Recent HIV Infection and Factors Among Newly Diagnosed Clients in Routine Testing Services, Tanzania

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BACKGROUND

- Recent HIV infection testing distinguishes recent (occurring within ≤1 year) from long-term infections.
- We conducted facility-based HIV recency surveillance among people seeking HIV testing services (HTS).
- Asante HIV-1 Rapid Recency Assay, a rapid test for recent infection (RTRI), was used with HIV viral load (VL) testing for an HIV recent infection testing algorithm (RITA).
- We reported proportion of RITA-recent infections and associated factors among people who attended 275 high volume, purposively selected HIV testing facilities conducting recency surveillance in 11 regions of mainland Tanzania and Zanzibar between September 2023− October 2024.

METHODS

- People aged ≥15 years with new HIV diagnoses were offered recency testing at the point of HTS.
- Consenting people completed an HIV risk questionnaire and received a RTRI. Those with RTRI-recent results were referred for an HIV VL test.
- Those with RTRI-recent results and HIV VL ≥1000 copies/mL were classified as having RITA-recent infections.
- RITA status was imputed for people with RTRI-recent result and unavailable HIV VL results using multivariate chained equations in 100 datasets.
- We reported unweighted proportions (%) and adjusted odds ratios (aOR) of RITA-recent infection with 95% confidence intervals (CI).
- We compared demographic characteristics and HIV risk behavior factors using t-test, Fishers' Exact test, and logistic regression using a significance level of 0.05.

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We also thank Dr. Mohamed Mwedi for presenting this work at CROI 2026.

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In 2023-24, ~4% of individuals newly diagnosed with HIV infection were recently infected; the majority were among priority sub-populations.

RESULTS

- Of 20,303 people with a new HIV diagnosis, 20,088 (98.9%) consented to recency testing.
- 20,020 (99.7%) had a valid RTRI result. 67.5% were female, and median (IQR) age was 34 (27–43) years.
- 1,266 (6.3%) people had RTRI-recent results. Of those, 1,080 (85.3%) had available VL results, and RITA status for 186 (14.7%) people without a final VL result was imputed.
- Overall, 3.9% (95% CI: 3.7–4.3%) of people tested had a RITA-recent infection.
- RITA-recent infection was higher among:
  - Females (4.5%) compared to males (2.9%) (p<0.001).
  - Those engaging in commercial sex in the past year (5.5%) compared to those who did not (3.8%) (p <0.001).
- Adjusted results showed higher odds of RITA-recent infection among:
  - Younger people aged 15–19 (aOR: 2.0, 95% CI 1.42–2.83) and 20–24 years (aOR: 1.5, 95% CI 1.15–1.89) compared to those aged 30–34 years.
  - Those reporting sex with an HIV-positive partner in the past year (aOR: 1.35, 95% CI: 1.07–1.70) compared to those who did not.

CONCLUSIONS

- The proportion of recent HIV infections among people with a new HIV diagnosis was low, but females, youth and those engaging in commercial sexual activities were more likely to have been recently infected.
- The findings highlight the value of recency surveillance in detecting potential ongoing HIV transmission within priority populations. They can be used to guide targeted, population-specific HIV prevention services to reduce new infections.

This project was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through U.S. Centers for Disease Control and Prevention (CDC) Cooperative Agreement NU2GGH001941. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the funding agencies.

Table 1. Characteristics and recent HIV infection status among people with a new HIV diagnosis identified during routine HIV testing services—Tanzania, October 2023–September 2024 (N=20,020)

Characteristics	Total n (%)	RITA-recent % (95% CI)*	Adjusted odds ratio (95% CI)*
Sex			
Female	13,524 (67.6)	**4.5 (4.1–4.9)**	**1.2 (1.03–1.52)**
Male	6,496 (32.4)	2.9 (2.5–3.3)	Ref
Age (years)			
15–19	682 (3.4)	8.7 (6.5–10.9)	**2.0 (1.42–2.83)**
20–24	2,707 (13.5)	6.1 (5.2–7.0)	**1.5 (1.15–1.89)**
25–29	3,472 (17.3)	5.2 (4.5–6.0)	1.3 (0.99–1.60)
30–34	3,504 (17.5)	4.1 (3.5–4.8)	Ref
35–39	3,006 (15.0)	3.2 (2.5–3.8)	0.8 (0.57–1.00)
40–44	2,403 (12.0)	2.9 (2.2–3.6)	0.8 (0.57–1.05)
45–49	1,714 (8.6)	1.9 (1.3–2.6)	0.5 (0.33–0.73)
50+	2,532 (12.6)	1.8 (1.3–2.3)	0.4 (0.29–0.62)
Engaged in commercial sex in the past year (N=19,436)**			
No	17,762 (91.4)	3.8 (3.5–4.1)	Ref
Yes	1,674 (8.6)	**5.5 (4.4–6.7)**	1.2 (0.95–1.61)
Paid for sex in the past year (N=19,502)**			
No	17,443 (89.4)	3.9 (3.6–4.2)	Ref
Yes	2,059 (10.6)	4.9 (4.0–5.9)	1.2 (0.95–1.58)
Had sex with HIV-infected partner(s) (N=19,600)**			
No	5,244 (26.8)	3.4 (2.9–4.0)	Ref
Yes	4,231 (21.6)	4.2 (3.6–4.8)	**1.4 (1.07–1.70)**
Don't know	10,125 (51.6)	4.2 (3.8–4.6)	1.2 (0.96–1.43)

RITA: recent infection testing algorithm. CI: confidence interval
Ref: reference group
**Statistically significant values bolded*
***People with missing risk category response are excluded.*

PLAIN LANGUAGE SUMMARY

In Tanzania, ~4% of individuals diagnosed with HIV were infected within the past 12 months. Recent infections were more common among females, youth, and those engaging in commercial sex. The findings helped to identify populations with ongoing HIV transmission and guide HIV prevention services to reduce new infections.