ANALYSIS OF RECENT INFECTION AMONG PERSONS NEWLY DIAGNOSED WITH HIV IN NIGERIA

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Moses Katbi[1], Amalachukwu Ukaere [2], Adefisayo Adedoyin [2] Amobi Onovo1 Adeoye Adegboye 1 Helina Meri 1 David Onime 1 Rachel Goldsteine 1 Angela Agweye 1 Pamela Gado1
1 United States Agency for International Development, Abuja, Nigeria, [2]Society for Family Health, Abuja, Nigeria,

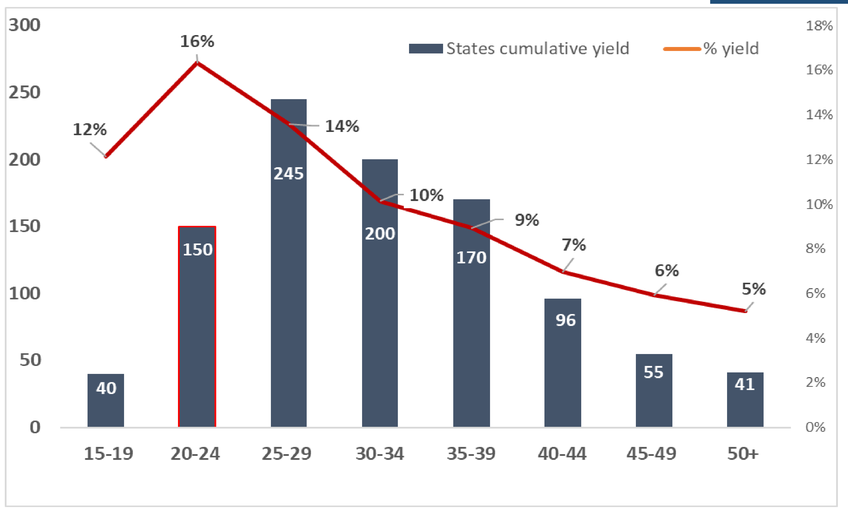
BACKGROUND

Estimation of recent infection among people newly diagnosed with HIV is necessary to understand the dynamics of new infection within a community. Understanding these dynamics may help in identifying geographic areas and subpopulations with high HIV transmission rates for targeted testing. Recency testing helps to detect people who were recently infected with HIV so that prevention programs can focus on preventing incident infections to reduce new infection rates and ultimately interrupt further transmission to achieve epidemic control. The PEPFAR team in Nigeria introduced recency testing in 2020. We conducted a retrospective analysis of USAID Nigeria's recency testing data over 18 months period.

METHODS

Testing for recent infection using a pre-approved recency test kit was conducted for newly diagnosed HIV-positive clients in 10 states over an 18-month period. Data was analyzed using SPSS version 22. Using One-way Welch ANOVA we determined if there was any difference in the recent infection yields of different age groups. Welch T-test was done to determine if any significant difference exists in the recency testing yield between males and females. Pearson Chi-square was used to determine if the yield from one state disaggregated by gender was due to chance or not. We carried out a Multinomial regression to determine how well gender and age range can predict recency yield in the study states.

Gender and age are important in predicting high prevalent populations for targeted HIV testing, this can help in identifying positive persons in a generalized or low prevalence epidemic



RESULTS

A total of 10,070 PLHIV (male=40%; female=60%) where screened for recent infection with 10% (n=1010; (male=39%; female=61%) identified as having recent HIV infection. One-way Welch ANOVA shows a statistically significant difference in recency testing yield (new infection rate) for the 8 different age groups, Welch's F (7, 304.463) = 183.574, p<0.0005., the highest yield for recent infection was seen in the age group 20-24 years (16%) while the lowest in the age group 50+ (4%). Females generally had higher recent infection rates (11%) than males (9%). Games-Howell post hoc analysis revealed that the difference in the mean for the age groups with the highest (25-29 years) and lowest (15-19 years) number of recent infections was statistically significant. Welch T-test shows that the difference in the mean yield between males and females was statistically significant with a mean difference of 131. 624 (95%CI = -144.635 to -118.613); t (873.43) = 19.855; p < 0005. Multinomial regression shows a statistically significant likelihood ratio test for both gender and age range. This means that gender and age range significantly improve the yield prediction in the states.

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CONCLUSIONS

Recent infection is higher among certain age groups and varies across geographic areas. The recent infection rate is higher among females. HIV intervention should be prioritized to focus on the age range and gender with the highest new infection rate to halt the HIV epidemic trend in Nigeria.

ADDITIONAL KEY INFORMATION

Author: Dr. Moses Katbi
Email: Olukatbi@yahoo.com, mkatbi@usaid.gov

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