REACHING THE THIRD 95 IN UGANDA AFTER LOWERING HIV VIRAL LOAD SUPPRESSION CUTPOINTS

1047

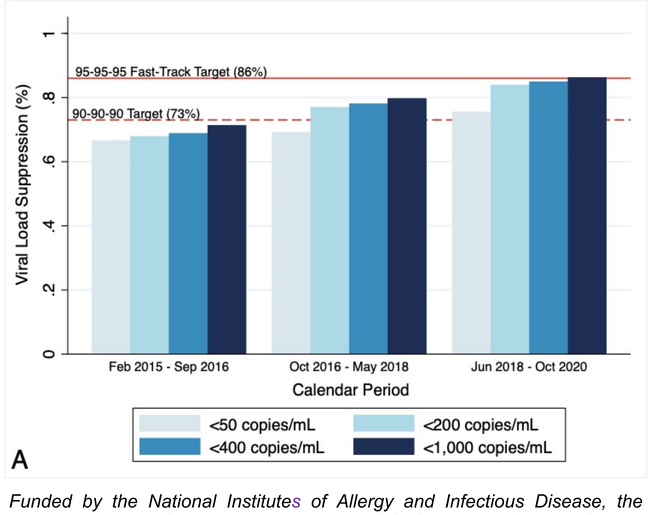
Joseph G. Rosen[1], Steven J. Reynolds[2,3,4], Ronald M. Galiwango[2], Godfrey Kigozi[2], Thomas C. Quinn[2,3,4], Oliver Ratmann[5], Lisa J. Nelson[6], Gertrude Nakigozi[2], Margaret Nalugemwa[2], Katherine B. Rucinski[1], Caitlin E. Kennedy[1,2], Larry W. Chang[2,3], Joseph Kagaayi[2], David M. Serwadda[2], M. Kate Grabowski[2,7]

BACKGROUND

- UNAIDS and WHO define viral load suppression (VLS) using a cutpoint of **<1,000 copies/mL**
- Emerging evidence linking persistent lower-level viremia to subsequent virologic failure and drug resistance has prompted calls to redefine VLS with lower cutpoints
- Lowering VLS cutpoints could result in the detection and escalated clinical management of persons experiencing both sustained (consequential) and transient (self-resolving) viremia
- Redefining VLS cutpoints will likely affect estimated progress towards the UNAIDS 95-95-95 targets
- **The present study quantified the potential impact of lowering VLS cutpoints on progress towards the "third 95" at population level in south-central Uganda**

METHODS

- Data were derived from 3 survey intervals of the Rakai Community Cohort Study (RCCS), a longitudinal, population-based HIV surveillance study in Uganda
- Viral load testing was performed on stored plasma using the Abbott RealTi*m*e HIV-1 assay
- The fraction of persons exhibiting VLS was calculated and compared in each survey interval across 4 cutpoints: <1,000, <400, <200, and <50 copies/mL



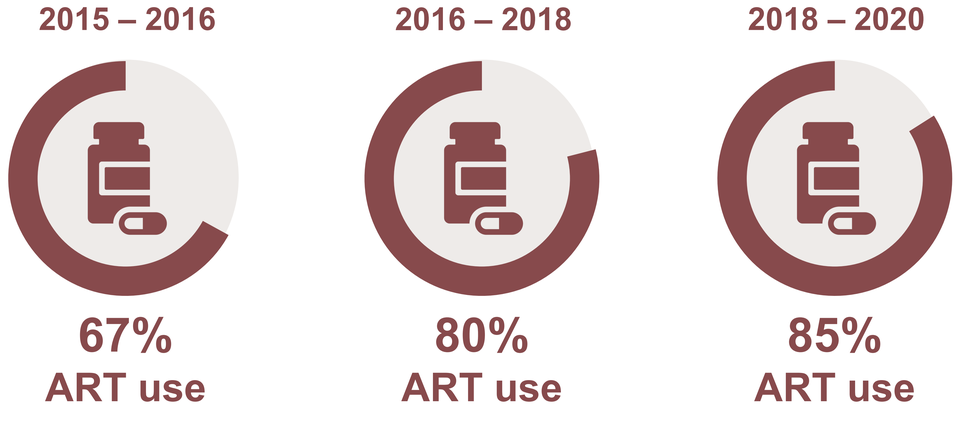
Funded by the National Institutes of Allergy and Infectious Disease, the National Institute of Mental Health, and the U.S. Centers for Disease Control and Prevention via the U.S. President's Emergency Plan for AIDS Relief

Population VLS would fall from **86% to 76%** in Uganda if the VLS cutpoint were lowered from **<1,000 to <50 copies/mL**

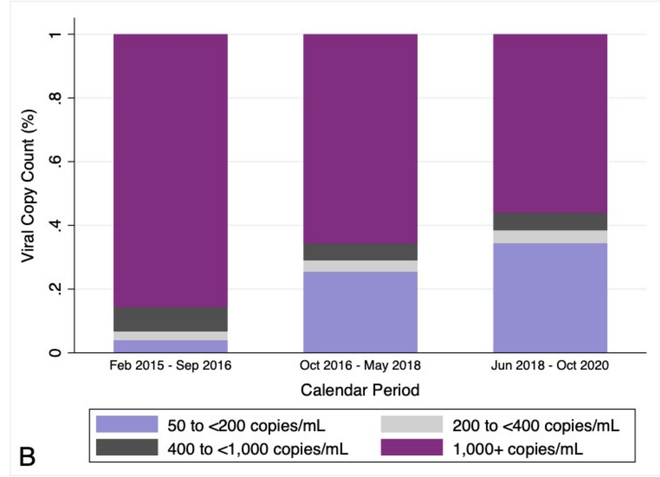
Lowering the VLS cutpoint to **<200 copies/mL** would increase the fraction of **persons with detectable viremia** by **17%**

RESULTS

- Overall, **5,814 RCCS participants** (median: 33 years [IQR 29-40 years], 63% women) with serologically confirmed HIV infection contributed **10,418 observations** from Feb. 2015 to Oct. 2020
- Self-reported current ART use in the sample increased from **67%** (CI 65–68%) in **2015-2016** to **85%** (CI 83–86%) in **2018-2020** (p<0.001)



- **By 2018-2020, population VLS** (<1,000 copies/mL) **met the "third 95" (86%, CI 85–87%)** (Fig. A)
- After implementing the most conservative VLS cutpoint of <50 copies/mL, **population VLS declined to 76% (CI 74–77%)** in 2018-2020, falling below the "third 95" target (Fig. A)
- Even among persons self-reporting current ART use, **population VLS in 2018-2020 remained well-below the "third 95"** using a cutpoint of <50 copies/mL **(83%, CI 82–85%)**
- The fraction of persons with detectable viremia (n = 788) **increased 17%** in 2018-2020 after **lowering the VLS cutpoint from <1,000 to <200 copies/mL** (Fig. B)



CONCLUSIONS

- Across VLS cutpoints, remarkable progress towards the "third 95" has been made in Uganda
- **Estimates of the "third 95" are highly sensitive to VLS cutpoints at the population level**
- The predicted increase (17%) in the fraction of persons with detectable viremia may overwhelm health systems
- Additional guidance on switching persons with lower-level viremia to second- or third-line ART is needed

ADDITIONAL KEY INFORMATION

Affiliations

[1] Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
[2] Rakai Health Sciences Program, Entebbe, Uganda
[3] Division of Infectious Diseases, Johns Hopkins School of Medicine, Baltimore, MD
[4] Division of Intramural Research, National Institute of Allergy and Infectious Diseases, Bethesda, MD
[5] Department of Mathematics, Imperial College, London, UK
[6] Centers for Disease Control and Prevention, Kampala, Uganda
[7] Division of Pathology and Transfusion Medicine, Johns Hopkins School of Medicine, Baltimore, MD

Author Contact Information

Greg Rosen, jrosen72@jhu.edu