Background
- Undisclosed antiretroviral therapy (ART) use can adversely affect individual patient management, program estimates of ART coverage, and interpretation of HIV clinical trials results.
- The goal of the study was to estimate the extent to which undisclosed ART use affects national estimates of UNAIDS 90-90-90 targets in Botswana.
- The limit of identification ranged from 5 to 10 ng/ml for most drugs and is 20 ng/ml for efavirenz.

Methods
- We utilized collected blood specimens collected during the BCPP from 30 communities across Botswana from November 2013 to November 2015 (Fig 1).
- Plasma was screened for ART drugs in blood by high-throughput liquid chromatography coupled with Q-Exactive high-resolution mass spectrometry using data-dependent fragmentation and selected reaction monitoring at resolution of 17,500.
- To obtain qualitative results, each specimen was compared to positive and negative controls for each drug.
- We utilized collected blood specimens collected during the BCPP from 30 matched communities participating in the BCPP.

Results
- Among 3,596 HIV-positive participants enrolled in a household survey in BCPP, 953 (27%; 95%CI: 24 - 29%) self-reported no prior use of ART, 135 (14%) of whom had HIV-1 RNA ≤ 400 copies/mL.
- Plasma from 134 of these 135 participants who reported no ART use and had HIV-1 RNA ≤ 400 copies/mL was screened for ART drugs.
- The most commonly identified ART combinations detected were [EFV/Emtricitabine/FTC/TDF] which were also the first-line treatment regimen most commonly prescribed in Botswana’s national ART program at the time of sampling.

Conclusion
- One or more ART drugs were detected in 52 (39%, 95% CI 29-50%) of the 134 virologically suppressed individuals who had plasma screened for ART drugs.
- Among 52 individuals with ART drug traces, 36 (69%) stated they did not know their HIV status.
- Traces of 3 ART drugs were detected in 42 participants, 2 drugs in 9 participants, and one participant had only a single drug detected (efavirenz (EFV)).
- The most commonly identified ART combinations detected were [EFV/Emtricitabine/FTC/TDF] and [Tenofovir (TDF) and Nevirapine (NVP)/FTC/TDF] which were also the first-line treatment regimens most commonly prescribed in Botswana’s national ART program at the time of sampling.

Acknowledgements
- We are very grateful to all participants of the Botswana Combination Prevention. We thank the study BCPP study team and the Botswana Ministry of Health and Wellness, Gaborone, Botswana; Brigham and Women’s Hospital, Boston, MA, USA; Centers for Disease Control and Prevention Botswana, Gaborone, Botswana; Botswana Ministry of Health and Wellness, Gaborone, Botswana; Brigham and Women’s Hospital, Boston, MA, USA; Johns Hopkins Hospital, Baltimore, MD, USA.

References

Figure 1. Map of 30 pair-matched communities participating in the BCPP.

Figure 2. Detection of ART drug traces among virally suppressed individuals in BCPP.

Figure 3. Proportions of HIV-infected individuals enrolled in the BCPP meeting the UNAIDS 90/90/90 targets at baseline.

Figure 4. Distribution of HIV-positive people by 1.5% adjusted after ART drug trace.

Figure 5. HIV positive people, Diagnosed, Currently on ART, Suppressed viral load.

Poster # 941

Hynes Convention Center
Boston, Massachusetts
March 4–7, 2018