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Sociodemographic factors and social determinants associated with toxicology confirmed polysubstance opioid-related deaths.

Barocas JA, Wang J, **Marshall BDL**, LaRochelle MR, Bettano A, Bernson D, Beckwith CG, Linas BP, **Walley AY**. *Drug Alcohol Depend.* 2019;200: 59-63.

BACKGROUND AND AIMS:
While prescribed and illicit opioid use are primary drivers of the national surges in overdose deaths, opioid overdose deaths in which stimulants are also present are increasing in the U.S. We determined the social determinants and sociodemographic factors associated with opioid-only versus polysubstance opioid overdose deaths in Massachusetts. Particular attention was focused on the role of stimulants in opioid overdose deaths.

METHODS:
We analyzed all opioid-related overdose deaths from 2014 to 2015 in an individually-linked population database in Massachusetts. We used linked postmortem toxicology data to identify drugs present at the time of death. We constructed a multinomial logistic regression model to identify factors associated with three mutually exclusive overdose death groups based on toxicological results: opioid-related deaths with (1) opioids only present, (2) opioids and other substances not including stimulants, and (3) opioids and stimulants with or without other substances.

RESULTS:
Between 2014 and 2015, there were 2,244 opioid-related overdose deaths in Massachusetts that had accompanying toxicology results. Toxicology reports indicated that 17% had opioids only, 36% had opioids plus stimulants, and 46% had opioids plus another non-stimulant substance. Persons older than 24 years, non-rural residents, those with comorbid mental illness, non-Hispanic black residents, and persons with recent homelessness were more likely than their counterparts to die with opioids and stimulants than opioids alone.

CONCLUSIONS:
Polysubstance opioid overdose is increasingly common in the US. Addressing modifiable social determinants of health, including barriers to mental health services and homelessness, is important to reduce polysubstance use and overdose deaths.

Zinc deficiency and advanced liver fibrosis among HIV and hepatitis C co-infected anti-retroviral naïve persons with alcohol use in Russia.

Barocas JA, **So-Armah D**, Cheng DM, Lioznov D, Baum M, Gallagher K, Fuster D,**Gnatienko N,** Krupitsky E, Freiberg MS, **Samet JH**. PLoS One. 2019;14(6):e0218852.

BACKGROUND AND AIMS:
Liver disease in people living with HIV co-infected with hepatitis C virus is a source of morbidity and mortality in Russia. HIV accelerates liver fibrosis in the setting of HCV co-infection and alcohol use. Zinc deficiency is common among people living with HIV and may be a factor that facilitates the underlying mechanisms of liver fibrosis. We investigated the association between zinc deficiency and advanced liver fibrosis in a cohort of HIV/HCV co-infected persons reporting heavy drinking in Russia.

METHODS:
This is a secondary data analysis of baseline data from 204 anti-retroviral treatment naïve HIV/HCV co-infected Russians with heavy drinking that were recruited into a clinical trial of zinc supplementation. The primary outcome of interest in this cross-sectional study was advanced liver fibrosis. Zinc deficiency, the main independent variable, was defined as plasma zinc <0.75 mg/L. Exploratory analyses were performed examining continuous zinc levels and fibrosis scores. Analyses were conducted using multivariable regression models adjusted for potential confounders.

RESULTS:
The prevalence of advanced liver fibrosis was similar for those with zinc deficiency compared to those with normal zinc levels, (27.7% vs. 23.0%, respectively). We did not detect an association between zinc deficiency and advanced liver fibrosis in the adjusted regression model (aOR: 1.28, 95% CI: 0.62-2.61, p = 0.51) nor in exploratory analyses.

CONCLUSIONS:
In this cohort of Russians with HIV/HCV co-infection, who are anti-retroviral treatment naïve and have heavy alcohol use, we did not detect an association between zinc deficiency or zinc levels and advanced liver fibrosis.

Strategies used by people who inject drugs to avoid stigma in healthcare settings.

Biancarelli DL, Biello KB, Childs E, Drainoni M, Salhaney P, Edeza A,**Mimiaga MJ**, **Saitz R**, Bazzi AR. *Drug Alcohol Depend.* 2019;198:80-86.

BACKGROUND:
People who inject drugs (PWID) have limited engagement in healthcare services and report frequent experiences of stigma and mistreatment when accessing services. This paper explores the impact of stigma against injection drug use on healthcare utilization among PWID in the U.S. Northeast.

METHODS:
We recruited PWID through community-based organizations (CBOs; e.g., syringe service programs). Participants completed brief surveys and semi-structured interviews lasting approximately 45 min exploring HIV risk behaviors and prevention needs. Thematic analysis examined the emergent topic of stigma experiences in relation to healthcare utilization.

RESULTS:
Among 33 PWID (55% male; age range 24-62 years; 67% White; 24% Latino), most used heroin (94%) and injected at least daily (60%). Experiences of dehumanization in healthcare settings were common, with many participants perceiving that they had been treated unfairly or discriminated against due to their injection drug use. As participants anticipated this type of stigma from healthcare providers, they developed strategies to avoid it, including delaying presenting for healthcare, not disclosing drug use, downplaying pain, and seeking care elsewhere. In contrast to large institutional healthcare settings, participants described non-stigmatizing environments within CBOs, where they experienced greater acceptance, mutual respect, and stronger connections with staff.

CONCLUSIONS:
Stigma against injection drug use carries important implications for PWID health. Increased provider training on addiction as a medical disorder could improve PWID healthcare experiences, and integrating health services into organizations frequented by PWID could increase utilization of health services by this population.

Evolution of illicit opioid use among people with HIV infection in St Petersburg, Russia, in the period of 2004-2015.

Blokhina E, Krupitsky EM, Cheng DM,**Walley AY,** Toussova O, Yaroslavtseva T, **Gnatienko N**, Bridden

C, Forman LS, Bendiks S, **Samet JH**. HIV Med. 2019;20(7):450-455.

OBJECTIVES:
In the late 1990s, when the current Russian opioid epidemic began, illicit opioids used in Russia consisted almost exclusively of heroin. The type of opioids used has evolved in the early 21st Century. The objective of this study was to describe the evolution of illicit opioid use among people living with HIV (PLWH) reporting recent opioid use in St Petersburg, Russia.

METHODS:
We examined baseline data from four research studies conducted in the period 2004-2015 that included PLWH who used opioids [Partnership to Reduce the Epidemic Via Engagement in Narcology Treatment (PREVENT; 2004-2005; n = 17), HIV Evolution in Russia-Mitigating Infection Transmission and Alcoholism in a Growing Epidemic (HERMITAGE; 2007-2010; n = 281), Linking Infectious and Narcology Care (LINC; 2013-2014; n = 119) and Russia Alcohol Research Collaboration on HIV/AIDS (Russia ARCH; 2012-2015; n = 121)] and reported recent use of heroin and other opioids.

RESULTS:
Although these studies spanned more than a decade, the participants represented similar birth cohorts; the mean age was 24.5 years in 2004 and 33.3 years in 2014. The use of opioid types, however, evolved across cohorts, with the use of any illicit drug other than heroin increasing from 6% [95% confidence interval (CI) 000.2, 29%] in PREVENT (2004-2005) to 30% (95% CI 25, 36%) in HERMITAGE (2007-2010) to 70% (95% CI 61, 78%) in LINC (2013-2014) to 77% (95% CI 68, 84%) in ARCH (2012-2015). Any heroin use consistently decreased over the 10-year period in the cohorts, from 100% (95% CI 80, 100%) in 2004-2005 to 54% (95% CI 44, 63%) in 2012-2015.

CONCLUSIONS:
Among PLWH who use opioids in St Petersburg, Russia, illicit use of opioids other than heroin appears to be more common than heroin use.

HIV physicians and chronic opioid Therapy: It's time to raise the bar.

Carroll JJ, Colasanti J, Lira MC, Del Rio C,**Samet JH**. AIDS Behav. 2019;23(4):1057-1061.

Clinical practice that utilizes chronic opioid therapy has been recognized as one major cause of the opioid crisis. Among patients living with HIV, the risks associated with chronic opioid therapy may be complicated by factors such as co-occurring mental health diagnoses, substance use, and economic marginalization. Improving opioid prescribing practices in HIV clinics requires attention to these and other characteristics common to HIV care. In the context of a randomized controlled trial testing an intervention to improve opioid prescribing practices in HIV outpatient clinics, we interviewed physicians about their perspectives on chronic opioid therapy. Overwhelmingly, physicians voiced ambivalence about their own knowledge and comfort with prescription opioids. They raised concerns about the impact of opioid prescribing on patient-provider relationships and the increasing workload associated with prescribing and monitoring patients. In this report, we explore these concerns and propose several strategies for improving clinical care in which chronic opioid therapy is addressed.

Association of syndemic unhealthy alcohol use, cigarette use, and depression with all-cause mortality among adults living with and without HIV infection: Veterans aging cohort study.

Chichetto NE, Kundu S, Freiberg MS, Butt AA, Crystal S,**So-Armah KA**, Cook RL, Braithwaite RS, Fiellin DA, Khan MR, Bryant KJ, Gaither JR, Barve SS, Crothers K, Bedimo RJ, Warner AI, Tindle HA, Veterans Aging Cohort Study. Open Forum Infect Dis. 2019;6(6):ofz188.

BACKGROUND:
The prevalence and risk of concurrent unhealthy drinking, cigarette use, and depression on mortality among persons living with HIV (PLWH) is unclear. This study applied a syndemic framework to assess whether these co-occurring conditions increase mortality and whether such risk is differential by HIV status.

METHODS:
We evaluated 6721 participants (49.8% PLWH) without baseline cancer from the Veterans Aging Cohort Study, a prospective, observational cohort of PLWH and matched uninfected veterans enrolled in 2002 and followed through 2015. Multivariable Cox proportional hazards regressions estimated risk of a syndemic score (number of conditions: that is, unhealthy drinking, cigarette use, and depressive symptoms) on all-cause mortality by HIV status, adjusting for demographic, health status, and HIV-related factors.

RESULTS:
Fewer than 10% of participants had no conditions; 25.6% had 1, 51.0% had 2, and 15.0% had all 3. There

were 1747 deaths (61.9% PLWH) during the median follow-up (11.4 years). Overall, age-adjusted mortality rates/1000 person-years increased with a greater number of conditions: (0: 12.0; 1: 21.2; 2: 30.4; 3: 36.3). For 3 conditions, the adjusted hazard ratio of mortality was 36% higher among PLWH compared with uninfected participants with 3 conditions (95% confidence interval, 1.07-1.72; *P* = .013), after adjusting for health status and HIV disease progression. Among PLWH and uninfected participants, mortality risk persisted after adjustment for time-updated health status.

CONCLUSIONS:
Syndemic unhealthy drinking, cigarette use, and depression are common and are associated with higher mortality risk among PLWH, underscoring the need to screen for and treat these conditions.

The effects of increased physical activity on symptom burden in older persons living with HIV.

Cioe PA, Gordon REF, Williams DM, **Kahler CW**. AIDS Care. 2019;31(12):1548-1554.

Advancements in antiretroviral therapy have extended the longevity of people living with HIV (PLWH). However, they often experience symptoms that negatively impact their quality of life, including fatigue, weight change, depression, pain, and memory loss. Although there is a dearth of data on the effect of physical activity (PA) for HIV-associated symptom management, increased PA has generally been associated with improvements in strength and overall quality of life. In this study, we enrolled 40 participants (mean age = 51.5; 40% female; 17.4 mean years living with HIV) and used Omron pedometers to measure daily step counts over 12 weeks. The 20-item HIV Symptom Index was administered at baseline and week 12. Increased PA was not associated with improvement in overall HIV symptom burden. However, bothersome symptoms were reduced, and total symptom burden was highly correlated with PA level at week 12 (r = -.48, p = .01), such that participants with higher step counts reported lower symptom burden. Significant gender differences in symptom burden were noted: males on average reported lower symptom burden. Further research is needed to examine associations between PA and HIV symptom burden and to further explore gender differences in HIV symptom burden to improve overall quality of life for all older PLWH.

HIV pre-exposure prophylaxis for people who inject drugs: The context of co-occurring injection- and sexual-related HIV risk in the U.S. northeast.

Edeza A, Bazzi A, Salhaney P, Biancarelli D, Childs E, **Mimiaga MJ**, Drainoni ML, Biello K. Subst Use Misuse. 2019:1-9.

BACKGROUND:
People who inject drugs (PWID) are at increased risk for HIV infection through sharing contaminated needles and injection equipment, and engaging in condomless sex.

OBJECTIVES*:*
To qualitatively examine the overlapping nature of these behaviors among PWID in the US Northeast.

METHODS:
We recruited HIV-uninfected PWID and key informants through community-based organizations. Qualitative interviews explored sexual partnerships as they related to sharing contaminated needles and injection equipment, engaging in condomless sex, and associated indications for PrEP among PWID.

RESULTS:
Among 33 PWID, 66% engaged in condomless vaginal or anal sex in the past 3 months, and 27% had three or more sexual partners in this same time period. Over half engaged in any past month distributive or receptive syringe sharing (64%). We identified three contexts through which overlapping sexual and injection-related HIV risks emerged, including (1) multiple concurrent sexual partnerships; (2) using and injecting drugs with sexual partners (including increase injecting of crystal methamphetamine); and (3) exchanging sex for money or drugs (including among male PWID). Condom use was inconsistent across these contexts. Limited interactions with healthcare providers often resulted in sexual risks being overlooked in light of competing health concerns.

CONCLUSIONS:
Sexual risk for HIV acquisition is complex and multi-faceted among PWID yet may be overlooked by prevention and healthcare providers. Comprehensive HIV prevention efforts must acknowledge the distinct contexts in which overlapping injection and sexual risk behaviors occur. Increased sexual health screening and risk reduction services including PrEP for PWID may help curtail transmission in this population.

Implementation of syringe services programs to prevent rapid Human Immunodeficiency Virus transmission in rural counties in the United States: A modeling study.

Goedel WC, King MRF, Lurie MN, Galea S, Townsend JP, Galvani AP, Friedman SR,**Marshall BDL**. Clin Infect Dis. 2019. pii: ciz321.

BACKGROUND:
Syringe services programs (SSPs) are effective venues for delivering harm-reduction services to people who inject drugs (PWID). However, SSPs often face significant barriers to implementation, particularly in the absence of known human immunodeficiency virus (HIV) outbreaks.

METHODS:
Using an agent-based model, we simulated HIV transmission in Scott County, Indiana, a rural county with a 1.7% prevalence of injection drug use. We compared outcomes arising in the absence of an SSP, in the presence of a pre-existing SSP, and with implementation of an SSP after the detection of an HIV outbreak among PWID over 5 years following the introduction of a single infection into the network.

RESULTS:
In the absence of an SSP, the model predicted an average of 176 infections among PWID over 5 years or an incidence rate of 12.1/100 person-years. Proactive implementation averted 154 infections and decreased incidence by 90.3%. With reactive implementation beginning operations 10 months after the first infection, an SSP would prevent 107 infections and decrease incidence by 60.8%. Reductions in incidence were also observed among people who did not inject drugs.

CONCLUSIONS:
Based on model predictions, proactive implementation of an SSP in Scott County had the potential to avert more HIV infections than reactive implementation after the detection of an outbreak. The predicted impact of reactive SSP implementation was highly dependent on timely implementation after detecting the earliest infections. Consequently, there is a need for expanded proactive SSP implementation in the context of enhanced monitoring of outbreak vulnerability in Scott County and similar rural contexts.

The role of therapist MI skill and client change talk class membership predicting dual alcohol and sex risk outcomes.

Janssen T, Magil M, Mastroleo NR, Laws MB, Howe CJ, Walthers JW,**Monti PM**, **Kahler CW**. *J Clin Psychol*. 2019. [Epub ahead of print]

OBJECTIVE:
We investigated the technical model of motivational interviewing (MI) in a dual-outcome intervention (i.e., alcohol, sexual risk; N = 164; 57% female).

METHOD:
We identified latent classes of client change statements, based on the proportion of change talk (CT) over the session. We then examined whether outcomes were related to CT class, and whether the relations between MI skill and outcomes varied by CT class.

RESULTS:
We found three classes of alcohol-CT and two classes of sexual risk-CT. While CT class membership did not predict outcomes directly, greater therapist MI-consistent skill was associated with fewer heavy drinking days in the increasing alcohol-CT class. For sexual risk outcomes, therapist MI-consistent skill was associated with reduced odds of condomless sex for the low sexual risk-CT class.

CONCLUSIONS:
The relation of therapist MI consistency to outcomes appears to be a function of client CT during the session.

Marijuana use and its associations with pain, opioid dose, and HIV viral suppression among persons living with HIV on chronic opioid therapy.

Merlin JS, **Samet JH**, Cheng DM, Lira MC, Tsui JI, Forman LS, Colasanti J,**Walley Ay,** Del Rio C, Liebschutz JM. J Acquir Immune Defic Syndr. 2019;82(2):195-201.

BACKGROUND:
Medical marijuana is legal in 29 US states and the District of Columbia: both HIV and chronic pain are

"approved conditions" for receipt. Chronic pain is common among people living with HIV (PLWH). We anticipate PLWH will question their providers about medical marijuana for chronic pain. We examined marijuana use and its associations with pain, opioid dose, and HIV viral suppression among PLWH receiving chronic opioid therapy.

METHODS:
PLWH prescribed chronic opioid therapy were recruited into the Targeting Effective Analgesia in Clinics for HIV cohort. The main exposure variable was any past 12-month marijuana use. The primary outcomes were (1) opioid misuse (≥9 on the Current Opioid Misuse Measure) and (2) opioid dose (morphine equivalent daily dose). HIV viral load (VL) suppression (<200 copies/μL) and pain severity and interference using the Brief Pain Inventory were exploratory outcomes.

RESULTS:
Participants (n = 166) were men (65%), Black (72%), and had an undetectable VL (89%). We found no significant association between current marijuana use and opioid misuse, opioid dose, or pain. Current marijuana use was associated with 3.03 times the odds of having a detectable VL (95% odds ratio: 1.11-8.31, P = 0.03) while controlling for depressive symptoms and other substance use.

DISCUSSION:
We did not detect an association between marijuana use and opioid misuse behaviors, opioid dose, or pain. In an exploratory analysis, current marijuana use was associated with 3× greater odds of having a detectable VL. This study provides insights into potential consequences of marijuana use among PLWH with chronic pain.

HIV infection, HCV coinfection, and alcohol use: Associations with microbial translocation and immune activation.

Monnig MA, Cohen R, Ramratnam, McAdams M, Tashima K,**Monti PM**. *Alcohol Clin Exp Res.* 2019;43(6):1126-1134.

BACKGROUND:
Human immunodeficiency virus (HIV) infection and heavy drinking independently promote microbial translocation and inflammation. However, it is not known how alcohol use may affect these processes in people living with HIV (PLWH). This study tested the hypothesis that alcohol exacerbates innate immune dysfunction in PLWH.

METHODS:
Participants were 75 PLWH and 34 uninfected controls. Groups were recruited to have similar proportions of nondrinkers, moderate drinkers, and heavy drinkers. Substance use data and plasma samples were collected at up to 3 visits over a 5-year study period. Recent alcohol use was assessed with the Timeline Followback Interview. Biomarkers of microbial translocation (lipopolysaccharide, LPS) and immune activation (lipopolysaccharide binding protein, LBP; soluble CD14, sCD14; soluble CD163, sCD163) were quantified using enzyme-linked immunosorbent assays. Analyses tested 2 hypotheses: (i) that biomarker levels would be significantly higher in PLWH than controls with comparable alcohol use and (ii) that current alcohol use would exacerbate biomarker elevations in PLWH. The second analysis included the interaction of alcohol use with hepatitis C virus (HCV) coinfection.

RESULTS:
Groups were matched on alcohol use, smoking, and other drug use. All biomarkers were significantly higher in PLWH relative to controls (LBP: $p = 0.005$; LPS: $p = 0.014$; sCD14: $p < 0.001$; sCD163: $p < 0.001$). In PLWH, alcohol use showed a significant, positive association with sCD163, but not with other biomarkers. However, the interaction of alcohol use with HCV coinfection was significant for all biomarkers (LBP: $p = 0.002$; LPS: $p = 0.026$; sCD14: $p = 0.0004$; sCD163: $p = 0.001$). In pairwise tests with sequential Bonferroni correction, HIV/HCV coinfected individuals who drank heavily had significantly higher sCD163 compared to coinfected nondrinkers and to HIV monoinfected nondrinkers, moderate drinkers, and heavy drinkers (ps < 0.005). Coinfected moderate drinkers had significantly higher sCD163 than each monoinfected group (ps < 0.003). In addition, sCD14 was significantly higher in coinfected moderate drinkers than coinfected nondrinkers ($p = 0.027$).

CONCLUSIONS:
As predicted, PLWH had higher levels of LBP, LPS, sCD14, and sCD163 than uninfected individuals with similar alcohol use. In PLWH, alcohol by itself was significantly associated only with higher sCD163. However, heavy or moderate alcohol use was associated with elevations in macrophage activation (sCD163) and monocyte activation (sCD14) in HIV/HCV coinfected individuals.

Prevalence and correlates of unhealthy alcohol and drug use among men who have sex with men prescribed HIV pre-exposure prophylaxis in real-world clinical settings.

Ogbuagu O, **Marshall BDL**, Tiberio P, Ogunbajo A, Barakat L, Montgomery M, Almonte A, **Wray T**, Williams EC, Edelman EJ, Chan PA. *AIDS Behav*. 2019;23(1):190-200.

Pre-exposure prophylaxis (PrEP) is effective in preventing HIV acquisition among men who have sex with men (MSM). However, little is known about unhealthy substance use among MSM initiating PrEP in real-world settings. Unhealthy substance use is a risk factor for HIV acquisition and non-adherence to treatment, and may also impact PrEP use. MSM who were prescribed PrEP from 2015 to 2017 at clinics in Providence, Rhode Island and New Haven, Connecticut were recruited to participate in a prospective observational study. Structured clinical assessments were used to assess demographics, HIV risk behaviors, and unhealthy alcohol (alcohol use disorders identification test [AUDIT]-C scores ≥ 4) and drug use (use of any drugs in the past 3 months). Bivariate and multivariate analyses were performed to determine demographics and behaviors associated with unhealthy alcohol and drug use. Among 172 MSM initiating PrEP, 64% were white and 40% were 25-34 years old. Participants reported a median of 3 (IQR 2-7) sexual partners in the last 3 months; 20% reported an HIV positive partner. Unhealthy alcohol and any drug use were reported by 54 and 57%, respectively, and 76% reported at least one of the two. The majority of drug use reported was marijuana and poppers (41 and 26% of participants, respectively). Relative to those without unhealthy alcohol use, unhealthy alcohol use was independently associated with any drug use (adjusted odds ratio [AOR] = 2.57, 95% CI 1.32-5.01). Frequent drug use was associated with younger age (< 25 years, AOR 4.27, 95% CI 1.51-12.09). Unhealthy alcohol use is common among MSM taking PrEP. Drug use other than marijuana and poppers was uncommon among our cohort. Further efforts may be needed to understand the influence of unhealthy alcohol and other substance use on PrEP outcomes and to engage MSM who use drugs for PrEP.

The HIV-related risk factors of the cisgender male sexual partners of transgender women (MSTW) in the United States: A systematic review of the literature

Restar AJ, Surace A, Ogunbajo A, Edexa A, **Kahler C**. AIDS Educ Prev. 2019;31(5):463-478.

Cisgender male sexual partners of transgender women (MSTW) may be at risk for HIV infection. We performed a review of HIV risk factors among MSTW. We searched PubMed database for empirical quantitative U.S.-based studies that included MSTW and were published in English up to November 2018. Of the 4,680 total papers identified, 6 unique studies were included. MSTW displayed heterogeneity in HIV risk factors (e.g., condom use, sexual partners, sexual positions, substance use). In our exploratory meta-analyses, estimated prevalence of self-reported HIV positive status among MSTW was 30.6%, HIV unknown status was 8.8%, and self-reported condomless anal sex with transgender women was 46.1%. Reports of sexual health communication with transgender women was low. More research on MSTW populations is needed to better understand this population's unique needs in the context of recent advancements in HIV prevention.

A strengths-based case management intervention to link HIV-positive people who inject drugs in Russia to HIV care.

Samet JH, Blokhina E, Cheng DM, **Walley AY**, Lioznov D, **Gnatienko N**, Quinn EK, Bridden C, Chaisson CE, Toussova O, **Gifford AL**, Raj A, Krupitsky E. AIDS. 2019;33(9):1467-1476.

OBJECTIVE:
To determine whether the Linking Infectious and Narcology Care strengths-based case management intervention was more effective than usual care for linking people who inject drugs (PWID) to HIV care and improving HIV outcomes.

DESIGN:
Two-armed randomized controlled trial.

SETTING:
Participants recruited from a narcology hospital in St. Petersburg, Russia.

PARTICIPANTS:
A total of 349 HIV-positive PWID not on antiretroviral therapy (ART).

INTERVENTION:
Strengths-based case management over 6 months.

MAIN OUTCOME MEASURES:
Primary outcomes were linkage to HIV care and improved CD4 cell count. We performed adjusted logistic and linear regression analyses controlling for past HIV care using the intention-to-treat approach.

RESULTS:

Participants (N = 349) had the following baseline characteristics: 73% male, 12% any past ART use, and median values of 34.0 years of age and CD4 cell count 311 cells/μl. Within 6 months of enrollment 51% of the intervention group and 31% of controls linked to HIV care (adjusted odds ratio 2.34; 95% confidence interval: 1.49-3.67; P < 0.001). Mean CD4 cell count at 12 months was 343 and 354 cells/μl in the intervention and control groups, respectively (adjusted ratio of means 1.14; 95% confidence interval: 0.91, 1.42, P = 0.25).

CONCLUSION:
The Linking Infectious and Narcology Care strengths-based case management intervention was more effective than usual care in linking Russian PWID to HIV care, but did not improve CD4 cell count, likely due to low overall ART initiation. Although case management can improve linkage to HIV care, specific approaches to initiate and adhere to ART are needed to improve clinical outcomes (e.g., increased CD4 cell count) in this population.

Association between alcohol use and inflammatory biomarkers over time among younger adults with HIV-The Russia ARCH Observational Study.

So-Armah KA, Cheng DM, Freiberg MS, **Gnatienko N**, Patts G, Ma Y, White L, Blokhina E, Lioznov D, Doyle MF, Tracy RP, Chichetto N, Bridden C, Bryant K, Krupitsky E, **Samet JH**.PLoS One. 2019 Aug 22;14(8):e0219710

BACKGROUND:
Biomarkers of monocyte activation (soluble CD14 [sCD14]), inflammation (interleukin-6 [IL-6]), and altered coagulation (D-dimer) are associated with increased mortality risk in people with HIV. The objective of the Russia Alcohol Research Collaboration on HIV/AIDS (ARCH) study was to evaluate the association between heavy alcohol use and inflammatory biomarkers over time.

METHODS:
The study sought antiretroviral therapy naive participants with HIV (n = 350) and assessed them at baseline, 12 and 24 months. Linear mixed effects models were used to determine whether heavy drinking (self-report augmented by phosphatidylethanol [PEth], an alcohol biomarker) was longitudinally associated with IL-6, sCD14 and D-dimer adjusting for potential confounders (e.g., demographics, HIV factors, comorbid conditions).

RESULTS:
Participants' baseline characteristics were as follows: 71% male; mean age of 34 years; 87% self-reported hepatitis C; and 86% current smokers. Mean log10 (HIV RNA) was 4.3 copies/mL.
Heavy alcohol use, based on National Institute of Alcohol Abuse and Alcoholism risky drinking criteria and PEth (versus non-heavy alcohol use) was associated with higher sCD14 (adjusted mean difference 125 ng/mL [95% CI: 42, 209]), IL-6 (ratio of means 1.35 [95% CI: 1.17, 1.55] pg/mL), and D-dimer (ratio of means 1.20 [95% CI: 1.06, 1.37] ug/mL) across the two-year follow-up.

CONCLUSION:
Among HIV+ adults, current heavy alcohol use is associated with higher sCD14, IL-6 and D-dimer over time. Since these biomarkers are associated with mortality, interventions to mitigate effects of heavy drinking on these immune processes merit consideration.

HIV disease severity Is sensitive to temporal changes in alcohol use: A national study of VA patients with HIV.

Williams, EC, McGinnis KA, Tate JP, Matson TE, Rubinsky AD, Bobb JF, Lapham GT, Edelman EJ, Catz SL, Satre DD, Bryant KJ, **Marshall BDL**, Kraemer KL, Bensley KM, Richards JE, Skanderson M, Justice AC, Fiellin DA, Bradley KA. J Acquir Immune Defic Syndr. 2019;81(4):448-455.

BACKGROUND:
Alcohol use influences HIV disease severity through multiple mechanisms. Whether HIV disease severity is sensitive to changes in alcohol use among people with HIV (PWH) is understudied.

SETTING:
National Veterans Health Administration.

METHODS:
Pairs of AUDIT-C screens within 9-15 months (February 1, 2008-September 30, 2014) were identified among PWH from the Veterans Aging Cohort Study (VACS). Initial and follow-up VACS Index 2.0 pairs obtained 0-270 days after initial and follow-up AUDIT-Cs, respectively, determined change in VACS Index 2.0, a composite HIV severity measure. Change in VACS Index 2.0 was regressed on AUDIT-C change scores (-12 to +12) adjusted for demographics, initial VACS Index 2.0, and days between VACS Index measures.

RESULTS:
Among 23,297 PWH (76,202 observations), most had no (51%) or low-level (38%) alcohol use initially. Most (54%) had no subsequent change; 21% increased and 24% decreased drinking. Initial VACS Index 2.0 scores ranged from 0 to 134, change scores ranged from -65 to +73, with average improvement of 0.76 points (SD 9.48). AUDIT-C change was associated with VACS Index 2.0 change ($P < 0.001$). Among those with stable alcohol use (AUDIT-C change ≤ $\left|1\right|$ point), VACS Index 2.0 improvements ranged 0.36-0.60 points. For those with maximum AUDIT-C increase (change from 0 to 12), VACS Index 2.0 worsened 3.74 points (95% CI: -4.71 to -2.78); for those with maximum AUDIT-C decrease (change from 12 to 0), VACS Index 2.0 changed minimally [-0.60 (95% CI: -1.43 to 0.23)].

CONCLUSIONS:
In this national sample, improvement in HIV severity was generally greatest among those with stable alcohol use (primarily those with no use).

A preliminary randomized controlled trail of game plan, a web application to help men who have sex with men reduce their HIV risk and alcohol use.

Wray TB, **Kahler CW**, Simpanen EM, **Operario D.** AIDS Behav. 2019;23(6):1668-1679.

Alcohol use is a key risk factor for HIV infection among men who have sex with men (MSM). Past studies show that brief motivational interventions (BMI) can increase the use of prevention methods (e.g., condoms), reduce alcohol use, and can be adapted for web-based delivery. However, few studies have explored these interventions' effects in MSM. Forty high-risk, heavy drinking MSM who sought rapid HIV testing were randomly assigned to receive either (1) standard post-test counseling (SPC) alone, or (2) SPC plus Game Plan (GP), a tablet tablet-based BMI for alcohol use and HIV risk. Over three months of follow-up, GP participants reported 24% fewer heavy drinking days, 17% fewer alcohol problems, and 50% fewer new anal sex partners than controls. GP participants also reported fewer high-risk condomless anal sex events than controls, but these differences were not significant. These initial results suggest that web-based BMIs may be promising tools to help MSM reduce health risk behaviors.
