# HIV-1 Drug Resistance and Treatment Outcomes in Experienced Kenyan Persons in the Dolutegravir Era

CROI2026
February 22–25 • Denver, Colorado
558

**SM Ali**[1,2], V. Novitsky[3], J. Humphrey[4] , D. Gaitho[1], S. Kadima[1], R Kantor[3]
[1]Academic Model Providing Access to Healthcare (AMPATH), Eldoret, Kenya; [2]Moi University, Eldoret, Kenya; [3]Brown University, Providence, RI, USA; [4]Indiana University, IN, USA

## BACKGROUND

- With expanding global antiretroviral therapy (ART) access, integrase strand transfer inhibitors (INSTIs) and protease inhibitors (PIs) are increasingly used in ART-experienced persons.
- Current data on the extent and impact of resistance in this population are limited yet needed to inform ART options.

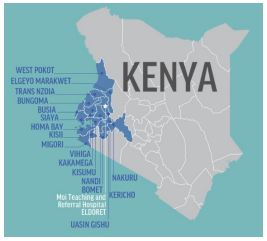
## PRIMARY OBJECTIVE

- Describe characteristics and prevalence of HIV drug resistance and determine clinical and virological outcomes among ART-experienced people living with HIV in a public-sector HIV program in Kenya.

## METHODS

- **Setting**: Academic Model Providing Access to Healthcare (AMPATH), a large HIV program in western Kenya (Figure 1).

**Figure 1: AMPATH Catchment Area**




**Eligibility Criteria:** (i) age ≥ 3 years at genotyping; (ii) failed INSTI- and/or PI-based ART per Kenya treatment guidelines (confirmed viral load >1000 copies/mL despite enhanced adherence counseling); (iii) available genotyping results between January 2021 to December 2025.

**Primary Outcome:** Intermediate- or high-level resistance by drug class, viral suppression ≥6 months post-genotyping, and clinical outcomes including active in care, death and lost to follow up at database closure.

**Analytic Methods**: Clinical and genotyping records were reviewed, and resistance interpretation was performed with Stanford Database tools. Data were summarized using frequencies and proportions for categorical variables and medians and interquartile ranges (IQR) for continuous variables.

HIV drug resistance is common among ART-experienced persons including to antiretrovirals with high genetic resistance barriers. Addressing treatment challenges is critical to optimize outcomes.

## RESULTS

### Characteristics at genotyping

- Table 1 shows demographic and clinical characteristics of the eligible 104 individuals.
- PI, NRTI, and NNRTI resistance data were available for n=104, while INSTI resistance data were available for n=53. Proportions with resistance to any drug and to class-specific categories are shown in Figure 2 (denominators: on or previously exposed to the drug).
- Specific resistance mutations detected are shown in Figure 3 (PI and INSTI: major only).

### Post-Genotyping Characteristics

- Post-genotyping, 17 (16%) remained on the same regimen, while 50 (48%) switched to INSTI-, 4 (4%) to PI-, 32 (31%) to PI+INSTI- and 1 (1%) to NNRTI-based ART. Virological and clinical outcomes are shown in Figure 4.

**Table 1. Characteristics of Participants at Genotyping**

| Characteristic | N=104 |
|---|---|
| Age, years (median, range) | 35 (5-68) |
| Sex<br>Male<br>Female | <br>43 (41%)<br>61 (59%) |
| Baseline CD4, cells/μL (median, IQR) | 240 (61-366) |
| Overall ART duration, years (median, IQR) | 14 (9-17) |
| Duration on DTG, years (median, IQR) | 3 (1-4) |
| VL at genotyping Log10 c/ml (median, range) | 4.33 (3.57-4.96) |
| Historical ART exposure<br>NNRTI<br>NRTI<br>PI<br>INSTI | <br>95 (91%)<br>104 (100%)<br>97 (93%)<br>21 (20%) |
| Anchor ART at genotyping<br>DTG<br>ATV/r<br>LPV/r | <br>19 (18%)<br>69 (66%)<br>16 (15%) |

**Figure 2: Intermediate- or High-Level Resistance by Antiretroviral Exposure**

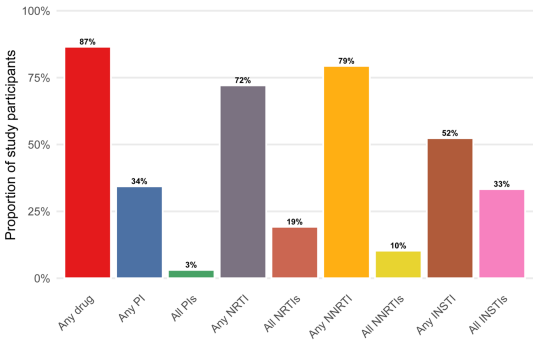



**Figure 3: Drug resistance mutations per ART class**

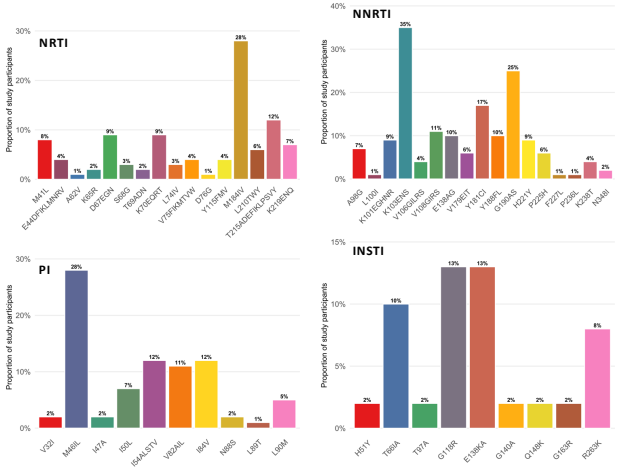
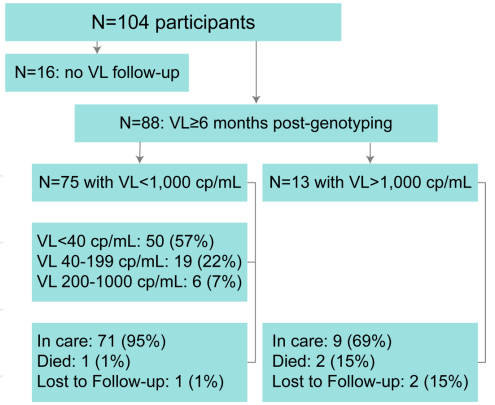



**Figure 4: Virological and Clinical Outcomes**




**Contact: Shamim Ali,** jmshamym@gmail.com

**Acknowledgements:**
We thank the AMPATH Leadership, Clinical and Care Lab staff for collecting the data that made this analysis possible. This research was partly funded by US NIH grants R01 AI186632, K24 AI134359, and P30 AI042853