BACKGROUND
In the ART era, population HIV viral load (PVL) quantifies gaps in the HIV care cascade, as well as the residual transmission potential from population subgroups.

PRIMARY STUDY AIMS
• Quantify HIV PVL in south-eastern Uganda.
• Identify population groups with excess PVL.
• Compare treatment gaps in fishing & inland communities.

METHODS
• We conducted a cross-sectional viral load survey in 36 inland communities and 4 fishing communities in Rakai District Uganda between January 2015 and September 2016 as part of the Rakai Community Cohort Study.
• All individuals 15-49 years living in RCCS communities for at least one month at time of survey and intention to stay for at least 6 months were eligible. Consenting participants were offered free voluntary HIV-1 testing.
• HIV viral loads were measured on stored serum samples from HIV-positive participants using the Abbot RealTime assay.
• HIV+ participants with VL>1,000 (copies/ml) were defined to have unsuppressed VL. Mean population VL was calculated by assigning zero VL to HIV- individuals and HIV+ individuals with VL <400 copies/ml.
• Age trends were estimated with running means over the two prior and two subsequent age years.

SURVEYED COMMUNITIES, RAKAI DISTRICT

KEY RESULTS 2015/01 – 2016/09

- In 2015/01-2016/09, 18,656 individuals participated, 3,467 (18.6%) were HIV-positive, and 3,454 (99.6%) had their VL measured.
- HIV prevalence was higher in women than men, peaking at an estimated 62% [56%-67%] in 37yr old women in fishing communities.
- The proportion of HIV+ participants with unsuppressed VL was substantially higher in men than women, and >50% among <29yr old men in fishing communities and 18-26yr old men in inland communities.
- The proportion of the population that remained with unsuppressed VL was below 5% in women in inland communities and below 15% in women in fishing communities, and above 15% for 26-43yr old men in fishing communities.
- Mean PVL was 1.88 [1.31-2.70] times higher in men than women in inland communities and 2.41 [1.60-3.82] times higher in men than women in fishing communities.
- When compared to the population with unsuppressed HIV, mean PVL curves stratified by age were higher than expected among men based on the proportion of the population with unsuppressed viral load. This reflected in part higher VL in unsuppressed men than unsuppressed women.

CONCLUSIONS
- PVL analysis revealed marked differences in VL suppression in 2015-2016, with VL burden greater in men than women and concentrated in fishing communities. Prevention interventions in inland communities and rapid scale-up in fishing communities led to considerable increases in suppression levels by 2016. Intensified interventions to improve health and reduce future infections are warranted especially among young women, and men of all ages.

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