How close to 90-90-90? Measuring undiagnosed HIV infection, ART use, and viral suppression in a community-based sample from Namibia’s highest prevalence region

Background

Data on the continuum of HIV care are necessary to track progress in the response to the epidemic; however, they are difficult to obtain, particularly at a sub-national level. We directly measured HIV diagnosis, receipt of ART, and viral suppression in a community-based sample of adults in Zambezi, the region of highest HIV prevalence in Namibia.

Methods

A cross-sectional, household survey was conducted from 12/2014 - 7/2015 in five purposefully selected sentinel community sites of Namibia’s Zambezi region that are serviced by a home-based testing and case management program called Total Control of the Epidemic (TCE). Adults (≥15 years) were invited to participate in the survey using the national algorithm, completed behavioral interviews, and submitted dried blood spots (DBS) in their homes. Previous HIV diagnosis and receipt of ART within the past 90 days were measured through self-report and verified in patient-card records when available. HIV RNA viral load was quantified using DBS (Abbott Real-Time HIV-1 m2000 platform), Multivariable logistic regression was used to characterize disparities in care outcomes. Multivariable logistic regression was used to characterize disparities in care outcomes.

Results

We enrolled 2,163 adults, of whom 1,312 (61.7% [95% CI: 58.6-64.7]) were female and 461 [21.3% [95% CI: 19.6-23.1]) were HIV-positive. Among HIV-positives, 293 (63.6% [95% CI: 59.0-68.0]) were previously diagnosed. Among those diagnosed, 242 [62.6% [95% CI: 57.7-68.6]) were receiving ART. Of 209 DBS tested (Abbott m2000), viral suppression among all HIV-positive adults. HIV diagnosis was significantly lower among men [Adjusted odds ratio (AOR): 0.24, P<0.001] and youth (<25 years) [AOR: 0.15, P<0.001]. Viral suppression was significantly lower among youth (<25 years) [AOR: 0.27, P<0.001] and rural residents [AOR: 0.33, P<0.001]. Receipt of ART was somewhat lower among rural residents [AOR: 0.33, P<0.001]. Viral suppression was significantly lower among youth (<25 years) [AOR: 0.27, P<0.001]. Viral suppression was significantly lower among youth (<25 years) [AOR: 0.27, P<0.001]. Viral suppression was significantly lower among youth (<25 years) [AOR: 0.27, P<0.001]. Viral suppression was significantly lower among youth (<25 years) [AOR: 0.27, P<0.001].

Conclusions

With 83% of previously diagnosed adults receiving ART and 81% of those on ART with a viral load result available achieving viral suppression, the second and third benchmarks of the UNAIDS’targets are within reach for adults in Zambezi. High levels of linkage to care following HIV diagnosis (95%) are also apparent. However, serostatus awareness among HIV-positive adults was well below the 90% target, especially among men and youth. Thus, overall prevention impact may be limited with only 37% of HIV-positive adults having unsuppressed viral load. If the population-level prevention benefit of ART is to be maximized, “test and start” policies must be strengthened with new interventions to improve serostatus awareness.

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