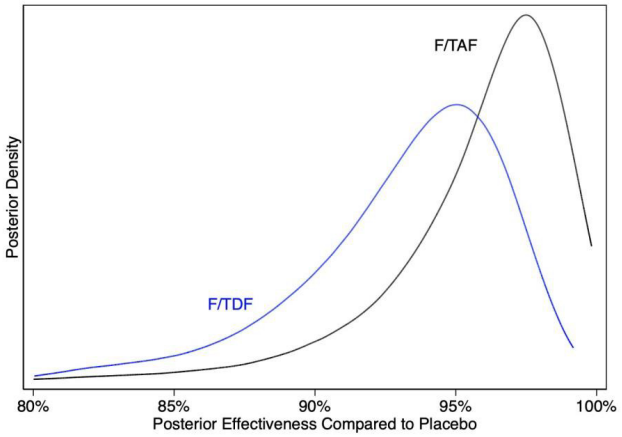
Results. There were 6 vs. 11 post-baseline HIV infections (0.14 v. 0.25 per 100 person-years [PY]) on F/TAF and F/TDF. Of the 11 on F/TDF, 10 had low, 0 had medium, and 1 had high TFV-DP levels; among HIV-negative controls, 5% of the person-time had low, 9% had medium, and 86% had high TFV-DP levels. A non-informative prior distribution for bHIV, combined with the prior for TFV-DP level-efficacy relationship, yielded a posterior bHIV incidence [0.80 Bayesian credible interval (CrI)] of 3.4/100 [1.9, 6.0/100] PY; which suggests a median F/TAF efficacy [0.95 CrI] of 96% [88%,99%] and 93% [87%,96%] for F/TDF compared to bHIV. If we chose a conservative prior distribution for bHIV of 1.0/100 PY, the model yields a median posterior bHIV [0.80 CrI] of 2.8/100 [1.7, 4.7/100] PY; which suggests a median efficacy [0.95 Cr] of 95% [86%, 99%] for F/TAF and 92% [86%, 67%] for F/TDF compared to bHIV with corresponding number of HIV infections averted of 117 and 114, respectively (Figure).

Figure.



Conclusion. The F/TDF adherence-efficacy relationship can be used to back-calculate bHIV incidence in MSM/TW PrEP trials and assess the efficacy of new PrEP agents compared to bHIV.

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1000. HIV and the Treatment-Experienced Patient: The Positive Impact of Case-Based Education on Physicians' Competence and Confidence

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Session: P-47. HIV: Treatment

Background. Despite therapeutic advances, treatment-experienced HIV patients can present a clinical challenge, even to experienced care providers.

Table. Assessment of Educational Effectiveness

Area of Assessment	% relative improvement (% of ID specialists selecting the correct response at pre- vs post-assessment)	*P*-value for change	Cramer's V for the magnitude of the change
Timely modification of ART based on patients' declining renal function and presence of osteopenia	71% improvement (55% vs 94%)	*P*<.0001	V=.446 (Extensive)
Incorporating patient preferences and priorities into clinical decision-making	107% improvement (43% vs 89%)	*P*<.0001	V=.489 (Extensive)
Selection of ARVs with a high barrier of resistance for individuals who have a history of inconsistent engagement in care	8.3% improvement (84% vs 91%)	*P*=NS	V=NS

Methods. This study assessed the ability of digital education to improve HIV/ID specialists' ability to develop tailored strategies for treatment-experienced patients. A CME/ABIM MOC/CE-certified, case-based, educational program was developed. Modeled after the interactive grand rounds approach, a "test then teach" strategy with multiple choice questions was used to elicit cognitive dissonance. Evidence-based feedback was provided following each response. Educational effectiveness was assessed with a repeated-pairs pre-/post-assessment study design; each individual served as his/her own control. A chi-square test assessed changes pre- to post-assessment. *P* values < 0.05 are statistically significant. Effect sizes were evaluated using Cramer's V (< 0.05 modest; 0.06-0.15 noticeable effect; 0.16-0.26 considerable effect; > 0.26 extensive effect). The activity launched on a website dedicated to continuous professional development on 09/12/19. Data for this matched-learner analysis were collected through 11/06/19.

Results. To date, 14,181 HCPs (3128 physicians; 9518 nurses/NPs; 333 PAs; 172 pharmacists) have participated in the activity. Data from the subset of HIV/ID specialists (n=110) who answered all pre-/post-assessment questions during the initial study period were analyzed. Following activity participation, significant improvements were observed in the proportion of HIV/ID specialists who answered all assessment questions correctly (15% pre vs 81% post; $P < .0001$; V=.356). Improvements were also observed in several specific areas of assessment (Table). Additionally, 44% of HIV/ID specialists indicated they planned to modify their treatment approach for treatment experience patients because of participating in the education.Of note, this assessment also identified topics in which HIV/ID had a high degree of baseline knowledge.

Conclusion. Participation in this online, interactive, case-based, program significantly improved HIV/ID specialists' ability to develop individualized care strategies for patients who are treatment experienced.

Disclosures. **All Authors**: No reported disclosures

1001. HIV RNA monitoring after hospitalization for non-HIV-related illness in patients on combination antiretroviral therapy prior to admission

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Session: P-47. HIV: Treatment

Background. Hospitalization presents risk for loss of virologic suppression (VS) in people living with HIV (PLWH) due to issues with combination antiretroviral therapy (cART). cART medication errors or drug-drug interactions with new maintenance medications may lead to loss of VS. Appropriate monitoring of HIV RNA post-discharge to ensure ongoing VS may not occur following non-HIV-related illnesses. The objective of this multi-center study was to describe HIV RNA monitoring and VS in PLWH following hospitalization for non-HIV-related illnesses.

Methods. PLWH at least 18 years old with a CD4 count >200 cells/mm^3 on cART prior to admission, hospitalized for 24 hours or more at either of two large, academic medical centers (where they also attended follow-up clinic visits) for a non-HIV-related illness, and that survived to hospital discharge between January 1st 2010 and December 31st 2015 were eligible for analysis. The primary outcome was the presence of an HIV RNA measurement as recommended by national guidelines within 6 months of hospital discharge. Secondary outcomes included the incidence of transient viremia and loss of VS after discharge.

Results. A total of 329 patients were included. The median age was 51 years (interquartile range [IQR] 44-58), 76.6% were male, and 48.3% were African American. The median CD4 count was 484 cells/mm^3 (IQR 357-629) and 85.4% (n=281) had an undetectable HIV RNA prior to admission. Among the 97.6% (n=321) of patients with an HIV RNA measurement after hospital discharge, the median time to HIV RNA measurement was 2.4 months (IQR=1.2-4.1) and 86.3% (n=284) had an HIV RNA measurement within 6 months. Among patients who were undetectable prior to admission, transient viremia after discharge occurred in 7.1% (n=20) within a median of 2.5 months (IQR 1.3-4.1) and 4 of these patients lost VS. Three of the four patients with loss of VS were admitted for a non-HIV-related infection and all were on protease inhibitor-based regimens.

Conclusion. HIV RNA monitoring appears to occur according to guideline recommendations in the majority of PLWH after hospitalization for a non-HIV-related illness. Despite the occurrence of transient viremia, loss of VS was rare. Future studies should focus on risk factors for loss of VS.

Disclosures. Milena M. Murray, PharmD, MSc, BCIDP, AAHIVP, Merck (Speaker's Bureau)

1002. A Daily Single Tablet Regimen (STR) of Bictegravir/Emtricitabine/Tenofovir Alafenamide (B/F/TAF) in Virologically-Suppressed Adults Living with HIV and End Stage Renal Disease on Chronic Hemodialysis

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Session: P-47. HIV: Treatment

Background. Treatment for people living with HIV (PLWH) and end stage renal disease (ESRD) on hemodialysis (HD) has previously required complex dose-adjusted regimens. We evaluated a daily regimen of elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide (E/C/F/TAF) and established this treatment as effective and safe, showing that daily TAF resulted in lower plasma tenofovir exposure than a historical comparison of once weekly tenofovir disoproxil fumarate in patients with ESRD on

HD. After week (W) 96, participants transitioned to daily B/F/TAF to assess whether efficacy and safety would be maintained on this STR that is guidelines-recommended for PLWH with eGFR > 30 mL/min.

Methods. Virologically suppressed adult PLWH with ESRD on chronic HD who completed W96 on E/C/F/TAF enrolled in the B/F/TAF extension for 48 weeks. Efficacy was assessed as the proportion of participants with virologic suppression (HIV RNA < 50 copies/mL). Safety was assessed throughout the study, PK was assessed using sparse sampling at W4, 24 and 48.

Results. 55 enrolled, 36 completed E/C/F/TAF, 10 entered the B/F/TAF extension. The median age was 55 yrs (range 34-63); median time on HD was 4 yrs (range 2-16). All ten participants on B/F/TAF had HIV-1 RNA < 50 c/mL (95% CI 69%, 100%) at W48. All participants had at least 1 adverse event (AE); most were grade 1 or 2 in severity. One participant had a grade 3 AE and 3 had serious AEs; none were considered related to study drug by the investigator. One participant had AEs attributed to study drug (malaise grade 1 and nausea grade 2), which resolved and did not lead to discontinuation of study drug. There were no clinically relevant changes in fasting lipids. In participants with evaluable data (n=2-5 per timepoint), mean bictegravir trough concentrations were lower compared to PLWH not on HD but remained 4- to 7-fold higher than the established protein-adjusted 95% effective concentration ($paEC_{95}$) of 162 ng/mL against wild-type virus.

Conclusion. A once daily regimen of B/F/TAF maintained virologic suppression in PLWH on chronic HD. B/F/TAF was well-tolerated with no discontinuations. B/F/TAF may be an effective, safe and convenient once daily STR and ameliorate the need for dose adjustment in appropriate PLWH who require chronic HD.

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1003. BIC/FTC/TAF Maintains Viral Suppression in Patients with Documented M184V/I Mutations: A Real World Experience

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Session: P-47. HIV: Treatment

Background. The M184V/I mutation is a common mutation in treatment-experienced patients with HIV and confers high-level resistance to lamivudine and emtricitabine. Our objective is to assess the effectiveness of bictegravir (BIC)/emtricitabine (FTC)/tenofovir alafenamide (TAF) in a real-world setting in achieving and maintaining viral suppression in patients with documented M184V/I mutations.

Methods. This case series is comprised of treatment-experienced HIV-positive patients with documented historical or newly-identified M184V/I mutations who were placed on BIC/FTC/TAF as a switch strategy or as therapy for patients who had failed a prior regimen. Patients with any resistance to tenofovir or bictegravir were excluded. Our primary outcome was sustained viral suppression at 12 months after initiation of BIC/FTC/TAF.

Results. We included 33 patients (94% black, 52% male, median age 49, range 36-63) with an M184V/I mutation. The majority (91%) showed sustained viral suppression at 12 months of treatment. Non-adherence to medication was the common factor in all three cases of treatment failure. One patient developed an R263K mutation while on therapy, which conferred low-level resistance to bictegravir. There were no other instances of newly-acquired resistance to any of the components of BIC/FTC/TAF.

Conclusion. Our results demonstrate high success rates of BIC/FTC/ATF in achieving and maintaining viral suppression in patients with documented M184V/I mutations who adhere to medications in a real-world setting with a single instance of new treatment-emergent resistance to bictegravir. These findings are congruent with reported sub-group analysis in clinical trial data and support the use of BIC/FTC/TAF in patients with M184V/I mutations.

Disclosures. **Leandro A. Mena, MD, MPH**, **Binx Health** (Grant/Research Support)**Evofem** (Grant/Research Support)**Gilead Science** (Consultant, Grant/Research Support, Speaker's Bureau)**GSK** (Grant/Research Support)**Janssen** (Grant/Research Support)**Merck** (Consultant, Grant/Research Support)**Roche Molecular** (Consultant, Grant/Research Support)**SpeedDx** (Grant/Research Support)**ViiV Healthcare** (Consultant, Grant/Research Support, Speaker's Bureau)

1004. Clinical Decision Support System Alerts for HIV Retention in Care – A Pilot Implementation Research Study

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Session: P-47. HIV: Treatment

Background. Clinical decision support system (CDSS) alerts may help retain people living with HIV (PLWH) in care. A system of CDSS alerts utilizing the CHORUS™ portal was developed to identify PLWH at risk of being lost to care. To evaluate feasibility for a larger scale study, a before and after implementation research pilot study was implemented in the OPERA Cohort at three clinic sites in a southeastern US city.

Methods. Periods without intervention (*before*) or with CDSS alerts (*after*) were followed by 3 months of follow up. The study population consisted of PLWH with ≥ 1 electronic health record entry in the 2 years prior to, or during, the *before* or *after* period (Fig 1). To support clinicians through a discrete implementation strategy, alerts warning of suboptimal patient attendance were generated daily for the eligible PLWH at each site; providers or other clinic staff could respond to the alerts (Fig 2). Alerts, responses, and visits (i.e., meeting with provider or HIV lab measurement) were characterized. The proportion of PLWH with ≥ 1 visit in the *before* and *after* periods were compared at each site by Pearson's Chi-square.

Figure 1. Pilot study timeline

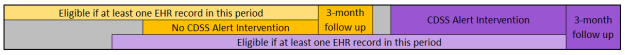
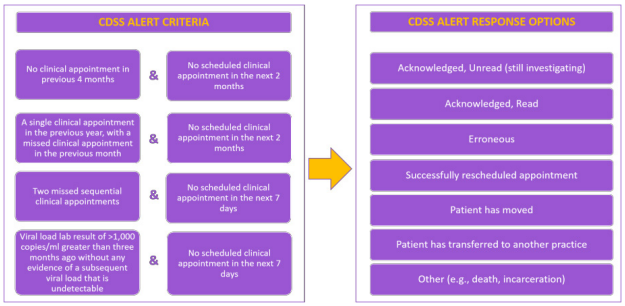


Figure 2. CDSS alert criteria and response options



Results. A total of 12,230 PLWH were eligible (sites A: 11,271; B: 733; C: 1,344 PLWH), with > 75% in both the *before* and *after* periods. The ratio of alerts to responses was 11.9 at site A (2,245 alerts to 189 responses in 309 days; Fig 3A), and comparatively lower at sites B (756 alerts to 334 responses in 352 days, ratio=2.2; Fig 3B) and C (1,305 alerts to 896 responses in 246 days, ratio=1.5; Fig 3C). Responses to alerts were sporadic at sites A and B and consistent at site C. After the intervention, the proportion of PLWH with ≥ 1 visit stayed the same at site A (46% in both periods; p=0.47), decreased at site B (91% to 80%; p< 0.01), and increased at site C (72% to 81%; p< 0.01).