

# Drug resistance among ART experienced hospitalized patients in Homabay (Kenya) and Kinshasa (the Democratic Republic of Congo)

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## Background

In sub-Saharan Africa, an increasing number of patients hospitalized with advanced HIV are ART-experienced, and mortality is extremely high. In those with an elevated viral load (VL $\geq$ 1000 copies/ml), WHO recommends enhanced adherence counselling and a switch to second-line ART if VL remains elevated 3 months after the initial assessment.

## Method

A mixed methods study was conducted between September 2017 and April 2018 in two MSF-supported hospitals in Kinshasa, (DRC) and Homabay, Kenya. Hospitalised patients aged  $\geq$ 15 years receiving first line ART for <6 months and with CD4 <350 cells/ $\mu$ L were eligible. CD4 count, VL and genotype were assessed at inclusion. Resistance was defined as having any major (intermediate/high) NRTI or NNRTI drug resistance. In-depth interviews were conducted to explore patient pathways to care. Interviews were audio-recorded, transcribed, translated and analysed thematically.

## Results

Among 317 eligible patients, 306 were included, with a median time of 5.3 years [IQR:2.5-10.3] on ART in Kinshasa and 4.0 years [IQR:1.8-8.9] in Homabay. Among them, 59% were women (68% Kinshasa, 54% Homabay) and their median age was 38 [31-48] years.

Median CD4 was 69 [IQR:29-134] cells/ $\mu$ L in Kinshasa and 135 [IQR:46-255] cells/ $\mu$ L in Homabay. Half had a VL $\geq$ 1,000 copies/mL (71% Kinshasa, 37% Homabay). Of those with VL $\geq$ 1000copies/mL, 72% and 75% were on completely ineffective regimens in Homabay and in Kinshasa, respectively. In-depth interviews with 30 participants revealed multiple attempts to access care and experiences of hospitalisation. Patients described extreme social and financial vulnerabilities linked to illness as well as to ART adherence challenges over time.

## Conclusion

A high proportion of ART-experienced patients hospitalized with advanced disease were resistant to their ARV treatment. Immediately switching to second-line ART after a single elevated VL or CD4<100 cells/ $\mu$ L should be recommended to hasten immune reconstitution. Interventions in decentralised facilities should be implemented to address missed opportunities for timely management of advanced HIV and drug resistance.

High rates of advanced HIV and mortality among hospitalized patients on ARV treatment are found in sub-Saharan Africa. Given the high level of drug resistance, treatment of these patients requires prompt action, including community-level interventions.