Can HIV testing data and recent HIV infection surveillance identify similar signals of transmission?

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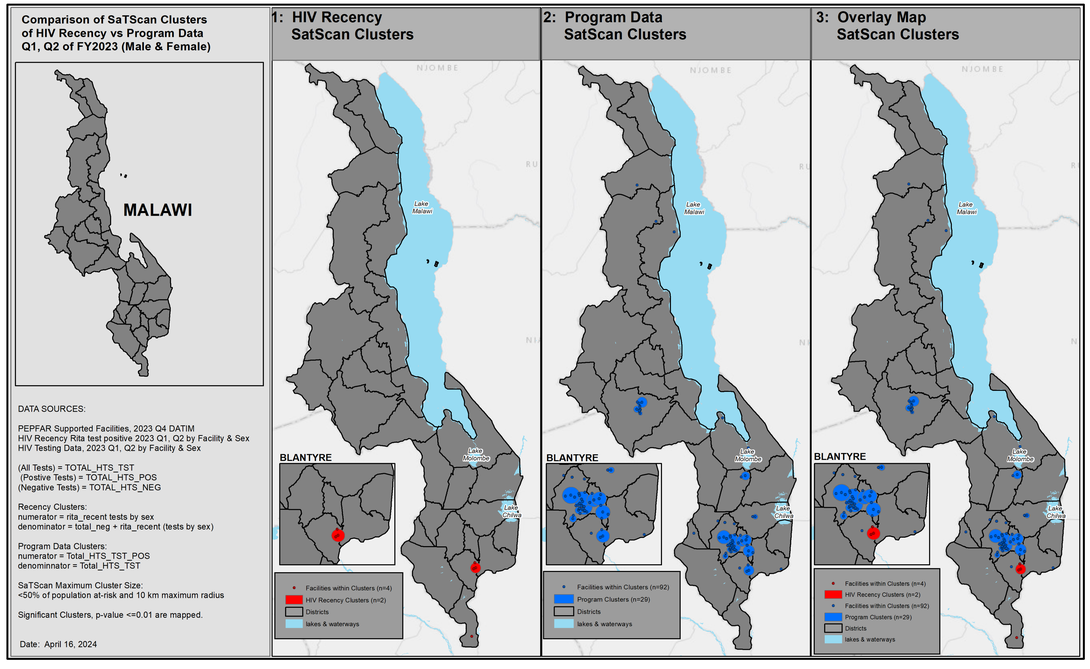
The use of routine HIV testing service program data may not provide accurate signals of ongoing HIV acquisition. Recent HIV infection surveillance data, in triangulation with other surveillance and program data, may be better suited for identifying areas for targeting HIV prevention interventions.

BACKGROUND

- Although there has been much progress in controlling the HIV epidemic in Malawi, identifying and understanding ongoing HIV acquisition is needed for targeted HIV control efforts.
- We analyzed facility-based recent HIV infection surveillance data and HIV testing services (HTS) program data to identify potential signals of ongoing HIV acquisition.

METHODS

- In Malawi, recent infection surveillance uses a recent infection testing algorithm (RITA), combining a rapid test for recent infection and viral load testing.
- RITA results from October 2022 to June 2023 for clients ≥15 years old from 287 facilities were analyzed using a proxy 'at-risk' population, estimated as those testing HIV-negative plus those classified as RITA recent. In addition, using routine HTS data for the same facilities and time period, HIV testing yield (the proportion of new positives among those who had a HIV test) was analyzed.
- Both analyses were adjusted by sex and utilized a Poisson probability model to identify one or more facilities with a significantly higher ($p<0.01$) observed rate of recent infection than the expected with a maximum cluster radius of 10km using SaTScan software.
- A side-by-side comparison of the geographic distribution of both sets of signals of facilities was done using ArcGIS Software.



RESULTS

- Among 20,093 persons newly diagnosed with HIV, 534 (2.0%) tested RITA recent; of these, 76% were female and 24% male. In the same period, 1,065,601 persons were tested for HIV; HIV testing yield was 2.5%.
- Using HTS data, 60% of the newly diagnosed persons were female and 40% were male. SaTScan identified two areas of elevated rates of recent infection, while 29 areas of elevated HIV testing yield were identified.
- Results showed that one of the two signals of elevated HIV acquisition identified using RITA results overlapped with a signal identified using HTS yield data.

CONCLUSIONS

- HTS yield data identified more potential signals of elevated HIV transmission than recent infections likely due to repeat testing or late diagnoses.
- Additional triangulation of surveillance and program data and use of unique identifiers in the program may be explored to improve use of surveillance data to identify areas with ongoing HIV acquisition.