

Economic Evaluation of HIV Infection Recency at Four Health Facilities in Bangkok, Thailand

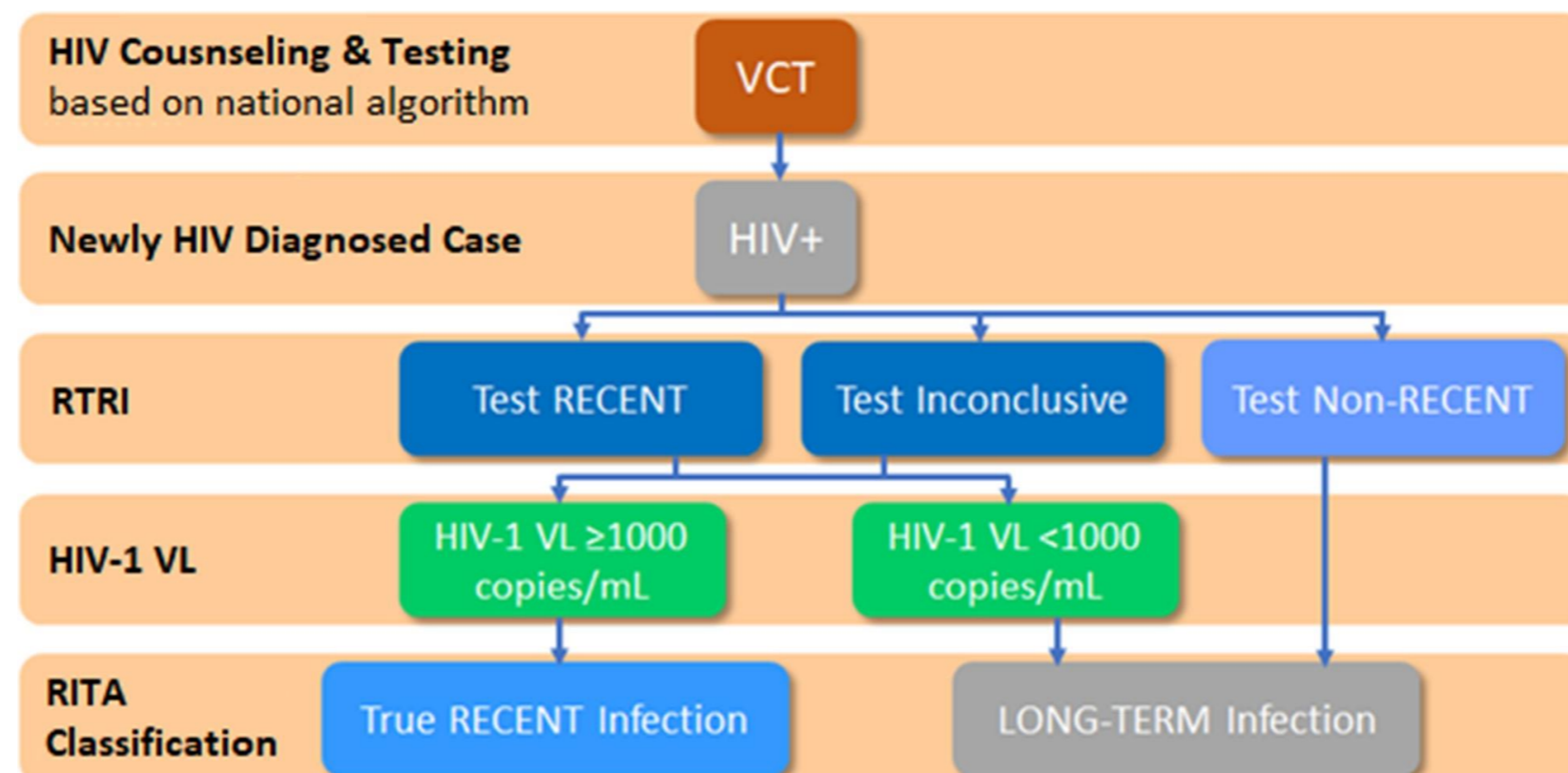
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Introduction

- Implementing a rapid test for HIV recent infection (RTRI) can inform effective targeted HIV prevention strategies to achieve epidemic control.
- While the RTRI and recent infection testing algorithm (RITA), which combines RTRI with viral load (VL) testing, have been implemented in several countries, costs of implementing them have not been reported.
- We evaluated costs and outcomes of the implementation of RTRI and RITA in routine HIV testing services at four Bangkok Metropolitan Authority health facilities from October 2021 through September 2022.

Recent Infection Testing Algorithm (RITA)



Methods

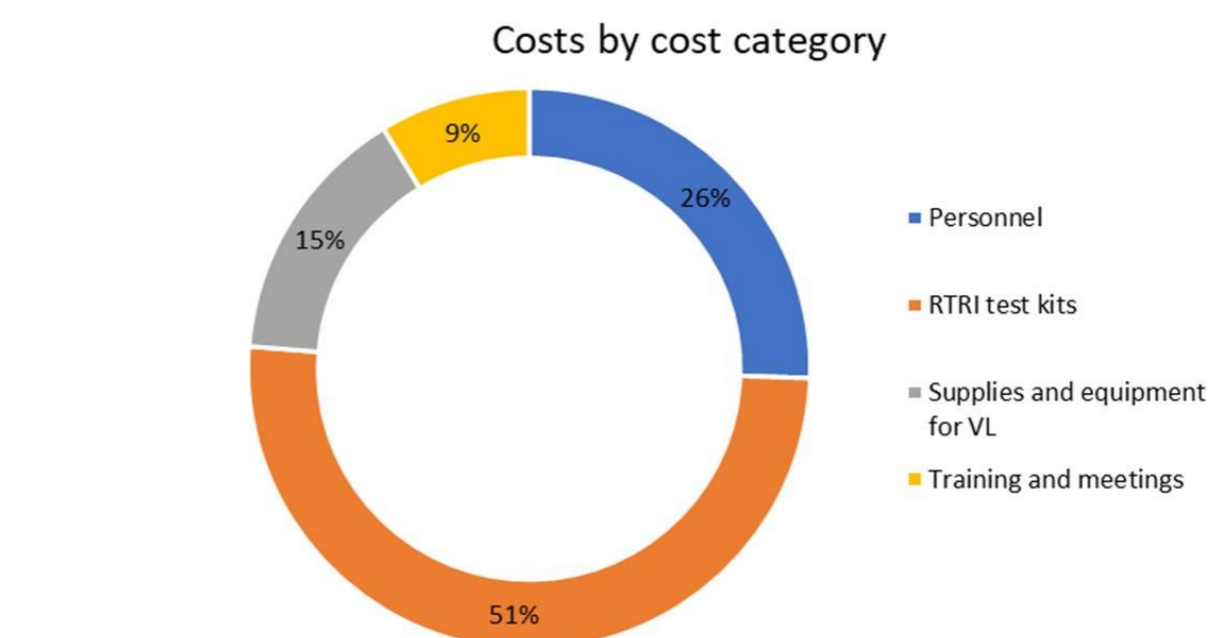
- Study sites were purposively selected based on the number of RTRI-recent cases, VL testing facility (on-site/off-site), and facility type (hospital/health center).
- We used case surveillance (CS) data (client registration, clinical data) collected routinely through the national AIDS program to verify eligibility: newly diagnosed HIV positive clients ≥ 13 years, ARV initiated ≤ 28 days, known HIV positive status for less than 1 month.
- Enrolled clients with RITA recent infections were those who tested RTRI recent with viral load (VL) $\geq 1,000$ copies/ml. RITA long-term (LT) infections were RTRI-LT or RTRI-recent with VL $< 1,000$ copies/ml.
- Cost data were collected retrospectively from data systems and staff interviews using an ingredient-based costing approach.
- Cost data were collected by cost category (personnel [RTRI related testing and counseling, lab [RTRI and VL], RTRI test kits, supplies and equipment for VL testing, training and meetings), and by program area (RTRI related testing and counseling, lab (RTRI), lab (VL), and training and meetings).
- Total costs and cost per outcome ratios were estimated in 2022 USD for the implementation period from October 2021 through September 2022.

Results

- The use of CS to verify eligibility for RTRI improved the proportion of RTRI-recent from 3% (Range: 1-7%) to 13% (Range: 7-22%), corresponding to almost 75% in cost savings.
- Approximately 24% of RTRI-recent cases (Range: 0-29%) had suppressed VL and were reclassified as RITA-LT.
- The estimated total economic costs of implementing RTRI and RITA were \$6,177 and \$7,487, respectively. RTRI test kits were the main cost drivers followed by personnel, VL tests, and training & meeting.
- The average costs per RTRI-recent and RITA-recent were \$158 and \$242, respectively. The addition of VL test to improve classification of recency status costed about 53% more on average (Range: 41-86%).
- A separate analysis showed that on-site and off-site VL testing facilities were comparable in cost.

Conclusions

- Of those probable recent cases, about 24% (Range: 0-29%) had suppressed VL and were reclassified as LT infection; one probable recent case did not complete VL test.
- Use of CS data is routinely integrated into HTS at study sites; no costs incurred from using CS data in implementing RTRI.
- Use of CS improved the predictive value of RTRI-recent and reduced costs.
- Integrating RITA into routine HIV services incurred higher costs than RTRI which may help inform cost-effective options for programs in limited resource settings.



Disclaimers

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