and 19 (61.3%) as observational. The focus areas of the studies was evenly distributed between outreach outreach/recruitment ( $n=15$ , 34.1%), surveillance/observation ( $n=13$ , 29.5%) and prevention/treatment ( $n=16$ , 36.4%). Researchers engaged the community through Facebook ( $n=26$ , 59.1%), multiple-platforms ( $n=13$ , 29.5%), or one of several geo-social networking sites ( $n=10$ , 22.7%). Studies primarily targeted MSM ( $n=24$ , 54.5%) and youth ( $n=13$ , 29.5%) with little research focused on HIV+ populations ( $n=5$ , 11.4%). The current state of the field, trends, and limitations of this work are discussed.

49. Biello, K. B., et al. **"The "Safe Sex" Conundrum: Anticipated Stigma From Sexual Partners as a Barrier to PrEP Use Among Substance Using MSM Engaging in Transactional Sex."** *AIDS Behav* 2016.

Pre-exposure prophylaxis (PrEP) is efficacious for HIV prevention when taken consistently; however, barriers to PrEP use are poorly understood among individuals who could benefit from PrEP, including men who have sex with men (MSM) who engage in transactional sex (i.e., sex exchanged for money or drugs). Two hundred and thirty-seven HIV-uninfected, PrEP-naïve MSM reporting concurrent substance dependence and sexual risk completed a questionnaire on PrEP use barriers. Barriers to PrEP use for MSM who engaged in recent transactional sex (22 %) versus those who had not were compared using an ecological framework. Individual (e.g., HIV stigma, substance use) and structural (e.g., economic, healthcare) barriers did not differ ( $p > 0.05$ ). MSM who recently engaged in transactional sex were more likely to report that anticipated stigma from primary and casual partners would be barriers to PrEP use. Assessing recent transactional sex may help identify men who may need additional counseling to avoid anticipated stigma so they can integrate PrEP into their lives.

50. Cheng, C. H., et al. **"Same-Sex Behavior and Health Indicators of Sexually Experienced Filipino Young Adults."** *Arch Sex Behav* 2016 45(6): 1471-82.

The Philippines is one of seven countries in which HIV incidence has recently increased-much of this increase has been among men who have sex with men. Despite this trend, knowledge on sexuality and same-sex behaviors in the Philippines is limited. This study examines same-sex behavior, sexual outcomes, substance use, and psychological distress among young adults participating in the 2005 Cebu Longitudinal Health and Nutrition Survey (CLHNS). We use gender-stratified, multivariate models to compare young adults who reported same-sex behaviors and those who did not. Among a cohort of 1,912 Filipino young adults (ages 20-22), 58.2 % were sexually experienced and 15.1 % of them reported same-sex sexual contacts or romantic relationships. Compared to females, more males reported same-sex sexual contact (19.4 vs. 2.3 %) or same-sex romantic relationships (9.2 vs. 4.1 %). Young adults reporting same-sex behavior had higher odds of smoking, drug use, perceived stress, and more sexual partners as compared to their peers. Males who reported same-sex behavior initiated sex earlier than those males who did not report same-sex behaviors. There were no significant differences in depressive distress. Earlier sexual initiation and higher levels of

substance use among Filipino young adults engaging in same-sex behavior highlight the need to address unique health issues within this population. Mixed findings for depressive distress and perceived stress indicate that further investigation is needed to explore the potential impacts of same-sex status on mental health outcomes, particularly in lower- and middle-income countries such as the Philippines.

51. Mantell, J. E., et al. "**Switching on After Nine: Black gay-identified men's perceptions of sexual identities and partnerships in South African towns.**" *Glob Public Health* 2016 11(7-8): 953-65.

There is considerable diversity, fluidity and complexity in the expressions of sexuality and gender among men who have sex with men (MSM). Some non-gay identified MSM are known colloquially by gay-identified men in Mpumalanga, Province, South Africa, as 'After-Nines' because they do not identify as gay and present as straight during the day but also have sex with other men at night. Based on, key informant interviews and focus group discussions in two districts in Mpumalanga, we explored Black gay-identified men's perceptions of and relationships with After-Nine men, focusing on sexual and gender identities and their social consequences. Gay-identified men expressed ambivalence about their After-Nine partners, desiring them for their masculinity, yet often feeling dissatisfied and exploited in their relationships with them. The exchange of sex for commodities, especially alcohol, was common. Gay men's characterisation of After-Nines as men who ignore them during the day but have sex with them at night highlights the diversity of how same-sex practicing men perceive themselves and their sexual partners. Sexual health promotion programmes targeting 'MSM' must understand this diversity to effectively support the community in developing strategies for reaching and engaging different groups of gay and non-gay identified men.

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## Sex Workers - 40

1. Lafort, Y., et al. "**Are HIV and reproductive health services adapted to the needs of female sex workers? Results of a policy and situational analysis in Tete, Mozambique.**" *BMC Health Serv Res* 2016 16: 301. Online at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4960856/pdf/12913\\_2016\\_Article\\_1551.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4960856/pdf/12913_2016_Article_1551.pdf)

**BACKGROUND:** In the context of an implementation research project aiming at improving use of HIV and sexual and reproductive health (SRH) services for female sex workers (FSWs), a broad situational analysis was conducted in Tete, Mozambique, assessing if services are adapted to the needs of FSWs.

**METHODS:** Methods comprised (1) a policy analysis including a review of national guidelines and interviews with policy makers, and (2) health facility assessments at 6 public and 1 private health facilities, and 1 clinic specifically targeting FSWs, consisting of an audit checklist, interviews with 18 HIV/SRH care providers and interviews of 99 HIV/SRH care users.

**RESULTS:** There exist national guidelines for most HIV/SRH care services, but none provides guidance for care adapted to the needs of high-risk women such as FSWs. The Ministry of Health recently initiated the process of establishing guidelines for attendance of key populations, including FSWs, at public health facilities. Policy makers have different views on the best approach for providing services to FSWs-integrated in the general health services or through parallel services for key populations-and there exists no national strategy. The most important provider of HIV/SRH services in the study area is the government. Most basic services are widely available, with the exception of certain family planning methods, cervical cancer screening, services for victims of sexual and gender-based violence, and termination of pregnancy (TOP). The public facilities face serious limitations in term of space, staff, equipment, regular supplies and adequate provider practices. A stand-alone clinic targeting key populations offers a limited range of services to the FSW population in part of the area. Private clinics offer only a few services, at commercial prices.

**CONCLUSION:** There is a need to improve the availability of quality HIV/SRH services in general and to FSWs specifically, and to develop guidelines for care adapted to the needs of FSWs. Access for FSWs can be improved by either expanding the range of services and the coverage of the targeted clinic and/or by improving access to adapted care at the public health services and ensure a minimum standard of quality.

2. Krishnamurthy, P., et al. **"Assessing the Impact of Peer Educator Outreach on the Likelihood and Acceleration of Clinic Utilization among Sex Workers."** *PLoS One* 2016 11(7): e0159656. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4965018/pdf/pone.0159656.pdf>

**OBJECTIVE:** Peer-led outreach is a critical element of HIV and STI-reduction interventions aimed at sex workers. We study the association between peer-led outreach to sex workers and the time to utilize health facilities for timely STI syndromic-detection and treatment. Using data on the timing of peer-outreach interventions and clinic visits, we utilize an Extended Cox model to assess whether peer educator outreach intensity is associated with accelerated clinic utilization among sex workers.

**METHODS:** Our data comes from 2705 female sex workers registered into Pragati, a women-in-sex-work outreach program, and followed from 2008 through 2012. We analyze this data using an Extended Cox model with the density of peer educator visits in a 30-day rolling window as the key predictor, while controlling for the sex workers' age, client volume, location of sex work, and education level. The principal outcome of interest is the timing of the first voluntary clinic utilization.

**RESULTS:** More frequent peer visit is associated with earlier first clinic visit (HR: 1.83, 95% CI, 1.75-1.91,  $p < .001$ ). In addition, 18% of all syndrome-based STI detected come from clinic visits in which the sex worker reports no symptoms, underscoring the importance of inducing clinic visits in the detection of STI. Additional models to test the robustness of these findings indicate consistent beneficial effect of peer educator outreach.

**CONCLUSIONS:** Peer outreach density is associated with increased likelihood of and shortened duration to clinic utilization among female sex workers, suggesting potential staff resourcing implications. Given the observational nature of our study, however, these findings should be interpreted as an association rather than as a causal relationship.

3. Lancaster, K. E., et al. **"The association between substance use and sub-optimal HIV treatment engagement among HIV-infected female sex workers in Lilongwe, Malawi."** *AIDS Care* 2016: 1-7.

Female sex workers (FSW) have a high prevalence of substance use and HIV, but the impact of substance use on HIV treatment engagement is not well established. We evaluated the association between alcohol and marijuana use and sub-optimal HIV treatment engagement outcomes among HIV-infected FSW in Lilongwe, Malawi. We enrolled FSW using venue-based recruitment into a cross-sectional evaluation assessing substance use and HIV treatment engagement. Seropositive FSW, identified through HIV rapid testing, received rapid CD4 count and viral load testing. We used Poisson regression with robust variance estimates to ascertain associations of alcohol and marijuana use with sub-optimal HIV treatment outcomes: (1) lack of ART use among previously diagnosed, ART-eligible FSW and (2) viral nonsuppression among FSW on ART. Of previously diagnosed, ART-eligible FSW ( $n = 96$ ), 29% were not using ART. Patterns of hazardous drinking were identified in 30%, harmful drinking in 10%, and alcohol dependence in 12%. ART-eligible FSW with harmful drinking or alcohol dependency were 1.9 (95% CI: 1.0, 3.8) times as likely to not use ART compared to FSW without harmful or dependent drinking. Among those on ART, 14% were virally nonsuppressed. The prevalence ratio for viral nonsuppression was 2.0 (95% CI: 0.6, 6.5) for harmful drinkers and alcohol-dependent FSW. Over 30% of ART-eligible FSW reported using marijuana. Marijuana-using FSW were 1.9 (95% CI: 0.8, 4.6) times as likely to not use ART compared to FSW who were not using marijuana. Given the high prevalence of alcohol use and its association with lack of ART use, ART uptake and alcohol reduction strategies should be tailored for alcohol-using FSW in Malawi.

4. Budhwani, H., et al. "**Association between violence exposure and condom non-use among transgender sex workers in the Dominican Republic: the mediating role of trust.**" *Int J STD AIDS* 2016.

Transgender women are a high-risk population, and transgender female sex workers are one of the most vulnerable populations globally. Transgender female sex workers have high rates of sexually transmitted infections, HIV, and exposure to violence compared to cisgender sex workers; these negative exposures are associated with an increase in HIV risk behaviors. Thus, the aim of this study is to examine the relationship between exposure to violence and condom non-use in transgender female sex workers residing in the Dominican Republic. We hypothesize that mediation exists wherein the effects of violence on condom non-use are mediated by distrust. Facilitated interview data (N = 78) were used. Primary outcome was condom non-use with coercive partner. Four logistic regression models and a mediation analysis were employed. Respondents' mean age was 23.0 years (SD = 4.8) with an average level education attainment of 10.1 years (SD = 2.6); 35% reported experiencing violence; 17% believed that a person who asks a partner to use a condom does not trust that partner. Exploratory mediation analyses yielded a significant indirect effect of experience with violence on condom non-use through distrust (b = 0.64, SE = 0.33, p = .05). Results suggest that distrust mediates the association between experienced violence and condom use with coercive partners. It was concluded that developing interventions on increasing resilience and perceived self-worth, plus provision of screening for violence and referral services may reduce maladaptive attributions and cognitions about condom use. Furthermore, by implementing policies that protect vulnerable populations, and subsequently enforcing them, the Dominican Republic has the opportunity to improve overall population health and protect their most disadvantaged citizens.

5. Lafort, Y., et al. "**Barriers to HIV and sexual and reproductive health care for female sex workers in Tete, Mozambique: results from a cross-sectional survey and focus group discussions.**" *BMC Public Health* 2016 16: 608. Online at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4955167/pdf/12889\\_2016\\_Article\\_3305.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4955167/pdf/12889_2016_Article_3305.pdf)

**BACKGROUND:** In the context of an operational research project in Tete, Mozambique, use of, and barriers to, HIV and sexual and reproductive health (HIV/SRH) commodities and services for female sex workers (FSWs) were assessed as part of a baseline situational analysis.

**METHODS:** In a cross-sectional survey 311 FSWs were recruited using respondent driven sampling and interviewed face-to-face, and three focus group discussions were held with respectively 6 full-time Mozambican, 7 occasional Mozambican and 9 full-time Zimbabwean FSWs, to investigate use of, and barriers to, HIV/SRH care.

**RESULTS:** The cross-sectional survey showed that 71 % of FSWs used non-barrier contraception, 78 % sought care for their last sexually transmitted infection episode, 51 % of HIV-negative FSWs was tested for HIV in the last 6 months, 83 % of HIV-positive FSWs were in HIV care, 55 % sought help at a health facility for their last unwanted pregnancy and 48 % after sexual assault, and none was ever screened for cervical cancer. Local public health facilities were by far the most common place where care was sought, followed by an NGO-operated clinic targeting FSWs, and places outside the Tete area. In the focus group discussions, FSWs expressed dissatisfaction with the public health services, as a result of being asked for bribes, being badly attended by some care providers, stigmatisation and breaches of confidentiality. The service most lacking was said to be termination of unwanted pregnancies.

**CONCLUSIONS:** The use of most HIV and SRH services is insufficient in this FSW population. The public health sector is the main provider, but access is hampered by several barriers. The reach of a FSW-specific NGO clinic is limited. Access to, and use of, HIV and SRH services should be improved by reducing barriers at public health facilities, broadening the range of services and expanding the reach of the targeted NGO clinic.

6. Fleming, P. J., et al. "**Behavioral and Psychosocial Correlates of HIV Testing Among Male Clients of Female Sex Workers in Tijuana, Mexico.**" *AIDS Behav* 2016.



We use data collected from a sample of 400 male clients of female sex workers (FSW) to examine their HIV testing behavior. We present frequencies of HIV testing and used bivariate and multivariable analyses to assess its socio-demographic, behavioral, and psychosocial correlates. We found that the majority (55 %) of male clients of FSW in Tijuana, Mexico had never had an HIV test and the prevalence of HIV testing within the past year was low (9 %). In multivariable analyses, significant correlates of having ever tested for HIV were higher age, higher HIV knowledge score, lower sexual compulsiveness score, lower misogynistic attitudes score, having a condom break during sex with a FSW, and higher frequency of sex with a FSW while she was high. Our findings represent an important starting point for developing effective interventions to address the need to promote HIV testing among this population.

7. Carrico, A. W., et al. **"Behavioral interventions for Cambodian female entertainment and sex workers who use amphetamine-type stimulants."** *J Behav Med* 2016 39(3): 502-10.

Conditional cash transfer (CCT) and cognitive-behavioral treatments are evidence-based approaches to reduce stimulant use and sexual risk taking. We describe the adaptation and implementation of sequential behavioral interventions for Cambodian female entertainment and sex workers (FESW) who use amphetamine-type stimulants (ATS): (1) a 12-week CCT intervention; and (2) a 4-week cognitive-behavioral aftercare (AC) group. An ongoing cluster randomized stepped wedge trial in 10 Cambodian provinces is enrolling FESW with confirmed recent ATS use to examine the effectiveness of CCT + AC. In the first six provinces, 138 of the 183 eligible FESW (75 %) enrolled in CCT and completed a median of 25 (interquartile range 9-32) of the 36 urine screening visits. Of the 84 participants who were eligible for AC, 79 completed at least one session (94 %) and 57 completed three or more sessions (68 %). Culturally tailored behavioral interventions to reduce ATS use and optimize HIV prevention are feasible in resource-limited settings.

8. Saeng-Aroon, S., et al. **"Circulation of HIV-1 Multiple Complexity Recombinant Forms Among Female Sex Workers Recently Infected with HIV-1 in Thailand."** *AIDS Res Hum Retroviruses* 2016 32(7): 694-701.

The circulating subtype distribution of HIV-1 has not been well characterized in female sex worker (FSW) populations in Thailand. To understand the mechanisms and interrelationships of epidemics involving FSWs in Thailand, we performed a large molecular epidemiological study of FSWs aged 25 years with recently acquired HIV-1 infections. The samples were collected in 2005, 2007, 2009, and 2011 in 38 provinces, representing every region of Thailand. After gag (p24), pol (pro-RT), and env (C2/V3) were sequenced, comprehensive genome analysis was performed. Genetic subtypes were determined in 159 plasma samples. The percentage of circulating recombinant forms (CRFs) CRF01\_AE (90.6%) predominated, while subtype B (1.3%), other CRFs (1.9%), and unique recombinant forms (URFs) (6.2%) were identified as minor populations. Interestingly, the unique recombinant nature of these HIV-1 strains was verified in 10 specimens, indicating the presence of new forms of HIV-1 intersubtypes G/A, C/B, AE/B/C, and AE/B with different recombination breakpoints. Subtype B has contributed to these new generations of unique CRF01/B recombinants, especially in the pol (RT) gene, in which the template switching of the RT genomes occurred during reverse transcription. These results imply that the several unique recombinant viruses circulating in Thailand were probably generated in the population or introduced from neighboring countries. Our study helps clarify the patterns of viral transmission and define transmission pathways in Thailand.

9. Iakunchykova, O. P., et al. **"Correlates of HIV and Inconsistent Condom Use Among Female Sex Workers in Ukraine."** *AIDS Behav* 2016.

While female sex workers (FSWs) carry one of the highest risks of HIV transmission, little is known about predictors of HIV and risky behavior of FSWs in Ukraine. In this study of 4806 Ukrainian FSWs, the prevalence of HIV was 5.6 %. FSWs had higher odds to be HIV infected if they had lower income, were older, injected drugs, experienced violence, and solicited clients on highways. Inconsistent condom use with clients was reported by 34.5 % of FSWs. FSWs who solicited clients at railway stations, via media, through previous clients and other FSWs, and on highways reported lower consistency of condom use. Furthermore, inconsistent condom use was related to younger age, alcohol use, having fewer clients, not being covered

with HIV prevention, and experiences of violence. The present study expands on the rather limited knowledge of correlates of the HIV and inconsistent condom use among FSWs in Ukraine.

10. Semple, S. J., et al. "**Correlates of unprotected sex with male clients among female sex workers in 13 Mexican cities.**" *Glob Public Health* 2016: 1-15.

This study examined correlates of unprotected vaginal and anal sex (UVA) with male clients among female sex workers (FSWs). Baseline data were gathered from 1089 FSWs recruited from 13 cities across Mexico enrolled in an evidence-based sexual risk reduction intervention. We used generalised estimating equations (GEE) to predict total UVA while controlling for the nested structure of the data. Total UVA with clients in the past month was examined in relation to selected sociodemographic, substance-use, and micro- and macro-environmental factors. A greater number of UVA acts was associated with three micro-level environmental factors (i.e. never getting condoms for free, unaffordability of condoms, greater number of clients per month), and three macro-level environmental factors (i.e. lower health and higher education indices, greater population size of city). These findings suggest the development of social and structural approaches to HIV prevention for FSWs in Mexico, including modification of venue-based policies that pressure FSWs to maximise client volume, changes to the work environment that promote availability and affordability of condoms, and improved population health. Moreover, our findings call for the development of context-specific HIV interventions that take into account variations in the sexual risk behaviours and HIV risk environments of FSWs throughout Mexico.

11. Han, L., et al. "**Differences in risk behaviours and HIV/STI prevalence between low-fee and medium-fee female sex workers in three provinces in China.**" *Sex Transm Infect* 2016 92(4): 309-15.

**OBJECTIVES:** To better understand risk behaviours and factors associated with low-fee female sex workers (FSW) and support HIV/sexually transmitted infections (STI) epidemic control among this key population in China.

**METHODS:** A cross-sectional study using convenience sampling to recruit 1487 eligible low-fee and medium-fee FSW was conducted in 2012 in three provinces. The participants were interviewed using a structured questionnaire and tested for HIV-1, herpes simplex virus (HSV)-2 and syphilis antibody. Log-binomial modelling was used to estimate prevalence ratios (PR) and examine factors associated with low-fee sex work.

**RESULTS:** Prevalence of HIV-1, syphilis and HSV-2 antibody positive were 0.5%, 4.8% and 27.8%, respectively. Low-fee FSW were more likely to have HSV-2 infection (adjusted prevalence ratio (APR)=1.3, 95% CI 1.1 to 1.7), but not more likely to have HIV-1 and syphilis infection compared with medium-fee FSW. Compared with medium-fee FSW, low-fee FSW were more likely to be  $\geq 35$  years of age (APR=2.1, 95% CI 1.3 to 3.6), engage in sex work  $\geq 6$  days/per week (APR=1.7, 95% CI 1.2 to 2.6), have  $\geq 3$  clients per day (APR=2.2, 95% CI 1.5 to 3.3), have clients decide condom use (APR=1.6, 95% CI 1.1 to 2.3), fail to persuade clients to use condoms (APR=1.6, 95% CI 1.1 to 2.6), express willingness to have unprotected sex in return for receipt of a higher fee (APR=1.8, 95% CI 1.2 to 2.8), have had genital symptoms in the past year (APR=1.4, 95% CI 1.1 to 1.8) and have migrated from another city.

**CONCLUSIONS:** Low-fee FSW in China have unique risks for acquiring HIV/STI, in part due to greater economic pressures. Tailored interventions targeting low-fee FSW and incorporating their prevailing perception of HIV/STI risks and condom use negotiation challenges that they face are urgently needed.

12. Vasylyeva, T. I., et al. "**Engagement in sex work does not increase HIV risk for women who inject drugs in Ukraine.**" *J Public Health (Oxf)* 2016.

**BACKGROUND:** We studied the association between sex in exchange for money, drugs or goods and HIV for women who inject drugs (WWID) in Ukraine, as previous data on this association from the post-USSR region are contradictory.

**METHODS:** Data come from the Integrated Bio-Behavioral Survey of Ukrainian people who inject drugs collected in 2011 using respondent-driven sampling. Participants were interviewed and tested with rapid HIV tests.

**RESULTS:** The sample included 2465 WWID (24% HIV positive); 214 (8.7%) of which reported having had exchange sex during the last 90 days. Crude analysis showed no association between exchange sex and HIV (OR = 0.644; 95% CI 0.385-1.077). No confounders were found to alter this result in a multivariable analysis. Further modeling showed that exchange sex modifies association between HIV and alcohol use: no association between HIV and daily alcohol use was found for those women who exchanged sex (OR = 1.699, 95% CI 0.737-3.956); while not engaging in sex work and daily using alcohol reduced odds to be HIV infected (OR = 0.586, 95% CI 0.389-0.885).

**CONCLUSIONS:** Exchange sex may have less impact on the HIV status of WWID who are exposed to injecting risks. The finding that daily alcohol use appears protective against HIV among WWID who do not exchange sex requires more research.

13. Nakanwagi, S., et al. "**Facilitators and Barriers to Linkage to HIV Care among Female Sex Workers Receiving HIV Testing Services at a Community-Based Organization in Periurban Uganda: A Qualitative Study.**" *J Sex Transm Dis* 2016 2016: 7673014. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4963560/pdf/JSTD2016-7673014.pdf>

**INTRODUCTION:** While four in ten female sex workers (FSWs) in sub-Saharan Africa are infected with HIV, only a small proportion is enrolled in HIV care. We explored facilitators and barriers to linkage to HIV care among FSWs receiving HIV testing services at a community-based organization in periurban Uganda.

**METHODS:** The cross-sectional qualitative study was conducted among 28 HIV positive FSWs from May to July 2014. Key informant interviews were conducted with five project staff and eleven peer educators. Data were collected on facilitators for and barriers to linkage to HIV care and manually analyzed following a thematic framework approach.

**RESULTS:** Facilitators for linkage to HIV care included the perceived good quality of health services with same-day results and immediate initiation of treatment, community peer support systems, individual's need to remain healthy, and having alternative sources of income. Linkage barriers included perceived stigma, fear to be seen at outreach HIV clinics, fear and myths about antiretroviral therapy, lack of time to attend clinic, and financial constraints.

**CONCLUSION:** Linkage to HIV care among FSWs is influenced by good quality friendly services and peer support. HIV service delivery programs for FSWs should focus on enhancing these and dealing with barriers stemming from stigma and misinformation.

14. Suryawanshi, D., et al. "**FACTORS ASSOCIATED WITH THE LIKELIHOOD OF FURTHER MOVEMENT AMONG MOBILE FEMALE SEX WORKERS IN INDIA: A MULTINOMIAL LOGIT APPROACH.**" *J Biosoc Sci* 2016 48(4): 539-56.

Female sex workers (FSWs) are vulnerable to HIV infection. Their socioeconomic and behavioural vulnerabilities are crucial push factors for movement for sex work. This paper assesses the factors associated with the likelihood of movement of sex workers from their current place of work. Data were derived from a cross-sectional survey conducted among 5498 mobile FSWs in 22 districts of high in-migration across four states in southern India. A multinomial logit model was constructed to predict the likelihood of FSWs moving from their current place of work. Ten per cent of the sampled mobile FSWs were planning to move from their current place of sex work. Educational attainment, marital status, income at current place of work, debt, sexual coercion, experience of violence and having tested for HIV and collected the results were found to be significant predictors of the likelihood of movement from the current place of work. Consistent condom use

with different clients was significantly low among those planning to move. Likewise, the likelihood of movement was significantly higher among those who had any STI symptom in the last six months and those who had a high self-perceived risk of HIV. The findings highlight the need to address factors associated with movement among mobile FSWs as part of HIV prevention and access to care interventions.

15. Gibson, B. A., et al. "**Gender identity, healthcare access, and risk reduction among Malaysia's mak nyah community.**" *Glob Public Health* 2016 11(7-8): 1010-25.

Transgender women (TGW) face compounded levels of stigma and discrimination, resulting in multiple health risks and poor health outcomes. TGW identities are erased by forcing them into binary sex categories in society or treating them as men who have sex with men (MSM). In Malaysia, where both civil and religious law criminalise them for their identities, many TGW turn to sex work with inconsistent prevention methods, which increases their health risks. This qualitative study aims to understand how the identities of TGW sex workers shapes their healthcare utilisation patterns and harm reduction behaviours. In-depth, semi-structured interviews were conducted with 21 male-to-female transgender (mak nyah) sex workers in Malaysia. Interviews were transcribed, translated into English, and analysed using thematic coding. Results suggest that TGW identity is shaped at an early age followed by incorporation into the mak nyah community where TGW were assisted in gender transition and introduced to sex work. While healthcare was accessible, it failed to address the multiple healthcare needs of TGW. Pressure for gender-affirming health procedures and fear of HIV and sexually transmitted infection screening led to potentially hazardous health behaviours. These findings have implications for developing holistic, culturally sensitive prevention and healthcare services for TGW.

16. Decker, M. R., et al. "**Gender-based violence against female sex workers in Cameroon: prevalence and associations with sexual HIV risk and access to health services and justice.**" *Sex Transm Infect* 2016.

**BACKGROUND/OBJECTIVES:** Female sex workers (FSWs) are at risk for HIV and physical and sexual gender-based violence (GBV). We describe the prevalence of lifetime GBV and its associations with HIV risk behaviour, access to health services and barriers in accessing justice among FSWs in Cameroon.

**METHODS:** FSWs (n=1817) were recruited for a cross-sectional study through snowball sampling in seven cities in Cameroon. We examined associations of lifetime GBV with key outcomes via adjusted logistic regression models.

**RESULTS:** Overall, 60% (1098/1817) had experienced physical or sexual violence in their lifetime. GBV was associated with inconsistent condom use with clients (adjusted OR (AOR) 1.49, 95% CI 1.18 to 1.87), being offered more money for condomless sex (AOR 2.09, 95% CI 1.56 to 2.79), having had a condom slip or break (AOR 1.53, 95% CI 1.25 to 1.87) and difficulty suggesting condoms with non-paying partners (AOR 1.47, 95% CI 1.16 to 1.87). Violence was also associated with fear of health services (AOR 2.25, 95% CI 1.61 to 3.16) and mistreatment in a health centre (AOR 1.66, 95% CI 1.01 to 2.73). Access to justice was constrained for FSWs with a GBV history, specifically feeling that police did not protect them (AOR 1.41, 95% CI 1.12 to 1.78).

**DISCUSSION:** Among FSWs in Cameroon, violence is prevalent and undermines HIV prevention and access to healthcare and justice. Violence is highly relevant to FSWs' ability to successfully negotiate condom use and engage in healthcare. In this setting of criminalised sex work, an integrated, multisectoral GBV-HIV strategy that attends to structural risk is needed to enhance safety, HIV prevention and access to care and justice.

17. Couture, M. C., et al. "**High prevalence of unhealthy alcohol use and comparison of self-reported alcohol consumption to phosphatidylethanol among women engaged in sex work and their male clients in Cambodia.**" *Drug Alcohol Depend* 2016 165: 29-37.

**BACKGROUND:** In Cambodia, most of the female sex workers (FSW) work in venues where unhealthy alcohol use is ubiquitous and potentially contributing to the HIV epidemic. However, no accurate data exists.

We compare self-reported unhealthy alcohol consumption to a biomarker of alcohol intake in Cambodian FSW and male clients, and determine factors associated with unhealthy alcohol use.

**METHODS:** A cross-sectional study was conducted among FSW (n=100) and male clients (n=100) in entertainment and sex work venues in Cambodia. Self-reported unhealthy alcohol use (AUDIT-C) was compared to phosphatidylethanol (PEth) positive ( $\geq 50$ ng/ml), a biomarker of alcohol intake. Sociodemographics data was collected. Correlates of self-reported unhealthy alcohol use and PEth positive were determined.

**RESULTS:** The prevalence of PEth positive in FSW was 60.0%. Self-reported unhealthy alcohol consumption was reported by 85.0% of the women. Almost all women (95.0%) testing PEth positive also reported unhealthy alcohol use. Prevalence of unhealthy alcohol consumption (self-report and PEth positive) was higher in FSW working in entertainment establishments compared to other sex work venues ( $p < 0.01$ ). Among male clients, 47.0% reported unhealthy alcohol consumption and 42.0% had a PEth positive. However, only 57.1% of male clients with PEth positive reported unhealthy alcohol use.

**CONCLUSIONS:** Unhealthy alcohol consumption is prevalent in Cambodian sex work settings. Self-reported unhealthy alcohol use is well reported by FSW, but less by male clients. These findings highlight the urgency of using accurate measures of unhealthy alcohol consumption and integrating this health issue into HIV prevention interventions.

18. Lafort, Y., et al. "**HIV prevention and care-seeking behaviour among female sex workers in four cities in India, Kenya, Mozambique and South Africa.**" *Trop Med Int Health* 2016.

**OBJECTIVE:** To identify gaps in the use of HIV prevention and care services and commodities for female sex workers, we conducted a baseline cross-sectional survey in four cities, in the context of an implementation research project aiming to improve use of sexual and reproductive health services.

**METHODS:** Using respondent-driven sampling, 400 sex workers were recruited in Durban, 308 in Tete, 400 in Mombasa and 458 in Mysore and interviewed face-to-face. RDS-adjusted proportions were estimated by nonparametric bootstrapping and compared across cities using post hoc pairwise comparison.

**RESULTS:** Condom use with last client ranged from 88.3% to 96.8%, ever female condom use from 1.6% to 37.9%, HIV testing within the past 6 months from 40.5% to 70.9%, receiving HIV treatment and care from 35.5% to 92.7%, care seeking for last STI from 74.4% to 87.6% and having had at least 10 contacts with a peer educator in the past year from 5.7% to 98.1%. Many of the differences between cities remained statistically significant ( $P < 0.05$ ) after adjusting for differences in FSWs' socio-demographic characteristics.

**CONCLUSION:** The use of HIV prevention and care by FSWs is often insufficient and differed greatly between cities. Differences could not be explained by variations in socio-demographic sex worker characteristics. Models to improve use of condoms and HIV prevention and care services should be tailored to the specific context of each site. Programmes at each site must focus on improving availability and uptake of those services that are currently least used.

19. Biello, K. B., et al. "**Is Involvement in Sex Work Associated with Engagement in HIV-Related Medical Care in Latin American Men Who Have Sex with Men? Results of a Large, Multinational Internet Survey.**" *LGBT Health* 2016 3(3): 233-7. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4894012/pdf/lgbt.2015.0006.pdf>

Men who have sex with men (MSM) who engage in transactional sex are at increased HIV risk, and face complex barriers to care seeking. Among 2,035 men recruited through an MSM social/sexual networking website in Latin America and who reported being HIV-infected, 186 (9.1%) reported being paid for sex with another man in the past year. Engagement in transactional sex was associated with decreased odds of receiving medical care for HIV (AOR=0.57, 95% CI=0.37-0.85). No significant differences were seen in being

on antiretroviral therapy (ART) or ART adherence once in care. Interventions in this population should focus on reducing barriers to engagement in care.

20. Carney, T., et al. "**Ithubaletu-Intervention to Address Drug Use and Sexual HIV Risk Patterns among Female Commercial Sex Workers in Durban, South Africa.**" *J Psychoactive Drugs* 2016 48(4): 303-9.

Previous research shows that interventions aimed at female sex workers (FSWs) can be successful in reducing HIV risk behavior. The current study evaluated a specific HIV prevention intervention for substance-using FSWs in Durban, South Africa by comparing such behaviors before and after the intervention. The intervention was provided by trained outreach workers by an organization that worked with FSWs, and consisted of community-based outreach, HIV and substance use education and information. Safer sex practices were also taught. The sample consisted of 457 substance-using FSWs, with findings indicating a significant decrease in the number of sexual partners ( $z = -16.05$ ,  $p < 0.001$ ), number of times they engaged in vaginal sex ( $z = -8.07$ ,  $p < 0.001$ ), and a significant decrease in all substances used with the exception of over-the-counter or prescription substances. The intervention therefore seemed to reduce certain risk behaviors among this group of FSWs. Future research should focus on the aspects of the substance use-sex risk intervention that were associated with decreased risk behavior, and include a randomized controlled trial to assess effectiveness of the intervention.

21. Deuba, K., et al. "**Micro-level social and structural factors act synergistically to increase HIV risk among Nepalese female sex workers.**" *Int J Infect Dis* 2016 49: 100-6. Online at: [http://ac.els-cdn.com/S1201971216310918/1-s2.0-S1201971216310918-main.pdf?\\_tid=de3edb46-7130-11e6-bf63-00000aacb361&acdnat=1472836718\\_574d5613bac66d8f439b7288f18af773](http://ac.els-cdn.com/S1201971216310918/1-s2.0-S1201971216310918-main.pdf?_tid=de3edb46-7130-11e6-bf63-00000aacb361&acdnat=1472836718_574d5613bac66d8f439b7288f18af773)

**OBJECTIVES:** Sex workers face stigma, discrimination, and violence across the globe and are almost 14 times more likely to be HIV-infected than other women in low- and middle-income countries. In Asia, condom campaigns at brothels have been effective in some settings, but for preventive interventions to be sustainable, it is important to understand micro-level social and structural factors that influence sexual behaviours of sex workers. This study assessed the syndemic effects of micro-level social and structural factors of unprotected sex and the prevalence of HIV among female sex workers (FSWs) in Nepal.

**METHODS:** This quantitative study included 610 FSWs who were recruited using two-stage cluster sampling from September to November 2012 in 22 Terai Highway districts of Nepal. Rapid HIV tests and face-to-face interviews were conducted to collect biological and behavioural information. A count of physical (sexual violence and other undesirable events), social (poor social support and condom negotiation skills), and economic (unprotected sex to make more money) factors that operate at the micro-level was calculated to test the additive relationship to unprotected sex.

**RESULTS:** The HIV prevalence was 1%; this is presumably representative, with a large sample of FSWs in Nepal. The prevalence of unprotected sex with clients was high (24%). For each additional adverse physical, social, and economic condition, the probability of non-use of condoms with clients increased substantially: one problem = 12% ( $p < 0.005$ ), two problems = 19% ( $p < 0.001$ ), and three to five problems = 38% ( $p < 0.001$ ).

**CONCLUSIONS:** Interactions between two or more adverse conditions linked to physical, social, and economic environments increased the risk of unprotected sex among Nepalese FSWs.

22. Offringa, R., et al. "**Personal and Financial Risk Typologies Among Women Who Engage in Sex Work in Mongolia: A Latent Class Analysis.**" *Arch Sex Behav* 2016.

Women engaged in sex work bear a disproportionate burden of HIV infection worldwide, particularly in low- to middle-income countries. Stakeholders interested in promoting prevention and treatment programs are challenged to efficiently and effectively target heterogeneous groups of women. This problem is particularly difficult because it is nearly impossible to know how those groups are composed a priori. Although grouping based on individual variables (e.g., age or place of solicitation) can describe a sample of women engaged in

sex work, selecting these variables requires a strong intuitive understanding of the population. Furthermore, this approach is difficult to quantify and has the potential to reinforce preconceived notions, rather than generate new information. We aimed to investigate groupings of women engaged in sex work. The data were collected from a sample of 204 women who were referred to an HIV prevention intervention in Ulaanbaatar, Mongolia. Latent class analysis was used to create subgroups of women engaged in sex work, based on personal and financial risk factors. This analysis found three latent classes, representing unique response pattern profiles of personal and financial risk. The current study approached typology research in a novel, more empirical way and provided a description of different subgroups, which may respond differently to HIV risk interventions.

23. Footer, K. H., et al. **"Policing practices as a structural determinant for HIV among sex workers: a systematic review of empirical findings."** *J Int AIDS Soc* 2016 19(4 Suppl 3): 20883. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4951541/pdf/JIAS-19-20883.pdf>

**INTRODUCTION:** Sex workers are disproportionately infected with HIV worldwide. Significant focus has been placed on understanding the structural determinants of HIV and designing related interventions. Although there is growing international evidence that policing is an important structural HIV determinant among sex workers, the evidence has not been systematically reviewed.

**METHODS:** We conducted a systematic review of quantitative studies to examine the effects of policing on HIV and STI infection and HIV-related outcomes (condom use; syringe use; number of clients; HIV/STI testing and access) among cis and trans women sex workers. Databases included PubMed, Embase, Scopus, Sociological Abstracts, Popline, Global Health (OVID), Web of Science, IBSS, IndMed and WHOLIS. We searched for studies that included police practices as an exposure for HIV or STI infection or HIV-related outcomes.

**RESULTS:** Of the 137 peer-reviewed articles identified for full text review, 14 were included, representing sex workers' experiences with police across five settings. Arrest was the most commonly explored measure with between 6 and 45% of sex workers reporting having ever been arrested. Sexual coercion was observed between 3 and 37% of the time and police extortion between 12 and 28% across studies. Half the studies used a single measure to capture police behaviours. Studies predominantly focused on "extra-legal policing practices," with insufficient attention to the role of "legal enforcement activities". All studies found an association between police behaviours and HIV or STI infection, or a related risk behaviour.

**CONCLUSIONS:** The review points to a small body of evidence that confirms policing practices as an important structural HIV determinant for sex workers, but studies lack generalizability with respect to identifying those police behaviours most relevant to women's HIV risk environment.

24. Quaife, M., et al. **"Preferences for ARV-based HIV prevention methods among men and women, adolescent girls and female sex workers in Gauteng Province, South Africa: a protocol for a discrete choice experiment."** *BMJ Open* 2016 6(6): e010682. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4932295/pdf/bmjopen-2015-010682.pdf>

**INTRODUCTION:** For the past few decades, condoms have been the main method of HIV prevention. Recent advances in antiretroviral (ARV)-based prevention products have substantially changed the prevention landscape, yet little is known about how popular these products will be among potential users, or whether new methods might be used in conjunction with, or instead of, condoms. This study will use a discrete choice experiment (DCE) to (1) explore potential users' preferences regarding HIV prevention products, (2) quantify the importance of product attributes and (3) predict the uptake of products to inform estimates of their potential impact on the HIV epidemic in South Africa. We consider preferences for oral pre-exposure prophylaxis; a vaginal microbicide gel; a long-acting vaginal ring; a SILCS diaphragm used in concert with gel; and a long-acting ARV-based injectable.

**METHODS AND ANALYSIS:** This study will gather data from 4 populations: 200 women, 200 men, 200

adolescent girls (aged 16-17 years) and 200 female sex workers. The DCE attributes and design will be developed through a literature review, supplemented by a thematic analysis of qualitative focus group discussions. Extensive piloting will be carried out in each population through semistructured interviews. The final survey will be conducted using computer tablets via a household sample (for women, men and adolescents) and respondent-driven sampling (for female sex workers), and DCE data analysed using a range of multinomial logit models.

**ETHICS AND DISSEMINATION:** This study has been approved by the University of the Witwatersrand Human Research Ethics Committee and the Research Ethics Committee at the London School of Hygiene and Tropical Medicine. Findings will be presented to international conferences and peer-reviewed journals. Meetings will be held with opinion leaders in South Africa, while results will be disseminated to participants in Ekurhuleni through a public meeting or newsletter.

25. Rao, A., et al. "**Pregnancy Intentions and Safer Pregnancy Knowledge Among Female Sex Workers in Port Elizabeth, South Africa.**" *Obstet Gynecol* 2016 128(1): 15-21.

**OBJECTIVE:** To assess the association between human immunodeficiency virus (HIV) and pregnancy intentions and safer conception knowledge among female sex workers in Port Elizabeth, South Africa.

**METHODS:** This cross-sectional study recruited female sex workers in Port Elizabeth using respondent-driven sampling and completed an interviewer-administered questionnaire alongside HIV testing and counseling. In this secondary analysis, robust Poisson regression was used to model prevalence ratios for positive fertility intentions in this cross-sectional study. Knowledge of safer conception methods by HIV status was compared using Fisher exact tests.

**RESULTS:** Overall 391 women were represented in the analyses. More than 50% had a prior HIV diagnosis, and an additional 12% were diagnosed with HIV during the study. Approximately half (n=185) of the women reported future pregnancy intentions. In univariate analysis, a prior HIV diagnosis was negatively associated with pregnancy intentions as compared with HIV-negative women (prevalence ratio 0.68, 95% confidence interval 0.55-0.85). Only parity remained independently associated with future pregnancy intentions in multivariate regression after controlling for HIV status, age, race, relationship status, and years selling sex. Knowledge of safer conception methods such as timed sex without a condom, preexposure prophylaxis, or self-insemination was low and similar between those with and without future pregnancy plans.

**CONCLUSION:** Pregnancy intentions did not significantly vary according to HIV status. Fertility intentions were high, however, and knowledge of safer conception methods low, suggesting a need to provide female sex workers with advice around options to conceive safely in the context of high HIV prevalence.

26. Cai, Y., et al. "**Prevalence and associated factors of condomless receptive anal intercourse with male clients among transgender women sex workers in Shenyang, China.**" *J Int AIDS Soc* 2016 19(3 Suppl 2): 20800. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949316/pdf/JIAS-19-20800.pdf>

**INTRODUCTION:** Globally, transgender women sex workers have a high prevalence of HIV and condomless receptive anal intercourse with male clients (CRAIMC). We investigated the prevalence of CRAIMC and factors associated with CRAIMC among transgender women sex workers in China.

**METHODS:** In 2014, we anonymously interviewed 220 transgender women sex workers face to face in Shenyang, China. Those who self-reported as HIV negative or as having unknown HIV serostatus were invited to take up free, anonymous HIV rapid testing (n=183); 90 did so. Using CRAIMC in the last month as the dependent variable, three types of associated factors were investigated, in addition to background factors: feminizing medical interventions, sex work and perceptions related to condom use. Univariate and multiple logistic regression models were fitted.

**RESULTS:** Of the participants, 16.8% self-reported as HIV positive and 9.1% were detected to be HIV positive



through free HIV testing; 26.8% had had CRAIMC in the last month, 45.5% had performed sex work in other Chinese cities (last year), and 23.2% had had condomless anal intercourse with men who were non-clients. In the adjusted analysis, significant factors associated with CRAIMC (last month) included the following: 1) any feminizing medical intervention performed (adjusted odds ratio, AOR: 2.22); 2) sex-work-related factors, including recruitment of male clients most often at hotels (AOR: 5.02) and charge per episode of transactional sex (201 to 400 RMB, AOR: 0.27; reference group:  $\leq 100$  RMB); and 3) perceptions related to condom use, including perceived transgender identity's impact on condomless sex such as wearing feminine attire, concern about exposing their status as a transgender woman to male clients (AOR: 1.20) and perceived self-efficacy of consistent condom use with male clients (AOR: 0.56). Perceived self-efficacy of consistent condom use with male clients fully mediated the association between perceived transgender identity's impact on condomless sex and CRAIMC.

**CONCLUSIONS:** HIV prevalence among transgender women sex workers was high but probably underestimated. The high prevalence of condomless anal intercourse with male non-clients and high mobility in sex work among this population in China are causes for concern. Risk factors for CRAIMC were multidimensional and should be considered when designing interventions targeting transgender women sex workers. Such interventions are urgently needed.

27. Blanchard, A. K., et al. **"Pursuing Authenticity From Process to Outcome in a Community-Based Participatory Research Study of Intimate Partner Violence and HIV Vulnerability in North Karnataka, India."** *Qual Health Res* 2016.

Community-based participatory research has been seen to hold great promise by researchers aiming to bridge research and action in global health programs and practice. However, there is still much debate around whether achieving authenticity in terms of in-depth collaboration between community and academic partners is possible while pursuing academic expectations for quality. This article describes the community-based methodology for a qualitative study to explore intimate partner violence and HIV/AIDS among women in sex work, or female sex workers, and their male partners in Karnataka, South India. Developed through collaborative processes, the study methodology followed an interpretive approach to qualitative inquiry, with three key components including long-term partnerships, knowledge exchange, and orientation toward action. We then discuss lessons learned on how to pursue authenticity in terms of truly collaborative processes with inherent value that also contribute to, rather than hinder, the instrumental goal of enhancing the quality and relevance of the research outcomes.

28. Beattie, T. S., et al. **"Reducing violence and increasing condom use in the intimate partnerships of female sex workers: study protocol for Samvedana Plus, a cluster randomised controlled trial in Karnataka state, south India."** *BMC Public Health* 2016 16: 660. Online at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4966746/pdf/12889\\_2016\\_Article\\_3356.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4966746/pdf/12889_2016_Article_3356.pdf)

**BACKGROUND:** Female sex workers (FSWs) are at increased risk of HIV and STIs compared to women in the general population, and frequently experience violence in their working and domestic lives from a variety of perpetrators, which can enhance this risk. While progress has been made in addressing violence by police and clients, little work has been done to understand and prevent violence by intimate partners (IPs) among FSW populations.

**METHODS:** Samvedana Plus is a multi-level intervention programme that works with FSWs, their IPs, the sex worker community, and the general population, and aims to reduce violence and increase consistent condom use within these 'intimate' relationships. The programme involves shifting norms around the acceptability of beating as a form of discipline, challenging gender roles that give men authority over women, and working with men and women to encourage new relationship models based on gender equity and respect. The programme will aim to cover 800 FSWs and their IPs living in 47 villages in Bagalkot district, northern Karnataka. The study is designed to assess two primary outcomes: the proportion of FSWs who report: (i) physical or sexual partner violence; and (ii) consistent condom use in their intimate relationship, within the past 6 months. The evaluation will employ a cluster-randomised controlled trial design, with 50 %

of the village clusters (n = 24) randomly selected to receive the intervention for the first 24 months and the remaining 50 % (n = 23) receiving the intervention thereafter. Statisticians will be blinded to treatment arm allocation. The evaluation will use an adjusted, cluster-level intention to treat analysis, comparing outcomes in intervention and control villages at midline (12 months) and endline (24 months). The evaluation design will involve quantitative and qualitative assessments with (i) all FSWs who report an IP (ii) IPs; and process/ implementation monitoring. Baseline data collection was completed in April 2015, and endline data collection is anticipated in May 2017.

**CONCLUSIONS:** This is an innovative intervention programme that aims to address violence by IPs as part of HIV prevention programming with FSWs. Reducing violence is expected to reduce vulnerability to HIV acquisition, and help women to work and live without fear of violence.

**TRIAL REGISTRATION:** Clinical Trials NCT02807259 Jun 24 2016 (retrospectively registered).

29. Mbonye, M., et al. **"Relationship dynamics and sexual risk behaviour of male partners of female sex workers in Kampala, Uganda."** *Afr J AIDS Res* 2016 15(2): 149-55.

Regular male partners of female sex workers (FSWs) represent an important population to reach with HIV-prevention interventions. This paper discusses the relationship dynamics and HIV/sexually transmitted infection risk behaviour of men involved with self-identified FSWs in Kampala. Between 2011 and 2014 we conducted repeat in-depth interviews with 42 male partners of FSWs attending a clinic for women at high risk of HIV-infection in Kampala. Men publicly struggled with the stigma of dating women who are considered to be engaged in a shamed profession, but privately saw meaning in these relationships. In coping with the stigma, some described the work of their partners in terms that distanced them from sex work, while others struggled to have the control that "being a man" demanded since they could not monitor all movements of their partners. Dealing with HIV disclosure was hard and seeking support was difficult for some of the men, leading to missed opportunities and guilt. Despite challenges, relationships with sex workers offered men some benefits such as access to much needed care and treatment. A few men also admitted to being motivated by material and financial benefits from sex workers who they perceived as being rich and this was one factor that helped them sustain the relationships. These findings offer insights into the complex relationship dynamics within high risk sexual partnerships. However, the findings suggest that effective interventions that are couple centred can be established to promote better health.

30. Izulla, P., et al. **"Repeat Use of Post-exposure Prophylaxis for HIV Among Nairobi-Based Female Sex Workers Following Sexual Exposure."** *AIDS Behav* 2016 20(7): 1549-55.

As ART-based prevention becomes available, effectively targeting these interventions to key populations such as female sex workers (FSW) will be critical. In this study we analyze patterns of repeated post-exposure prophylaxis (PEP) access in the context of a large FSW program in Nairobi. During close to 6000 person-years of follow-up, 20 % of participants (n = 1119) requested PEP at least once and 3.7 % requested PEP more than once. Repeat PEP users were younger, had a higher casual partner volume, and were more likely to use condoms with casual and regular partners, have a regular partner, and test for HIV prior to enrolment. Barriers to PEP included stigma, side effects, and lack of knowledge, suggesting repeated promotion may be required for higher rates of uptake. A small subset of FSW, potentially those with heightened risk perception, showed a higher frequency of PEP use; these individuals may be most amenable to rollout of pre-exposure prophylaxis.

31. Biello, K. B., et al. **"The "Safe Sex" Conundrum: Anticipated Stigma From Sexual Partners as a Barrier to PrEP Use Among Substance Using MSM Engaging in Transactional Sex."** *AIDS Behav* 2016.

Pre-exposure prophylaxis (PrEP) is efficacious for HIV prevention when taken consistently; however, barriers to PrEP use are poorly understood among individuals who could benefit from PrEP, including men who have sex with men (MSM) who engage in transactional sex (i.e., sex exchanged for money or drugs). Two hundred and thirty-seven HIV-uninfected, PrEP-naïve MSM reporting concurrent substance dependence and sexual

risk completed a questionnaire on PrEP use barriers. Barriers to PrEP use for MSM who engaged in recent transactional sex (22 %) versus those who had not were compared using an ecological framework. Individual (e.g., HIV stigma, substance use) and structural (e.g., economic, healthcare) barriers did not differ ( $p > 0.05$ ). MSM who recently engaged in transactional sex were more likely to report that anticipated stigma from primary and casual partners would be barriers to PrEP use. Assessing recent transactional sex may help identify men who may need additional counseling to avoid anticipated stigma so they can integrate PrEP into their lives.

32. Maughan-Brown, B., et al. "**Sexual Behaviour of Men and Women within Age-Disparate Partnerships in South Africa: Implications for Young Women's HIV Risk.**" *PLoS One* 2016 11(8): e0159162. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4985138/pdf/pone.0159162.pdf>

**BACKGROUND:** Age-disparate partnerships are hypothesized to increase HIV-risk for young women. However, the evidence base remains mixed. Most studies have focused only on unprotected sex among women in the partnership. Consequently, little is known about other risky behaviours, such as transactional sex, alcohol use, and concurrency, as well as the behaviours of the men who partner with young women. We therefore examined differences in various sexual behaviours of both young women and their male partners by partnership age difference.

**METHODS:** We used nationally representative data from South Africa (2012) on partnerships reported by 16-24 year old black African women ( $n = 818$ ) and by black African men in partnerships with 16-24 year old women ( $n = 985$ ). We compared sexual behaviours in age-disparate partnerships and age-similar partnerships, using multiple logistic regression to control for potential confounders and to assess rural/urban differences.

**RESULTS:** Young women in age-disparate partnerships were more likely to report unprotected sex than young women in similar-aged partnerships (aOR:1.51;  $p = 0.014$ ; 95%CI:1.09-2.11). Men in partnerships with young women were more likely to report unprotected sex (aOR:1.92;  $p < 0.01$ ; 95%CI:1.31-2.81), transactional sex (aOR:2.73;  $p < 0.01$ ; 95%CI:1.64-4.56), drinking alcohol before sex (aOR:1.60;  $p = 0.062$ ; 95%CI:0.98-2.61), and concurrency (aOR:1.39;  $p = 0.097$ ; 95%CI:0.94-2.07) when their partners were five or more years younger. The association between age-disparate partnerships and transactional sex (aOR:4.14;  $p < 0.01$ ; 95%CI: 2.03-8.46) and alcohol use (aOR:2.24;  $p < 0.013$ ; 95%CI:1.20-4.19) was only found in urban areas.

**CONCLUSIONS:** Results provide evidence that young women's age-disparate partnerships involve greater sexual risk, particularly through the risky behaviours of their male partners, with the risk amplified for young women in urban areas.

33. Schulkind, J., et al. "**The social context of gender-based violence, alcohol use and HIV risk among women involved in high-risk sexual behaviour and their intimate partners in Kampala, Uganda.**" *Cult Health Sex* 2016 18(7): 770-84.

This paper explores the interaction between gender-based violence and alcohol use and their links to vulnerability to HIV-infection in a population of women and their regular male partners in Kampala, Uganda. Data derive from 20 life history interviews (10 women and 10 men). Participants were drawn from a cohort of women at high risk of sexually transmitted infection (including HIV). Six of the women were current or former sex workers. Findings reveal that life histories are characterised by recurrent patterns of gender inequity related to violence, limited livelihood options and socioeconomic disadvantage. Overall, findings suggest women are able to negotiate safer sex and protect themselves better against abuse and violence from clients than from their intimate partners, although the status of men as 'client' or 'partner' is transitory and fluid. Among male respondents, alcohol led to intimate partner violence and high levels of sexual-risk taking, such as engagement with sex workers and reduced condom use. However, male partners are a heterogeneous group, with distinct and contrasting attitudes towards alcohol, condom use and violence. Actions to address gender-based violence need to be multi-pronged in order to respond to different needs and circumstances, of both women and men.

34. Bhattacharjee, P., et al. "**Strategies for reducing police arrest in the context of an HIV prevention programme for female sex workers: evidence from structural interventions in Karnataka, South India.**" *J Int AIDS Soc* 2016 19(4 Suppl 3): 20856. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4951536/pdf/JIAS-19-20856.pdf>

**INTRODUCTION:** Female sex workers (FSWs) frequently experience violence in their work environments, violating their basic rights and increasing their vulnerability to HIV infection. Structural interventions addressing such violence are critical components of comprehensive HIV prevention programmes. We describe structural interventions developed to address violence against FSWs in the form of police arrest, in the context of the Bill and Melinda Gates Foundation's India AIDS Initiative (Avahan) in Karnataka, South India. We examine changes in FSW arrest between two consecutive time points during the intervention and identify characteristics that may increase FSW vulnerability to arrest in Karnataka.

**METHODS:** Structural interventions with police involved advocacy work with senior police officials, sensitization workshops, and integration of HIV and human rights topics in pre-service curricula. Programmes for FSWs aimed to enhance collectivization, empowerment and awareness about human rights and to introduce crisis response mechanisms. Three rounds of integrated behavioural and biological assessment surveys were conducted among FSWs from 2004 to 2011. We conducted bivariate and multivariate analyses using data from the second (R2) and third (R3) survey rounds to examine changes in arrests among FSWs over time and to assess associations between police arrest, and the sociodemographic and sex work-related characteristics of FSWs.

**RESULTS:** Among 4110 FSWs surveyed, rates of ever being arrested by the police significantly decreased over time, from 9.9% in R2 to 6.1% in R3 (adjusted odds ratio (AOR) [95% CI]=0.63 [0.48 to 0.83]). Arrests in the preceding year significantly decreased, from 5.5% in R2 to 2.8% in R3 (AOR [95% CI]=0.59 [0.41 to 0.86]). FSWs arrested as part of arbitrary police raids also decreased from 49.6 to 19.5% (AOR [95% CI]=0.21 [0.11 to 0.42]). Certain characteristics, including financial dependency on sex work, street- or brothel-based solicitation and high client volumes, were found to significantly increase the odds of arrest for participants.

**CONCLUSION:** Structural interventions addressing police arrest of FSWs are feasible to implement. Based on our findings, the design of violence prevention and response interventions in Karnataka can be tailored to focus on FSWs, who are disproportionately vulnerable to arrest by police. Context-specific structural interventions can reduce police arrests, create a safer work environment for FSWs and protect fundamental human rights.

35. Ranganathan, M., et al. "**Transactional sex among young women in rural South Africa: prevalence, mediators and association with HIV infection.**" *J Int AIDS Soc* 2016 19(1): 20749. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4965597/pdf/JIAS-19-20749.pdf>

**INTRODUCTION:** Young adolescent women in sub-Saharan Africa are three to four times more likely to be HIV-positive than boys or men. One of the relationship dynamics that is likely to be associated with young women's increased vulnerability to HIV is transactional sex. There are a range of HIV-related risk behaviours that may drive this vulnerability. However, to date, limited epidemiological data exist on the role of transactional sex in increasing HIV acquisition, especially among young women in sub-Saharan Africa. Our paper presents data on the prevalence of self-reported engagement in transactional sex and explores whether transactional sex is associated with increased risk of HIV infection among a cohort of young, rural, sexually active South African women. We also explore whether this relationship is mediated through certain HIV-related risk behaviours.

**METHODS:** We analyzed baseline data from a phase III trial of conditional cash transfers for HIV prevention of 693 sexually active, school-going young women aged 13-20 years in rural South Africa. We examined the association between young women's engagement in transactional sex and HIV infection. Transactional sex is defined as a non-commercial, non-marital sexual relationship whereby sex is exchanged for money and/or

gifts. We explored whether this relationship is mediated by certain HIV-related risk behaviours. We used logistic and multinomial regression and report unadjusted and adjusted odds ratios with 95% CI.

**RESULTS:** Overall, 14% (n=97) of sexually active young women reported engaging in transactional sex. Engagement in transactional sex was associated with an increased risk of being HIV-positive (aOR: 2.5, CI: 95% 1.19-5.25, p=0.01). The effect size of this association remained nearly unchanged when adjusted for certain other dimensions of HIV risk that might help explain the underlying pathways for this relationship.

**CONCLUSIONS:** This study provides quantitative support demonstrating that transactional sex is associated with HIV infection in young women. Even though the specific variables tested do not mediate the relationship, a potential explanation for this association may be that the men with whom young women are having sex belong to networks of sexually connected individuals who are at a "high risk" for HIV infection. The results highlight the importance of structural intervention approaches that can alter the context of young women's HIV risk.

36. Biello, K. B., et al. **"Transactional sex and the challenges to safer sexual behaviors: a study among male sex workers in Chennai, India."** *AIDS Care* 2016: 1-8.

Male sex workers (MSW) are a significant but invisible population in India who are at risk for HIV/sexually transmitted infections (STIs). Few studies from India have documented HIV risk factors and motivations for sex work in this population. Between 2013 and 2014, a community-based convenience sample of 100 MSW in Chennai (south India) completed a baseline risk assessment as part of a behavioral intervention. Participants were  $\geq 18$  years, and reported current sex work. We report medians and proportions, and Wilcoxon-Mann-Whitney and chi-square tests are used to examine differences between sex work and sexual behavior measures by income source. Participants were engaged in sex work for 5.0 years (IQR = 2.3-10.0), and earned 3000 (IQR = 2000-8000) Rupees (<50 USD) per month from sex work. Sixty-four percent reported ever testing for HIV and 20.2% for any STI. The most common reasons for starting sex work were money (83.0%) and pleasure (56.0%). Compared to participants with an additional source of income, those whose only source of income was sex work reported more male clients in the past month (10.0 vs. 6.0,  $p = .017$ ), as well as more condomless anal sex acts with male clients (8.0 vs. 5.0,  $p = .008$ ). Nearly 70.0% were offered more money not to use a condom during sex with a client, and 74.2% reported accepting more money not to use a condom. Three-quarters reported having experienced difficulty using condoms with clients. MSW in India engage in high levels of sexual risk for HIV/STIs. Money appears to be a driving factor for engaging in sex work and condomless sex with clients. HIV prevention interventions with MSW should focus on facilitating skills that will support their ability to negotiate sexual safety in the context of monetary disincentives.

37. Kaufman, M. R., et al. **"Understanding the experiences and needs of female commercial sex workers in Kathmandu, Nepal."** *Health Care Women Int* 2016 37(8): 872-88.

Through this exploratory study, we sought to better understand Nepali female commercial sex workers' (FCSWs') experiences in order to inform HIV prevention and health promotion interventions for this vulnerable and hard-to-reach population. Data were collected through phenomenological interviews with eight FCSWs. Through analysis we reveal promising intervention points to enhance FCSW health, empowerment, and overall well-being. Researchers suggest a combination of structural and individual programs is essential to improving the circumstances of Nepali FCSWs and preventing the spread of HIV. Given Nepal's limited resources and complex environment, it is imperative future prevention programs are focused and guided by FCSWs' lived experiences.

38. Shrestha, R., et al. **"The Use of Female Sex Workers Among Men in Nepal: Prevalence, STIs/HIV-Related Risk Behaviors, and Gender Ideology."** *Prim Prev Insights* 2016 6: 11-17. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4922505/pdf/nihms790578.pdf>

Heterosexual sex involving female sex workers (FSWs) is widely documented for its role in facilitating the

spread of sexually transmitted infections (STIs)/HIV. Critical to such studies, and increasingly considered essential to HIV prevention efforts, is the gender constructs and power dynamics within relationships. However, little efforts have been made, which focus on male clients of FSWs, particularly on the relationship between gender ideologies and men's sexual contact with FSWs, within the Nepali context. The present study aims to fill this critical gap by assessing the prevalence of use of FSWs and its association with STIs/HIV-related risk behaviors and gender ideologies among Nepali men. We used data from the nationally representative Nepal Demographic Health Survey (NDHS) 2011. For the purpose of analyses, we included a sample of 4,121 men, aged 15-49 years. During data analyses, we used multivariate logistic regression models, adjusted for the following variables: age, region, residence, religion, educational level, wealth index, employment status, and cigarette smoking status. Of the total sample, approximately 5% reported the use of FSWs in their lifetime. In regression models, men who had sex with FSWs were more likely to report a history of STIs [adjusted odds ratio (aOR): 3.03; 95% confidence interval (CI): 1.69-5.43;  $P < 0.001$ ], not using condom all the time (aOR: 1.31; 95% CI: 1.05-2.12;  $P = 0.010$ ), more than one sexual partner (aOR: 3.75; 95% CI: 2.18-5.23;  $P < 0.001$ ), and have had early sexual debut (aOR: 2.60; 95% CI: 1.85-3.67;  $P < 0.001$ ). Respondents reporting the endorsement of violence against wives (aOR: 1.65; 95% CI: 1.01-2.84;  $P = 0.04$ ) and male sexual entitlement (aOR: 1.63; 95% CI: 1.21-2.32;  $P = 0.001$ ) were significantly more likely to report sexual contact with FSWs. Our findings highlight the need to develop and implement specifically tailored interventions toward male clients of FSWs, with a particular emphasis on promoting equitable gender roles and beliefs.

39. Parriault, M. C., et al. **"The use of structural equation modelling and behavioural theory to target priority interventions to increase condom use among the intimate partners of sex workers in French Guiana."** *AIDS Care* 2016: 1-7.

French Guiana is the French overseas territory that is most affected by HIV. Sex work seems to be an important driver of the epidemic. Although female sex workers are informed by local NGOs, they still have risky behaviours, including not using condoms with their intimate partner despite knowing HIV is highly prevalent. The objective of this study was to find intervention targets on this specific behaviour. For this, a structural equation model (SEM) was built using assumptions from behavioural theories. Behaviour theories attempt to connect research and practice. Within the health belief model framework, perceived threats, perceived benefits, and self-perceived efficacy were tested. Vulnerability was added because of the particular context of French Guiana. The results highlight that female sex workers' perceived self-efficacy was central in condom use with the intimate partner (with a significant correlation coefficient of 0.52 in the SEM). The perceived self-efficacy was strongly influenced by sociodemographic factors, particularly by nationality. Female sex workers from Brazil seemed to be more comfortable about asking their intimate partner to use condoms (OR: 7.81; CI: 1.87-32.63) than sex workers of other nationalities. These results emphasize that prevention interventions for female sex workers should emphasize their empowerment.

40. Lafort, Y., et al. **"Where Do Female Sex Workers Seek HIV and Reproductive Health Care and What Motivates These Choices? A Survey in 4 Cities in India, Kenya, Mozambique and South Africa."** *PLoS One* 2016 11(8): e0160730. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4975460/pdf/pone.0160730.pdf>

**BACKGROUND:** A baseline cross-sectional survey among female sex workers (FSWs) was conducted in four cities within the context of an implementation research project aiming to improve FSWs' access to HIV, and sexual and reproductive health (SRH) services. The survey measured where FSWs seek HIV/SRH care and what motivates their choice.

**METHODS:** Using respondent-driven sampling (RDS), FWSs were recruited in Durban, South Africa (n = 400), Tete, Mozambique (n = 308), Mombasa, Kenya (n = 400) and Mysore, India (n = 458) and interviewed. RDS-adjusted proportions were estimated by non-parametric bootstrapping, and compared across cities using post-hoc pairwise comparison tests.

**RESULTS:** Across cities, FSWs most commonly sought care for the majority of HIV/SRH services at public health facilities, most especially in Durban (ranging from 65% for condoms to 97% for HIV care). Services

specifically targeting FSWs only had a high coverage in Mysore for STI care (89%) and HIV testing (79%). Private-for-profit clinics were important providers in Mombasa (ranging from 17% for STI care and HIV testing to 43% for HIV care), but not in the other cities. The most important reason for the choice of care provider in Durban and Mombasa was proximity, in Tete 'where they always go', and in Mysore cost of care. Where available, clinics specifically targeting FSWs were more often chosen because of shorter waiting times, perceived higher quality of care, more privacy and friendlier personnel.

**CONCLUSION:** The place where care is sought for HIV/SRH services differs substantially between cities. Targeted services have limited coverage in the African cities compared to Mysore. Convenience appears more important for choosing the place of care than aspects of quality of care. The best model to improve access, linking targeted interventions with general health services, will need to be tailored to the specific context of each city.

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## Transgender People - 30

1. Budhwani, H., et al. "**Association between violence exposure and condom non-use among transgender sex workers in the Dominican Republic: the mediating role of trust.**" *Int J STD AIDS* 2016.

Transgender women are a high-risk population, and transgender female sex workers are one of the most vulnerable populations globally. Transgender female sex workers have high rates of sexually transmitted infections, HIV, and exposure to violence compared to cisgender sex workers; these negative exposures are associated with an increase in HIV risk behaviors. Thus, the aim of this study is to examine the relationship between exposure to violence and condom non-use in transgender female sex workers residing in the Dominican Republic. We hypothesize that mediation exists wherein the effects of violence on condom non-use are mediated by distrust. Facilitated interview data (N = 78) were used. Primary outcome was condom non-use with coercive partner. Four logistic regression models and a mediation analysis were employed. Respondents' mean age was 23.0 years (SD = 4.8) with an average level education attainment of 10.1 years (SD = 2.6); 35% reported experiencing violence; 17% believed that a person who asks a partner to use a condom does not trust that partner. Exploratory mediation analyses yielded a significant indirect effect of experience with violence on condom non-use through distrust (b = 0.64, SE = 0.33, p = .05). Results suggest that distrust mediates the association between experienced violence and condom use with coercive partners. It was concluded that developing interventions on increasing resilience and perceived self-worth, plus provision of screening for violence and referral services may reduce maladaptive attributions and cognitions about condom use. Furthermore, by implementing policies that protect vulnerable populations, and subsequently enforcing them, the Dominican Republic has the opportunity to improve overall population health and protect their most disadvantaged citizens.

2. Hoagland, B., et al. "**Awareness and Willingness to Use Pre-exposure Prophylaxis (PrEP) Among Men Who Have Sex with Men and Transgender Women in Brazil.**" *AIDS Behav* 2016.

Antiretroviral pre-exposure prophylaxis (PrEP) is recommended to prevent HIV infection among high-risk men who have sex with men (MSM) though not available in Brazil where the HIV epidemic persists unabated in this group. This cross-sectional study describes PrEP awareness and willingness and associated factors among MSM and transvestite/transgender women (trans women) pre-screened for the PrEP Brasil study. Awareness was reported by 61.3 % of the participants and was associated with age, education, site, study period and prior HIV testing. Most participants (82.1 %) were willing to use PrEP, which was associated with site, study period, number of male condomless anal sexual partners and anal sex with HIV positive/unknown partners. PrEP information is need among young and less educated individuals. Willingness to use PrEP was

high and future studies should be conducted to confirm PrEP acceptability and the characteristics of the population who chose to adopt this intervention.

3. Nugroho, A., et al. **"Behavioral interventions to reduce HIV risk behavior for MSM and transwomen in Southeast Asia: a systematic review."** *AIDS Care* 2016: 1-7.

This systematic review aims to gain insights from existing literature from Southeast Asian countries to improve future HIV prevention programs for men who have sex with men (MSM) and transgender women (transwomen). We conducted a systematic search in six international databases for literature published prior to 1 January 2015. We included studies describing behavioral interventions targeting MSM and/or transwomen, and conducted in at least one Southeast Asian country. Five out of 575 screened studies met the inclusion criteria and reported a significant intervention effect on at least one outcome measure, that is, condom use (with casual or commercial partner), water-based lubricant use, number of sex partners, HIV prevention knowledge, or willingness to use pre-exposure prophylaxis. Peer education/outreach was the most commonly employed type of intervention in the five included studies and was usually delivered as an element of a larger intervention package, together with condom distribution and the provision of drop-in centers. Motivational interviewing was effective, while internet-based interventions appeared to be a viable platform for intervention delivery. Nevertheless, research on behavioral interventions among MSM and transwomen in Southeast Asia is limited. Future interventions should be culturally appropriate, theoretically grounded, and rigorously evaluated. Only then can we best address the HIV epidemic among MSM and transwomen in this region.

4. Stahlman, S., et al. **"Characterizing the HIV risks and potential pathways to HIV infection among transgender women in Cote d'Ivoire, Togo and Burkina Faso."** *J Int AIDS Soc* 2016 19(3 Suppl 2): 20774. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949310/pdf/JIAS-19-20774.pdf>

**INTRODUCTION:** Transgender women are at high risk for the acquisition and transmission of HIV. However, there are limited empiric data characterizing HIV-related risks among transgender women in sub-Saharan Africa. The objective of these analyses is to determine what factors, including sexual behaviour stigma, condom use and engagement in sex work, contribute to risk for HIV infection among transgender women across three West African nations.

**METHODS:** Data were collected via respondent-driven sampling from men who have sex with men (MSM) and transgender women during three- to five-month intervals from December 2012 to October 2015 across a total of six study sites in Togo, Burkina Faso and Cote d'Ivoire. During the study visit, participants completed a questionnaire and were tested for HIV. Chi-square tests were used to compare the prevalence of variables of interest between transgender women and MSM. A multilevel generalized structural equation model (GSEM) was used to account for clustering of observations within study sites in the multivariable analysis, as well as to estimate mediated associations between sexual behaviour stigma and HIV infection among transgender women.

**RESULTS:** In total, 2456 participants meeting eligibility criteria were recruited, of which 453 individuals identified as being female/transgender. Transgender women were more likely than MSM to report selling sex to a male partner within the past 12 months ( $p < 0.01$ ), to be living with HIV ( $p < 0.01$ ) and to report greater levels of sexual behaviour stigma as compared with MSM ( $p < 0.05$ ). In the GSEM, sexual behaviour stigma from broader social groups was positively associated with condomless anal sex (adjusted odds ratio (AOR)=1.33, 95% confidence interval (CI)=1.09, 1.62) and with selling sex (AOR=1.23, 95% CI=1.02, 1.50). Stigma from family/friends was also associated with selling sex (AOR=1.42, 95% CI=1.13, 1.79), although no significant associations were identified with prevalent HIV infection.

**CONCLUSIONS:** These data suggest that transgender women have distinct behaviours from those of MSM and that stigma perpetuated against transgender women is impacting HIV-related behaviours. Furthermore, given these differences, interventions developed for MSM will likely be less effective among transgender



women. This situation necessitates dedicated responses for this population, which has been underserved in the context of both HIV surveillance and existing responses.

5. Johnston, L. G., et al. **"Correlates of Forced Sex Among Young Men Who Have Sex With Men in Yangon and Monywa, Myanmar."** *Arch Sex Behav* 2016.

Forced sex at an early age is associated with a variety of negative factors including increased illness, high-risk sexual and substance-use behaviors, and mental and psychological stress. These sequelae may be compounded for men who have sex with men (MSM), especially young MSM and those with feminine gender identity and expression. This survey examined the prevalence and associations of forced sex among young MSM in two cities in Myanmar. In 2013-2014, surveys using respondent-driven sampling collected data on 200 young MSM in Yangon and 200 in Monywa. One quarter of young MSM in Yangon and 21 % in Monywa reported ever experiencing forced sex. In a multivariable model, having problems with family members and having any MSM friends with many partners had higher odds of experiencing forced sex. Having maternal acceptance of same-sex attraction (compared to acceptance by both parents) and becoming aware of their same-sex attraction at or above the age of 16 had lower odds of experiencing forced sex. Focused research is needed to understand the family and other social dynamics affecting vulnerability to forced sex, as well as specific sexual risks associated with forced sex among young MSM, including HIV acquisition and transmission risks.

6. Defechereux, P. A., et al. **"Depression and Oral FTC/TDF Pre-exposure Prophylaxis (PrEP) Among Men and Transgender Women Who Have Sex With Men (MSM/TGW)."** *AIDS Behav* 2016 20(7): 1478-88.

We conducted a longitudinal and cross-sectional analysis of depressive symptomology in iPrEx, a randomized, placebo-controlled trial of daily, oral FTC/TDF HIV pre-exposure prophylaxis (PrEP) in men and transgender women who have sex with men. Depression-related adverse events (AEs) were the most frequently reported severe or life-threatening AEs and were not associated with being randomized to the FTC/TDF arm (152 vs. 144 respectively OR 0.66 95 % CI 0.35-1.25). Center for Epidemiologic Studies Depression scale (CES-D) and a four questions suicidal ideation scale scores did not differ by arm. Participants reporting forced sex at anal sexual debut had higher CES-D scores (coeff: 3.23; 95 % CI 1.24-5.23) and were more likely to have suicidal ideation (OR 2.2; 95 % CI 1.09-4.26). CES-D scores were higher among people reporting non-condom receptive anal intercourse (ncRAI) (OR 1.46; 95 % CI 1.09-1.94). We recommend continuing PrEP during periods of depression in conjunction with provision of mental health services.

7. Shaw, S. Y., et al. **"Descriptive Epidemiology of Factors Associated with HIV Infections Among Men and Transgender Women Who Have Sex with Men in South India."** *LGBT Health* 2016 3(4): 292-9. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4976224/pdf/lgbt.2015.0023.pdf>

**PURPOSE:** Men and transgender women who have sex with men (MTWSM) continue to be an at-risk population for human immunodeficiency virus (HIV) infection in India. Identification of risk factors and determinants of HIV infection is urgently needed to inform prevention and intervention programming.

**METHODS:** Data were collected from cross-sectional biological and behavioral surveys from four districts in Karnataka, India. Multivariable logistic regression models were constructed to examine factors related to HIV infection. Sociodemographic, sexual history, sex work history, condom practices, and substance use covariates were included in regression models.

**RESULTS:** A total of 456 participants were included; HIV prevalence was 12.4%, with the highest prevalence (26%) among MTWSM from Bellary District. In bivariate analyses, district ( $P = 0.002$ ), lack of a current regular female partner ( $P = 0.022$ ), and reported consumption of an alcoholic drink in the last month ( $P = 0.004$ ) were associated with HIV infection. In multivariable models, only alcohol use remained statistically significant (adjusted odds ratios: 2.6, 95% confidence intervals: 1.2-5.8;  $P = 0.02$ ).

**CONCLUSION:** The prevalence of HIV continues to be high among MTWSM, with the highest prevalence found in Bellary district.

8. Shaikh, S., et al. "**Empowering communities and strengthening systems to improve transgender health: outcomes from the Pehchan programme in India.**" *J Int AIDS Soc* 2016 19(3 Suppl 2): 20809. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949313/pdf/JIAS-19-20809.pdf>

**INTRODUCTION:** Transgender populations face inequalities in access to HIV, health and social services. In addition, there is limited documentation of models for providing appropriately tailored services and social support for transgender populations in low- and middle-income countries. This paper presents outcomes of the Global Fund-supported Pehchan programme, which aimed to strengthen community systems and provide HIV, health, legal and social services to transgender communities across 18 Indian states through a rights-based empowerment approach.

**METHODS:** We used a pre- and post-intervention cross-sectional survey design with retrospective analysis of programmatic data. Using stratified sampling, we identified 268 transgender participants in six Indian states from a total of 48,280 transgender people served by Pehchan through 186 community-based organizations. We quantified the impact of interventions by comparing baseline and end line indicators of accessed health social and legal services. We also assessed end line self-efficacy and collective action with regard to social support networks.

**RESULTS:** There were significant increases in community-based demand and use of tailored health, legal, social and psychological services over the time of the Pehchan programme. We report significant increases in access to condoms (12.5%,  $p < 0.001$ ) and condom use at last anal sex with both regular (18.1%,  $p < 0.001$ ) and casual (8.1%,  $p < 0.001$ ) male partners. Access to HIV outreach education and testing and counselling services significantly increased (20.10%,  $p < 0.001$ ; 33.7%,  $p < 0.001$ ). In addition, significant increases in access to emergency crisis response (19.7%,  $p < 0.001$ ), legal support (26.8%,  $p < 0.001$ ) and mental health services (33.0%,  $p < 0.001$ ) were identified. Finally, we note that the Pehchan programme successfully provided a platform for the formation, collectivization and visibility of peer support groups.

**CONCLUSIONS:** The Pehchan programme's community involvement, rights-based collectivization and gender-affirming approaches significantly improved both demand and access to tailored HIV, health and social services for transgender individuals across India. Furthermore, the Pehchan programme successfully fostered both self-efficacy and collective identity and served as a model for addressing the unique health needs of transgender communities. Continued strengthening of health, social and community systems to better respond to the unique needs of transgender communities is needed in order to sustain these gains.

9. Singh, J. A. "**Ethical Issues to Consider in the Design of HIV Prevention Trials Involving Transgender People.**" *J Acquir Immune Defic Syndr* 2016 72 Suppl 3: S252-5.

Although transgender women have been included in HIV prevention pre-exposure prophylaxis studies, no pre-exposure prophylaxis study has focused exclusively on transgender persons. Drawing on the cardinal principles of ethics espoused in the Belmont Report, this work highlights, among other issues, that (1) the principle of Justice requires the HIV prevention field to focus exclusively on transgender persons, (2) the disclosure of potential study-related risks to study participants demonstrates Respect for Persons, and (3) devising risk mitigation plans, optimizing a proposed study's standard of care, and the provision of ancillary care satisfy the principle of Beneficence.

10. Poteat, T. C., et al. "**Evidence for action: a call for the global HIV response to address the needs of transgender populations.**" *J Int AIDS Soc* 2016 19(3 Suppl 2): 21193. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949318/pdf/JIAS-19-21193.pdf>

11. Gibson, B. A., et al. "**Gender identity, healthcare access, and risk reduction among Malaysia's mak nyah community.**" *Glob Public Health* 2016 11(7-8): 1010-25.

Transgender women (TGW) face compounded levels of stigma and discrimination, resulting in multiple health risks and poor health outcomes. TGW identities are erased by forcing them into binary sex categories in society or treating them as men who have sex with men (MSM). In Malaysia, where both civil and religious law criminalise them for their identities, many TGW turn to sex work with inconsistent prevention methods, which increases their health risks. This qualitative study aims to understand how the identities of TGW sex workers shapes their healthcare utilisation patterns and harm reduction behaviours. In-depth, semi-structured interviews were conducted with 21 male-to-female transgender (mak nyah) sex workers in Malaysia. Interviews were transcribed, translated into English, and analysed using thematic coding. Results suggest that TGW identity is shaped at an early age followed by incorporation into the mak nyah community where TGW were assisted in gender transition and introduced to sex work. While healthcare was accessible, it failed to address the multiple healthcare needs of TGW. Pressure for gender-affirming health procedures and fear of HIV and sexually transmitted infection screening led to potentially hazardous health behaviours. These findings have implications for developing holistic, culturally sensitive prevention and healthcare services for TGW.

12. Poteat, T., et al. "**Global Epidemiology of HIV Infection and Related Syndemics Affecting Transgender People.**" *J Acquir Immune Defic Syndr* 2016 72 Suppl 3: S210-9.

**INTRODUCTION:** Transgender populations have been underrepresented in HIV epidemiologic studies and consequently in HIV prevention, care, and treatment programs. Since 2012, there has been a dramatic increase in research focused on transgender people. Studies highlight the burden of HIV and risk determinants, including intersecting stigmas, as drivers of syndemics among transgender populations. This review synthesizes the most recent global epidemiology of HIV infection and describes current gaps in research and interventions to inform prioritization of HIV research for transgender populations.

**METHODS:** A systematic review was conducted of the medical literature published between January 1, 2012 and November 30, 2015. The data focused on HIV prevalence, determinants of risk, and syndemics among transgender populations.

**RESULTS:** Estimates varied dramatically by location and subpopulation. Transfeminine individuals have some of the highest concentrated HIV epidemics in the world with laboratory-confirmed prevalence up to 40%. Data were sparse among trans masculine individuals; however, they suggest potential increased risk for trans masculine men who have sex with men (MSM). No prevalence data were available for transgender people across Sub-Saharan Africa or Eastern Europe/Central Asia. Emerging data consistently support the association of syndemic conditions with HIV risk in transgender populations.

**DISCUSSION:** Addressing syndemic conditions and gender-specific challenges is critical to ensure engagement and retention in HIV prevention by transgender populations. Future research should prioritize: filling knowledge gaps in HIV epidemiology; elucidating how stigma shapes syndemic factors to produce HIV and other deleterious effects on transgender health; and understanding how to effectively implement HIV interventions for transgender people.

13. Reisner, S. L., et al. "**Global health burden and needs of transgender populations: a review.**" *Lancet* 2016 388(10042): 412-36.

Transgender people are a diverse population affected by a range of negative health indicators across high-income, middle-income, and low-income settings. Studies consistently document a high prevalence of adverse health outcomes in this population, including HIV and other sexually transmitted infections, mental health distress, and substance use and abuse. However, many other health areas remain understudied, population-based representative samples and longitudinal studies are few, and routine surveillance efforts for transgender population health are scarce. The absence of survey items with which to identify transgender respondents in general surveys often restricts the availability of data with which to estimate the magnitude of health inequities and characterise the population-level health of transgender people globally. Despite the limitations, there are sufficient data highlighting the unique biological, behavioural, social, and structural

contextual factors surrounding health risks and resiliencies for transgender people. To mitigate these risks and foster resilience, a comprehensive approach is needed that includes gender affirmation as a public health framework, improved health systems and access to health care informed by high quality data, and effective partnerships with local transgender communities to ensure responsiveness of and cultural specificity in programming. Consideration of transgender health underscores the need to explicitly consider sex and gender pathways in epidemiological research and public health surveillance more broadly.

14. Reisner, S. L., et al. **"A global research synthesis of HIV and STI biobehavioural risks in female-to-male transgender adults."** *Glob Public Health* 2016 11(7-8): 866-87.

There is a growing interest in HIV infection and sexually transmitted infection (STI) disease burden and risk among transgender people globally; however, the majority of work has been conducted with male-to-female transgender populations. This research synthesis comprehensively reviews HIV and STI research in female-to-male (FTM) transgender adults. A paucity of research exists about HIV and STIs in FTMs. Only 25 peer-reviewed papers (18 quantitative, 7 qualitative) and 11 'grey literature' reports were identified, most in the US or Canada, that include data identifying HIV and STI risks in FTMs (five with fully laboratory-confirmed HIV and/or STIs, and five with partial laboratory confirmation). Little is known about the sexual and drug use risk behaviours contributing to HIV and STIs in FTMs. Future directions are suggested, including the need for routine surveillance and monitoring of HIV and STIs globally by transgender identity, more standardised sexual risk assessment measures, targeted data collection in lower- and middle-income countries, and explicit consideration of the rationale for inclusion/exclusion of FTMs in category-based prevention approaches with MSM and transgender people. Implications for research, policy, programming, and interventions are discussed, including the need to address diverse sexual identities, attractions, and behaviours and engage local FTM communities.

15. Colby, D., et al. **"HIV and Syphilis Prevalence Among Transgender Women in Ho Chi Minh City, Vietnam."** *AIDS Behav* 2016.

Globally, transgender women have higher risk for HIV than the general population and men who have sex with men, but there is little data on this population in Vietnam. In 2015 we conducted a biological and behavioral survey of 205 transgender women in Ho Chi Minh City, Vietnam. Factors associated with HIV and syphilis infection were assessed through multivariable logistic regression models. Median age was 25 years (range 18-64). Overall prevalence was 18.0 % for HIV and 17.6 % for syphilis. Factors independently associated with HIV infection included risky alcohol use [adjusted Odds Ratio (aOR) 3.55, 95 % confidence interval (CI) 1.53-8.21], amphetamine stimulant use (aOR 2.90, 95 % CI 1.27-6.61), sex with male sex workers (aOR 4.73, 95 % CI 1.72-13.0), and history of sex with an adult before the age of 18 years (aOR 2.97, 95 % CI 1.06-8.34). Two factors associated with syphilis infection were HIV infection (aOR 2.37, 95 % CI 1.03-5.45) and condomless anal sex with casual partners (aOR 2.27, 95 % CI 1.03-5.00). In order to address the HIV and syphilis epidemics in Vietnamese transgender women, interventions are needed to make HIV and sexually transmitted infection screening and treatment more accessible.

16. Oldenburg, C. E., et al. **"HIV Pre-exposure Prophylaxis Indication and Readiness Among HIV-Uninfected Transgender Women in Ho Chi Minh City, Vietnam."** *AIDS Behav* 2016.

Few studies have considered acceptability of HIV pre-exposure prophylaxis (PrEP) among transgender women in Southeast Asia. We assessed PrEP indications and readiness among a sample of HIV-uninfected transgender women in Ho Chi Minh City, Vietnam. Of 168 HIV-uninfected transgender women, 72.6 % met criteria for PrEP based on United States CDC guidelines. PrEP indication was inversely associated with PrEP interest (76.0 % interested among those for whom PrEP was indicated; 89.1 % among those for whom it was not; aOR 0.16, 95 % CI 0.04-0.67, P = 0.01). PrEP readiness, defined as having heard of, being interested in taking, and believing that PrEP is efficacious, was low (7.7 %). The results of this study indicate potential need for PrEP among transgender women in Ho Chi Minh City, but very low awareness of PrEP in the community. Future PrEP implementation programs should include counseling on HIV risk and eligibility for PrEP to ensure that PrEP is available to those who may benefit the most from it.

17. Kaplan, R. L., et al. **"HIV prevalence and demographic determinants of condomless receptive anal intercourse among trans feminine individuals in Beirut, Lebanon."** *J Int AIDS Soc* 2016 19(3 Suppl 2): 20787. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949314/pdf/JIAS-19-20787.pdf>

**INTRODUCTION:** Growing evidence suggests increased HIV incidence in the Middle East and North Africa among "key populations." To date, epidemiological data have not accurately included and measured HIV prevalence and risk among trans feminine individuals in the region. Through the lens of the Gender Affirmation Framework, we assessed demographic correlates of risk behaviour and the prevalence of HIV among trans feminine individuals in Lebanon.

**METHODS:** Long-chain referral sampling was used to recruit 53 participants for completion of a behavioural survey and optional free rapid HIV tests. Data were collected using interviewer-administered questionnaires. A multivariable logistic regression model was used to identify demographic determinants of HIV risk behaviour.

**RESULTS:** Fifty-seven percent of participants reported condomless receptive anal intercourse (CRAI) with male partner(s) in the last three months, 40% of whom reported not knowing the HIV status of the partner(s). Of the participants tested for HIV as part of the study or via self-report, four (10%) were HIV positive; 13 declined HIV testing. Forty percent of the sample had no prior history of HIV testing. A history of trauma such as sexual abuse/assault was reported by almost half of the participants (49%). Sixty-eight percent reported experiencing physical violence and 32% police arrest, because of gender identity or presentation. A staggering 98% reported having experienced gender identity or gender presentation-related discrimination. Sixty-six percent of the sample reported current sex work; sex work was correlated with CRAI but was not significant in multivariate analysis. In regression analysis, "openness"/"outness" about transgender identity at work or school was significantly associated with CRAI. Surprisingly, a history of sexual abuse/assault was negatively correlated with CRAI, suggesting the need for further inquiry.

**CONCLUSIONS:** The results of this study provide implications for how to address sexual health among trans feminine individuals in Lebanon and the greater Middle East and North Africa region.

18. Silva-Santisteban, A., et al. **"HIV prevention among transgender women in Latin America: implementation, gaps and challenges."** *J Int AIDS Soc* 2016 19(3 Suppl 2): 20799. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949309/pdf/JIAS-19-20799.pdf>

**INTRODUCTION:** Transgender women are the population most vulnerable to HIV in Latin America, with prevalence between 18 and 38%. Although the region has improved antiretroviral coverage, there is an urgent need to strengthen HIV prevention for key populations to meet regional targets set by governments. We conducted an assessment on the state of HIV prevention among transgender women in Latin America.

**METHODS:** We conducted a desk review of Global AIDS Response Progress Reports, national strategic plans, technical reports and peer-reviewed articles from 17 Latin American countries published through January 2015. The review was preceded by 12 semi-structured interviews with UNAIDS and Pan American Health Organization officers and a discussion group with transgender women regional leaders, to guide the identification of documents. We assessed access to, implementation and coverage of programmes; legal frameworks; community participation; inclusion of new strategies; and alignment with international recommendations.

**RESULTS AND DISCUSSION:** Overall, prevention activities in the region focus on condom distribution, diagnosis of sexually transmitted infections and peer education, mostly delivered at health facilities, with limited community involvement. Argentina and Uruguay have implemented structural interventions to address social inclusion. Argentina, Brazil and Mexico have adopted early initiation of antiretroviral therapy and treatment as prevention strategies. The other countries do not have substantial tailored interventions and consider the trans population a sub-population of men who have sex with men in data collection and

programme implementation. Limited coverage of services, discrimination and a deep-seated mistrust of the health system among transgender women are the main barriers to accessing HIV prevention services. Promising interventions include health services adapted to transgender women in Mexico; LGBT-friendly clinics in Argentina that incorporate community and health workers in mixed teams; task-shifting to community-based organizations; mobile HIV testing; and gender identity laws.

**CONCLUSIONS:** Transgender women in Latin America continue to have limited access to HIV prevention services, which presents a bottleneck for reaching prevention goals and incorporating new prevention interventions. Prevention programmes should be rights-based; offer tailored, holistic interventions; and involve transgender women in their design and implementation.

19. Konda, K. A., et al. **"HIV Status Communication with Sex Partners and Associated Factors Among High-Risk MSM and Transgender Women in Lima, Peru."** *AIDS Behav* 2016.

Men who have sex with men (MSM) and transgender women (TW) are key populations in the HIV epidemic. HIV status communication between sex partners can inform decisions regarding sexual behavior. MSM and TW were asked about HIV status communication with sex partners at baseline, 9- and 18-months. GEE models assessed associations with HIV status communication at baseline using prevalence ratios (PRs) and longitudinally using odds ratios (ORs). At baseline, those who had previously had an HIV test, disclosed their HIV status to 42 % of their sex partners. HIV status communication was associated with knowing their sex partner's HIV status at baseline (aPR 5.20) and longitudinally (aOR 1.86). HIV positivity at baseline was negatively associated with HIV status communication during follow-up (aOR 0.55). All reported aPRs and aORs have  $p < 0.05$ . Interventions promoting HIV status communication and more frequent HIV testing should be explored as current efforts are insufficient.

20. Salazar, X., et al. **"How Peru introduced a plan for comprehensive HIV prevention and care for transwomen."** *J Int AIDS Soc* 2016 19(3 Suppl 2): 20790. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949315/pdf/JIAS-19-20790.pdf>

**INTRODUCTION:** As a group, transwomen in Peru have the highest prevalence of HIV (>20%) in the country, but they have little access to HIV prevention, testing and care services. Until recently, Peru's national HIV programme did not recognize transwomen and had remained essentially static for decades. This changed in December 2014, when the Ministry of Health expressed its commitment to improve programming for transwomen and to involve transwomen organizations by prioritizing the development of a "Targeted Strategy Plan of STIs/HIV/AIDS Prevention and Comprehensive Care for Transwomen."

**DISCUSSION:** A policy dialogue between key stakeholders - Peru's Ministry of Health, academic scientists, civil society, transgender leaders and international agencies - created the conditions for a change in Peru's national HIV policy for transwomen. Supported by the effective engagement of all sectors, the Ministry of Health launched a plan to provide comprehensive HIV prevention and care for transwomen. The five-year plan includes new national guidelines for HIV prevention, care and support, and country-level investments in infrastructure and equipment. In addition to new biomedical strategies, the plan also incorporates several strategies to address structural factors that contribute to the vulnerability of transwomen. We identified three key factors that created the right conditions for this change in Peru's HIV policy. These factors include (1) the availability of solid evidence, based on scientific research; (2) ongoing efforts within the transwomen community to become better advocates of their own rights; and (3) a dialogue involving honest discussions between stakeholders about possibilities of changing the nation's HIV policy.

**CONCLUSIONS:** The creation of Peru's national plan for HIV prevention and care for transwomen shows that long-term processes, focused on human rights for transwomen in Peru, can lead to organizational and public-policy change.

21. Kaplan, R. L., et al. **"In the name of brevity: The problem with binary HIV risk categories."** *Glob Public Health* 2016 11(7-8): 824-34.

According to the 'Consolidated Guidelines on HIV Prevention, Diagnosis, Treatment and Care for Key Populations' there are five groups of people at elevated risk of HIV, including 'transgender women or transgender men who have receptive anal sex with men'. Although cost effectiveness strategies and best practice lessons recommend targeting specific populations for HIV prevention, existing risk categories lack specificity, and may in fact cause further confusion. Existing categories of risk often perpetuate notions of gender and sexuality that can erroneously exclude, alienate, and stigmatise those who are at the highest risk and thus should be prioritised. We review the troubled history of the MSM category and the problematic conflation of trans feminine individuals and MSM in much of the existing HIV literature, and how this practice has stymied progress in slowing the HIV epidemic in the most at-risk groups, including those who do not fit neatly into binary notions of gender and sex. We draw from examples in the field, specifically among trans feminine people in Beirut and San Francisco, to illustrate the lived experiences of individuals whose identities may not fit into Euro-Atlantic constructs of HIV prevention categories.

22. Scheim, A. I., et al. **"Inequities in access to HIV prevention services for transgender men: results of a global survey of men who have sex with men."** *J Int AIDS Soc* 2016 19(3 Suppl 2): 20779. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949311/pdf/JIAS-19-20779.pdf>

**INTRODUCTION:** Free or low-cost HIV testing, condoms, and lubricants are foundational HIV prevention strategies, yet are often inaccessible for men who have sex with men (MSM). In the global context of stigma and poor healthcare access, transgender (trans) MSM may face additional barriers to HIV prevention services. Drawing on data from a global survey of MSM, we aimed to describe perceived access to prevention services among trans MSM, examine associations between stigma and access, and compare access between trans MSM and cisgender (non-transgender) MSM.

**METHODS:** The 2014 Global Men's Health and Rights online survey was open to MSM (inclusive of trans MSM) from any country and available in seven languages. Baseline data (n=3857) were collected from July to October 2014. Among trans MSM, correlations were calculated between perceived service accessibility and anti-transgender violence, healthcare provider stigma, and discrimination. Using a nested matched-pair study design, trans MSM were matched 4:1 to cisgender MSM on age group, region, and HIV status, and conditional logistic regression models compared perceived access to prevention services by transgender status.

**RESULTS:** About 3.4% of respondents were trans men, of whom 69 were included in the present analysis. The average trans MSM participant was 26 to 35 years old (56.5%); lived in western Europe, North America, or Oceania (75.4%); and reported being HIV-negative (98.6%). HIV testing, condoms, and lubricants were accessible for 43.5, 53.6, and 26.1% of trans MSM, respectively. Ever having been arrested or convicted due to being trans and higher exposure to healthcare provider stigma in the past six months were associated with less access to some prevention services. Compared to matched cisgender controls, trans MSM reported significantly lower odds of perceived access to HIV testing (OR=0.57, 95% CI=0.33, 0.98) and condom-compatible lubricants (OR=0.54, 95% CI=0.30, 0.98).

**CONCLUSIONS:** This first look at access to HIV prevention services for trans MSM globally found that most reported inadequate access to basic prevention services and that they were less likely than cisgender MSM to have access to HIV testing and lubricants. Results indicate the need to enhance access to basic HIV prevention services for trans MSM, including MSM-specific services.

23. Cai, Y., et al. **"Prevalence and associated factors of condomless receptive anal intercourse with male clients among transgender women sex workers in Shenyang, China."** *J Int AIDS Soc* 2016 19(3 Suppl 2): 20800. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949316/pdf/JIAS-19-20800.pdf>

**INTRODUCTION:** Globally, transgender women sex workers have a high prevalence of HIV and condomless receptive anal intercourse with male clients (CRAIMC). We investigated the prevalence of CRAIMC and factors associated with CRAIMC among transgender women sex workers in China.

**METHODS:** In 2014, we anonymously interviewed 220 transgender women sex workers face to face in Shenyang, China. Those who self-reported as HIV negative or as having unknown HIV serostatus were invited to take up free, anonymous HIV rapid testing (n=183); 90 did so. Using CRAIMC in the last month as the dependent variable, three types of associated factors were investigated, in addition to background factors: feminizing medical interventions, sex work and perceptions related to condom use. Univariate and multiple logistic regression models were fitted.

**RESULTS:** Of the participants, 16.8% self-reported as HIV positive and 9.1% were detected to be HIV positive through free HIV testing; 26.8% had had CRAIMC in the last month, 45.5% had performed sex work in other Chinese cities (last year), and 23.2% had had condomless anal intercourse with men who were non-clients. In the adjusted analysis, significant factors associated with CRAIMC (last month) included the following: 1) any feminizing medical intervention performed (adjusted odds ratio, AOR: 2.22); 2) sex-work-related factors, including recruitment of male clients most often at hotels (AOR: 5.02) and charge per episode of transactional sex (201 to 400 RMB, AOR: 0.27; reference group:  $\leq$ 100 RMB); and 3) perceptions related to condom use, including perceived transgender identity's impact on condomless sex such as wearing feminine attire, concern about exposing their status as a transgender woman to male clients (AOR: 1.20) and perceived self-efficacy of consistent condom use with male clients (AOR: 0.56). Perceived self-efficacy of consistent condom use with male clients fully mediated the association between perceived transgender identity's impact on condomless sex and CRAIMC.

**CONCLUSIONS:** HIV prevalence among transgender women sex workers was high but probably underestimated. The high prevalence of condomless anal intercourse with male non-clients and high mobility in sex work among this population in China are causes for concern. Risk factors for CRAIMC were multidimensional and should be considered when designing interventions targeting transgender women sex workers. Such interventions are urgently needed.

24. Maiorana, A., et al. "**Proyecto Orgullo**", an HIV prevention, empowerment and community mobilisation intervention for gay men and transgender women in Callao/Lima, Peru." *Glob Public Health* 2016 11(7-8): 1076-92.

We used qualitative, quantitative, and observational methods to assess the feasibility, acceptability, and potential efficacy of Proyecto Orgullo (PO), a pilot community mobilisation intervention to decrease sexual risk, promote health-seeking behaviours, and facilitate personal and community empowerment among gay men (GM) and transgender women (TW) in Peru. PO was adapted from Mpowerment and Hermanos de Luna y Sol, two US interventions. PO included six interrelated core elements: (1) Self-reflection Small Group sessions; (2) Supporting peers in HIV prevention; (3) Mobilisation Activities addressing HIV, GM/TW issues, and community empowerment; (4) A Core Group (staff + GM/TW volunteers) designing/implementing those activities; (5) A Project Space; (6) Publicity. PO included specific components for TW, but promoted that GM/TW, who historically have not worked well together, collaborate for a common goal. We found that PO was embraced by GM/TW. PO positively influenced GM/TW's HIV prevention beliefs, self-efficacy, and behaviours; provided social support and created community; facilitated individual and community empowerment; achieved that GM/TW collaborate; and established a functional Community Centre for socialising/conducting mobilisation activities. Community mobilisation strategies, lacking from HIV prevention efforts in Peru but considered key to HIV prevention, can help improve health-seeking behaviours and consolidate social norms supporting preventive behaviours among GM/TW.

25. Wolf, R. C., et al. "**Putting the t in tools: a roadmap for implementation of new global and regional transgender guidance.**" *J Int AIDS Soc* 2016 19(3 Suppl 2): 20801. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949319/pdf/JIAS-19-20801.pdf>

Transgender (trans) activists and global health partners have collaborated to develop new tools and guidance for assessing and addressing HIV and other health needs within trans populations. Trans women experience a heavy burden of HIV and other sexually transmitted infections (STIs), high incidence of violence and difficulties accessing gender-affirming services. At the same time, little has been published on trans



men's health, HIV issues, needs and experiences. Young trans people are especially marginalized and vulnerable, with few programmes and services specifically tailored to their needs. Trans-specific data and guidance are needed to adapt the global response to HIV to meet the needs of the trans population. While the needs of this group have only recently received attention, global, regional and other technical guidance documents are being developed to address these gaps. Regional blueprints for comprehensive care for trans people in Latin America, the Caribbean, and Asia and the Pacific are now available. These tools - supported by the Pan American Health Organization, World Health Organization, US President's Emergency Plan for AIDS Relief and the United Nations Development Programme, in collaboration with regional trans groups - provide a contextual map, indicating opportunities for interventions in health, HIV, violence, stigma and discrimination, social protection and human rights. Global guidance includes the World Health Organization's Policy Brief: Transgender People and HIV, and the interagency publication, Implementing Comprehensive HIV and STI Programmes with Transgender People. Community empowerment and capacity building are the focus of the new tools for global and regional transgender guidance. The goal is to strengthen and ensure community-led responses to the HIV challenge in trans populations. This article describes the new tools and guidance and considers the steps needed to use them to appropriately support and engage transgender populations within national AIDS, STI, and sexual and reproductive health responses and programmes. The time to use these tools and guidance for advocacy, strategic planning, capacity building, programme design and training is now.

26. Wylie, K., et al. **"Serving transgender people: clinical care considerations and service delivery models in transgender health."** *Lancet* 2016 388(10042): 401-11.

The World Professional Association for Transgender Health (WPATH) standards of care for transsexual, transgender, and gender non-conforming people (version 7) represent international normative standards for clinical care for these populations. Standards for optimal individual clinical care are consistent around the world, although the implementation of services for transgender populations will depend on health system infrastructure and sociocultural contexts. Some clinical services for transgender people, including gender-affirming surgery, are best delivered in the context of more specialised facilities; however, the majority of health-care needs can be delivered by a primary care practitioner. Across high-income and low-income settings alike, there often remains a dearth of educational programming for health-care professionals in transgender health, although the best evidence supports introducing modules on transgender health early during clinical education of clinicians and allied health professionals. While these challenges remain, we review the increasing evidence and examples of the defined roles of the mental health professional in transgender health-care decisions, effective models of health service provision, and available surgical interventions for transgender people.

27. Mayer, K. H., et al. **"Transgender People and HIV Prevention: What We Know and What We Need to Know, a Call to Action."** *J Acquir Immune Defic Syndr* 2016 72 Suppl 3: S207-9.

Transgender people have been disproportionately affected by HIV, particularly transgender women. Their increased vulnerability to HIV is due to multiple issues, including biological (eg, increased efficiency of HIV transmission through receptive anal sex), epidemiological (eg, increased likelihood of having HIV-infected partners), structural (eg, social stigma limiting employment options), and individual factors (eg, internalized stigma leading to depression and substance use and risk-taking behaviors). There have been limited culturally appropriate HIV prevention interventions for transgender people, with many key prevention studies (eg, the iPrEx PrEP study) enrolling transgender women in a study focusing on men who have sex with men. This has resulted in limited understanding of the optimal ways to decrease transgender people's risk for HIV acquisition. The current supplement of JAIDS is designed to review what is known about HIV prevention for transgender people and to highlight new insights and best practices. The study reviews recent epidemiologic data, the pharmacology of HIV prophylactic agents in individuals who may be using exogenous hormones, and several recent multi-component interventions designed to address the lived experience of transgender people. Additionally, the study reviews the work going on at the NIH to address transgender health in general and HIV prevention in specific, as well as two important papers related to clinical trial design issues and the ethical conduct of research in this frequently disenfranchised population. It

is the hope of the HIV Prevention Trials Network (HPTN) that this supplement will promote new knowledge around transgender health and the requisite issues that need to be addressed in order to conduct optimal clinical trials. The ultimate hope is that the information distilled in this supplement will inform investigators, clinicians, and public health officials in order to design further research to develop optimal prevention interventions for transgender people and to implement these interventions in ways that are culturally congruent and health promoting.

28. Divan, V., et al. "**Transgender social inclusion and equality: a pivotal path to development.**" *J Int AIDS Soc* 2016 19(3 Suppl 2): 20803. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949312/pdf/JIAS-19-20803.pdf>

**INTRODUCTION:** The rights of trans people are protected by a range of international and regional mechanisms. Yet, punitive national laws, policies and practices targeting transgender people, including complex procedures for changing identification documents, strip transgender people of their rights and limit access to justice. This results in gross violations of human rights on the part of state perpetrators and society at large. Transgender people's experience globally is that of extreme social exclusion that translates into increased vulnerability to HIV, other diseases, including mental health conditions, limited access to education and employment, and loss of opportunities for economic and social advancement. In addition, hatred and aggression towards a group of individuals who do not conform to social norms around gender manifest in frequent episodes of extreme violence towards transgender people. This violence often goes unpunished.

**DISCUSSION:** The United Nations Development Programme (UNDP) views its work in the area of HIV through the lens of human rights and advances a range of development solutions such as poverty reduction, improved governance, active citizenship, and access to justice. This work directly relates to advancing the rights of transgender people. This manuscript lays out the various aspects of health, human rights, and development that frame transgender people's issues and outlines best practice solutions from transgender communities and governments around the globe on how to address these complex concerns. The examples provided in the manuscript can help guide UN agencies, governments, and transgender activists in achieving better standards of health, access to justice, and social inclusion for transgender communities everywhere.

**CONCLUSIONS:** The manuscript provides a call to action for countries to urgently address the violations of human rights of transgender people in order to honour international obligations, stem HIV epidemics, promote gender equality, strengthen social and economic development, and put a stop to untrammelled violence.

29. Grant, R. M., et al. "**Transgender Women in Clinical Trials of Pre-Exposure Prophylaxis.**" *J Acquir Immune Defic Syndr* 2016 72 Suppl 3: S226-9.

Lessons were learned with trans women who participated (as volunteers and investigators) in trials of HIV pre-exposure prophylaxis (PrEP). Trans women are not men. Compared with men who have sex with men, trans women trial participants were more likely to be involved with transactional sex, had more sexual partners, and were less likely to have PrEP medications detected in blood. Trans women define themselves differently in different cultures. One best practice is to ask at least 2 gender questions: sex assigned at birth and current gender. More information is needed to fully situate PrEP efficacy for trans women, including analysis of drug-drug interactions between PrEP medications and feminizing hormones and PrEP drug penetration into neovaginal tissues. Including trans women in studies is helpful only if their participation is specifically reported, as could occur in a table of baseline characteristics of the enrolled cohort. Gender-affirming care is important to foster appropriate uptake and use of PrEP. Such care includes use of preferred pronouns and names, safety to use the bathroom of choice, and access to gender-affirming hormone therapy and surgery. The consistent finding that PrEP works when taken across diverse populations having diverse practices related to gender, sexual intercourse, and hormone use provides a basis for offering PrEP to people at substantial risk of acquiring HIV although some subgroups may not have been fully represented in trials. Nonetheless, specific PrEP implementation science for trans women (and men) is essential to develop best practices for PrEP delivery and use.

30. Radix, A., et al. **"Transgender women, hormonal therapy and HIV treatment: a comprehensive review of the literature and recommendations for best practices."** *J Int AIDS Soc* 2016 19(3 Suppl 2): 20810. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949308/pdf/JIAS-19-20810.pdf>

**INTRODUCTION:** Studies have shown that transgender women (TGW) are disproportionately affected by HIV, with an estimated HIV prevalence of 19.1% among TGW worldwide. After receiving a diagnosis, HIV-positive TGW have challenges accessing effective HIV treatment, as demonstrated by lower rates of virologic suppression and higher HIV-related mortality. These adverse HIV outcomes have been attributed to the multiple sociocultural and structural barriers that negatively affect their engagement within the HIV care continuum. Guidelines for feminizing hormonal therapy among TGW recommend combinations of oestrogens and androgen blockers. Pharmacokinetic studies have shown that certain antiretroviral therapy (ART) agents, such as protease inhibitors (PIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs) and cobicistat, interact with ethinyl estradiol, the key oestrogen component of oral contraceptives (OCPs). The goal of this article is to provide an overview of hormonal regimens used by TGW, to summarize the known drug-drug interactions (DDIs) between feminizing hormonal regimens and ART, and to provide clinical care recommendations.

**METHODS:** The authors identified English language articles examining DDIs between oestrogen therapy, androgen blockers and ART published between 1995 and 2015 using PubMed, Cumulative Index to Nursing and Allied Health Literature and EBSCOhost.

**RESULTS AND DISCUSSION:** Published articles predominantly addressed interactions between ethinyl estradiol and NNRTIs and PIs. No studies examined interactions between ART and the types and doses of oestrogens found in feminizing regimens. DDIs that may have the potential to result in loss of virologic suppression included ethinyl estradiol and amprenavir, unboosted fosamprenavir and stavudine. No clinically significant DDIs were noted with other anti-retroviral agents or androgen blockers.

**CONCLUSIONS:** There are insufficient data to address DDIs between ART and feminizing hormone regimens used by TGW. There is an urgent need for further research in this area, specifically pharmacokinetic studies to study the direction and degree of interactions between oral, injectable and transdermal estradiol and ART. Clinicians need to be vigilant about possible interactions and monitor hormone levels if concerns arise. More research is also needed on the provision of hormone therapy and gender-affirming care on the long-term health outcomes of HIV-positive TGW.

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## Young Key Populations - 2

1. Le, V., et al. **"Types of social support and parental acceptance among transfemale youth and their impact on mental health, sexual debut, history of sex work and condomless anal intercourse."** *J Int AIDS Soc* 2016 19(3 Suppl 2): 20781. Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949317/pdf/JIAS-19-20781.pdf>

**INTRODUCTION:** Transfemale youth (TFY) are an underserved and understudied population at risk for numerous poor physical and mental health outcomes, most notably HIV. Research suggests that parental acceptance and social support may serve as protective factors against HIV and other risks for TFY; however, it is unclear whether TFY receive primary social support from parents with or without parental acceptance of their gender identity. This study examines differences in parental acceptance, mental health and the HIV risk factors of history of sex work, age at sexual debut and engagement in condomless anal intercourse between

TFY with two types of primary social support - non-parental primary social support (NPPSS) and parental primary social support (PPSS).

**METHODS:** Cross-sectional data collected from 301 TFY from 2012 to 2014 in the San Francisco Bay Area were analyzed to determine differences in parental acceptance, mental health and HIV risk factors between youth with and without PPSS. Univariate statistics and chi-squared tests were conducted to determine if parental acceptance and health outcomes were correlated with type of social support.

**RESULTS:** Two-hundred fifty-one participants (83.7%) reported having NPPSS, and 49 (16.3%) reported PPSS. Significantly more youth with PPSS reported affirmative responses on parental acceptance items than their NPPSS counterparts. For example, 87.8% of youth with PPSS reported that their parents believed they could have a happy future as a trans adult, compared with 51.6% of youth with NPPSS ( $p < 0.001$ ). Fewer participants with PPSS reported symptoms of psychological distress (2.0% vs. 12.5%,  $p = 0.057$ ), though this finding was not statistically significant; no significant associations were found between primary social support type and HIV risk factors.

**CONCLUSIONS:** These results suggest that TFY with parental acceptance of their gender identity may be more likely to reach out to their parents as their primary source of social support. Interventions focused on parental acceptance of their child's gender identity may have the most promise for creating parental social support systems in the lives of TFY.

2. Hall, C. D., et al. "**Unheard Voices: The Need for HIV Research and Prevention Priorities for YMSM in the Global Context.**" *AIDS Educ Prev* 2016 28(3): 272-6.

This commentary considers the AIDS Education and Prevention special issue (volume 28, number 3) entitled "Behavioral HIV Prevention Interventions for Diverse Young Men Who Have Sex with Men (MSM)." The research presented in this special issue highlights the importance of addressing sub-populations of young MSM in order to better understand the unique realities and risk-factors affecting HIV epidemics and intervention needs. Here, we focus on several broad topics raised in this special issue and comment on their implications for HIV research and practice targeting young MSM in low- and middle-income countries. We consider issues relevant to reaching hidden populations, tailoring interventions, and integrating new communications and bio-medical technologies in research and practice in low-resource settings.

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