Optimizing Testing Increases Yield in HIV Case Finding in 24 Countries, 2018–2019

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BACKGROUND

In 2018, U.S. President's Emergency Plan for AIDS Relief (PEFPAR) supported programs conducted over 95 million HIV tests resulting in 3.4% positive tests (yield). In 2019, to reduce test volume and increase yield, PEPFAR prioritized HIV testing (1) notably symptom or risk- based testing in provider -initiated testing and counseling services (PITC), and (2) strengthening of active contact testing to increase case finding.

METHODS

We compared HIV test data from 2018 and 2019 and calculated the number of HIV tests and the yield by test modality (method or location of testing) in 24 countries that reported at least 2000 positive HIV tests per quarter. We also present data on contact testing among adults (age 15+ years), Quarter 4, 2019.

RESULTS

Overall, between 2018 and 2019, HIV test volume decreased by 16% (92 million to 77 million), whereas yield increased by 12% (3.4% to 3.9%) (Table 1). The yield was 4.3% in Quarter 4, 2019 (Figure 1). Among adults, PITC in Out Patient Departments (OPD)s contributed to the largest volume of HIV-positive results (2018, 55%; 2019, 47%), due to high volume of testing.

Among adults, contact testing had the highest yield (increased from 12.1% to 22.0%), and the second highest contribution to HIV case finding, despite a very low-test volume (3% in 2019). Compared to contact testing, the changes in yield and contribution to case finding were smaller in all other modalities. Total positive HIV tests decreased by 6% between 2018 and 2019 (3,174,631 to 2,997,241).

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RESULTS cont'd

- In PEPFAR countries, optimization of HIV testing in PITC with contact testing helped decrease test volume and increase yield.
- Contact testing offers the highest yield from HIV testing, and the second largest contribution to HIV case finding.
- Increase yield and scale of contact testing was insufficient to compensate the decrease in volume of positive tests.

Table 1. HIV Tests and Yield, 2018 and 2019, 24 Countries

	2019 Tests in Millions	2019 Tests in Millions (% of total tests)	Change in number of tests	2018 Yield (%)	2019 Yield (%)	Change in Yield
Overall	92.2	77.4	-16%	3.4	3.9	12%
Adults age (≥15 years)	76.9	65.5 (85)	-15%	3.9	4.3	10%
Men	27.6	22.7 (35)	-18%	3.9	4.6	18%
Women	47.2	41.1 (65)	-13%	3.8	4.0	7%
Testing Modalities, Adults						
PITC in OPDs*	43.7	33.8 (52)	-23%	3.8	3.8	1%
Antenatal clinics	10.0	9.7 (15)	-3%	2.4	2.6	7%
Voluntary testing	11.5	7.2 (11)	-37%	4.0	4.7	5%
Mobile clinics	5.4	4.8 (7)	-13%	4.0	47	16%
Contact testing	2.0	2.1 (3)	4%	12.1	22.0	69%
All other**	5.1	8.8 (13)	72%	3.9	3.4	-12%

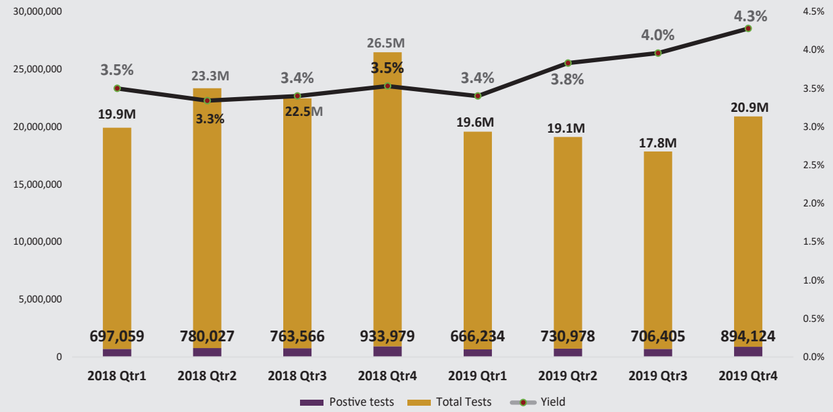
*OPD= outpatient departments, **includes TB, STI, inpatient, emergency, antenatal clinics, pediatrics.

Table 2. HIV Contact Testing Among Adults, 24 Countries, Q4, 2019

	% accepting contact elicitation (range)	Average number contacts elicited (range)	% yield among contacts (range)	Contribution of contact testing to HIV cases found (range)
Adults	85 (41-97)	1.4 (0.7-3.5)	24.4 (5-38)	16% (5-31)
Men	85 (42-98)	**1.9 (1.0-4.2)**	22.8 (4-31)	**20% (7-36)**
Women	85 (40-97)	1.1 (0.5-6.6)	**26.7 (6-46)**	15% (4-35)

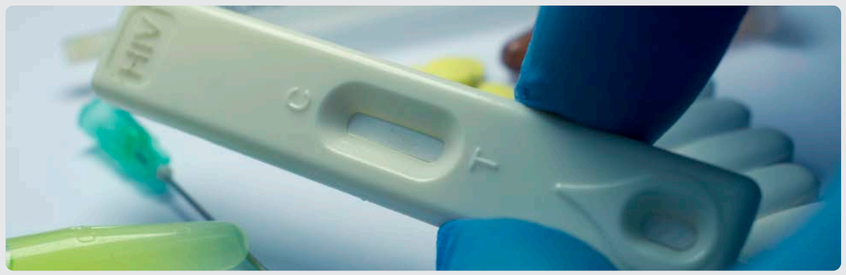
Recent data from Quarter 4 of 2019 showed high rates of acceptance of contact testing (85%) (Table 2), and 19 of the 24 countries achieved >70% acceptance rate. Men elicited more contacts than women. Also, the contribution to HIV case finding from contacts was greater among men.

Figure 1. Quarterly Trend in Number of HIV Tests and Positive Tests, All Ages, and Yield in 24 PEPFAR Countries†, 2018-2019*



†Angola, Botswana, Burundi, Cameroon, Cote d'Ivore, DRC, Ewatini, Ethiopia, Ghana, Haiti, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Rwanda, South Africa, Tanzania, Uganda, Ukraine, Vietnam, Zambia, Zimbabwe

*Due to multiple tests among some individuals, number of tests or positives do not equal number of persons



CONCLUSIONS

Among these 24 PEPFAR-funded countries, testing volume has decreased while the positivity rate has increased, largely owing to the increase in contact testing and the reduction in PITC. Given the high contact test acceptance rates in most countries, strengthening of contact testing may help further improve case finding. Annual volume of positive HIV tests decreased by 6%. Both yield and absolute number of positive tests should be considered in assessing the impact of changes in HTS strategies.

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
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