

# SEROPREVALENCE AND ACTIVE VIRAEMIA OF HIV, HBV, AND HCV IN SOUTH AFRICAN NYAOPE USERS

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**BACKGROUND AND OBJECTIVES:** Blood-borne viral infections (BBVs) such as human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV), disproportionately affect people who inject drugs (PWID). In South Africa, limited data exist on the burden of these infections among nyaope users, despite increasing injection practices of nyaope. This study investigated seroprevalence and viral load levels of HIV, HBV, and HCV among PWID admitted to a tertiary hospital in Pretoria.

**METHODS:** A cross-sectional study was conducted among 202 adults admitted to Dr George Mukhari Academic Hospital between April 2024 and August 2025. Participants were self-identified as nyaope users and alert enough to provide their informed consent. HIV status was determined using two rapid antibody tests (FIRST RESPONSE® HIV 1–2.0 and ONE STEP Anti-HIV 1&2). HBV and HCV serological markers were tested using the Cobas® 6000 analyzer series, and viraemia was confirmed by real-time polymerase chain reaction (qPCR) using the CFX96™ Deep Well Dx detection system.

**RESULTS:** Seroprevalence of HIV was 75.3% (152/202), HBV 7.4% (15/202), and HCV 85.6% (173/202). HIV–HCV coinfection occurred in 73.3% of the participants. Viraemia was detected in 82.9% (126/152) of HIV-positive individuals, 5.9% (12/202) for HBV, and 66.5% (115/173) for HCV. These findings indicate that a substantial proportion of individuals not only tested positive serologically but also had active viraemia, underscoring ongoing transmission risks and clinical burden.

**CONCLUSION:** HIV and HCV prevalence among nyaope users in Pretoria are exceptionally high, with widespread viraemia confirming active infection. HBV prevalence was lower but remains relevant. These results highlight the urgent need for integrated harm-reduction

interventions, including routine BBV testing, HBV vaccination, and accessible treatment services.