# Recent HIV infection among youth in Thailand: Who is at risk?

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## BACKGROUND

Youth (defined as 15–24-year-old) are at risk of HIV infection due to their sexual activity and related risk behaviors. In Thailand, there were an estimated 4,247 (46%) new HIV infections among youth in 2023.
We describe characteristics of newly diagnosed HIV positive youth with test results suggesting recent HIV infection in 9 provinces in Thailand.




**Figure 1. Provinces participating in the National Surveillance of Recent HIV infection, September 2022 and March 2024**

## METHODS

- Cross-sectional design, data from the National Surveillance of Recent HIV infection reported between September 2022 and March 2024
- Inclusion criteria: Newly reported HIV-positive individuals aged ≥15 years living in 9 selected provinces
  - Individuals with prior HIV diagnosis and ART history were excluded using case surveillance
- Blood samples were tested with a rapid infection testing algorithm (RITA) using Asante HIV-1 rapid test (Figure 2) for recent HIV-1 infection (RTRI) and baseline CD4 to identify individuals who were infected in the past 12 months.

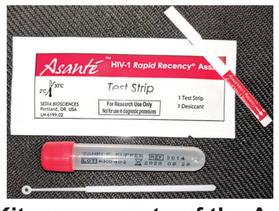



**Figure 2. Kit components of the AsantéTM HIV-1 Rapid Recency® Assay**

- RITA-recent was defined as RTRI-recent and CD4>200 cells/μL
- Multivariate logistic regression analyses were used to explore the association between RITA-recent infection and potential risk factors such as sex, nationality, marital status, employment, sexual orientation, and geographic region among youth.
- A separate analysis comparing RTRI-recent (n=709) and RITA-recent (n=708) cases was conducted to identify any discordance between the two approaches.

**Single youth living in the Northern region are at a higher risk of HIV acquisition**

## RESULTS

Of 709 newly diagnosed youth, 64 (9.0%) tested RITA-recent. Of these, 61 (95%) were male, 60 (94%) were Thai, 57 (89%) were single, 29 (45%) were students, 54 (84%) were bisexual or men who have sex with men , and 28 (44%) lived in Bangkok. In multivariate analysis, being single (AOR 2.51; 95% CI 1.03–7.19) compared to married and living in the Northern region (AOR 5.80; 95% CI 1.66–23.7) compared to the Central region were risk factors for testing RITA-recent. A separate analysis comparing RTRI-recent and RITA-recent results revealed the same risk factors: single (AOR 3.08; 95% CI1.28–8.73) and living in the Northern region (AOR 4.26; 95% CI 1.38–14.2) (Table 1).

**Table 1. Factors associated with RTRI-Recent and RITA-Recent HIV infection among 15-24 year old PLHIV in 9 provinces, Thailand, September 2022 - March 2024**

| | RTRI Recent (N=709) | | | | | | | | RITA Recent (N=708) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Univariate | | | | | Multivariate | | | Univariate | | | | | Multivariate | | |
| Characteristic | n | N | OR | 95% CI | p-value | AOR | 95% CI | p-value | n | N | OR | 95% CI | p-value | AOR | 95% CI | p-value |
| Sex | | | | | | | | | | | | | | | | |
| Female | 4 | 114 | — | — | | — | — | | 3 | 114 | — | — | | — | — | |
| Male | 69 | 595 | 3.61 | 1.46, 12.0 | 0.015 | 1.28 | 0.31, 5.60 | 0.727 | 61 | 594 | 4.23 | 1.53, 17.6 | 0.016 | 1.42 | 0.29, 7.75 | 0.665 |
| Nationality | | | | | | | | | | | | | | | | |
| Non Thai | 4 | 105 | — | — | | — | — | | 4 | 105 | — | — | | — | — | |
| Thai | 69 | 604 | 3.26 | 1.31, 10.9 | 0.025 | 2.48 | 0.89, 8.84 | 0.111 | 60 | 603 | 2.79 | 1.12, 9.34 | 0.052 | 2.05 | 0.73, 7.38 | 0.214 |
| Marital Status | | | | | | | | | | | | | | | | |
| Married | 6 | 198 | — | — | | — | — | | 6 | 198 | — | — | | — | — | |
| Single/Widow/Separate** | 66 | 503 | 4.83 | 2.23, 12.7 | <0.001 | 3.08 | 1.28, 8.73 | 0.019 | 57 | 502 | 4.10 | 1.88, 10.8 | 0.001 | 2.51 | 1.03, 7.19 | 0.060 |
| Employment | | | | | | | | | | | | | | | | |
| Unemployed | 4 | 69 | — | — | | — | — | | 4 | 69 | — | — | | — | — | |
| Student | 32 | 211 | 2.91 | 1.10, 10.0 | 0.052 | 1.37 | 0.48, 4.99 | 0.590 | 29 | 211 | 2.59 | 0.97, 8.98 | 0.085 | 1.29 | 0.44, 4.75 | 0.667 |
| Office Worker | 5 | 107 | 0.80 | 0.20, 3.32 | 0.741 | 0.43 | 0.10, 1.89 | 0.240 | 5 | 107 | 0.80 | 0.20, 3.32 | 0.741 | 0.43 | 0.10, 1.93 | 0.251 |
| Laborer | 30 | 301 | 1.80 | 0.68, 6.21 | 0.286 | 1.45 | 0.51, 5.21 | 0.523 | 24 | 300 | 1.41 | 0.52, 4.93 | 0.535 | 1.21 | 0.42, 4.42 | 0.745 |
| Sexuality | | | | | | | | | | | | | | | | |
| Bisexual/MSM** | 60 | 478 | 1.58 | 0.45, 10.0 | 0.543 | 3.47 | 0.66, 64.2 | 0.238 | 54 | 478 | 2.80 | 0.57, 50.7 | 0.318 | 3.19 | 0.60, 59.2 | 0.273 |
| Heterosexual | 11 | 207 | 0.62 | 0.15, 4.15 | 0.547 | 1.44 | 0.20, 29.3 | 0.750 | 9 | 207 | 1.00 | 0.18,18.9 | >0.99 | 1.17 | 0.15, 24.3 | 0.896 |
| Other | 2 | 24 | — | — | | — | — | | 1 | 23 | — | — | | — | — | |
| Geographic Region | | | | | | | | | | | | | | | | |
| Central | 6 | 86 | — | — | | — | — | | 4 | 86 | — | — | | — | — | |
| North | 10 | 45 | 3.81 | 1.31, 12.0 | 0.016 | 4.26 | 1.38, 14.2 | 0.013 | 9 | 45 | 5.12 | 1.56, 19.9 | 0.010 | 5.80 | 1.66, 23.7 | 0.008 |
| Northeast | 19 | 113 | 2.70 | 1.08, 7.69 | 0.044 | 1.86 | 0.70, 5.54 | 0.233 | 15 | 112 | 3.17 | 1.10, 11.5 | 0.048 | 2.39 | 0.79, 8.98 | 0.151 |
| South | 8 | 85 | 1.39 | 0.46, 4.38 | 0.563 | 1.18 | 0.36, 3.97 | 0.780 | 8 | 85 | 2.13 | 0.64, 8.24 | 0.232 | 1.83 | 0.51, 7.46 | 0.366 |
| Bangkok | 30 | 380 | 1.14 | 0.49, 3.13 | 0.774 | 1.22 | 0.50, 3.47 | 0.678 | 28 | 380 | 1.63 | 0.62, 5.62 | 0.373 | 1.67 | 0.60, 5.92 | 0.369 |
| CD4.cat | | | | | | | | | | | | | | | | |
| <=500 | 51 | 534 | — | — | | — | — | | 43 | 534 | — | — | | — | — | |
| >500 | 21 | 164 | 1.39 | 0.79, 2.36 | 0.232 | 1.88 | 1.02, 3.37 | 0.038 | 21 | 164 | 1.68 | 0.95, 2.89 | 0.067 | 2.25 | 1.21, 4.11 | 0.009 |

OR = Odds Ratio, AOR = Adjusted Odds Ratio, CI= Confidence Interval
** Categories combined due to empty cell size in recency status.

## CONCLUSIONS

- Single youth living in the Northern region are at a higher risk of HIV acquisition
- Our findings underscore the importance of implementing immediate and targeted public health interventions tailored to this particular youth group to effectively reduce HIV incidence

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