Estimated HIV incidence in 15-24-year-olds across two Population HIV Impact Assessments (PHIA)

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BACKGROUND

- Adolescents and young adults (AYA) 15-24 years represented more than a quarter of all people newly acquiring HIV in 2023 globally.

METHODS

- We analyzed data from two rounds of Population HIV Impact Assessments (PHIA) which are nationally representative surveys measuring HIV outcomes:
  - Eswatini: 2016-17 (round 2); 2021 (round 3)
  - Lesotho: 2016-17 (round 1); 2020 (round 2)
  - Malawi: 2015-16 (round 1); 2020-21 (round 2)
  - Zimbabwe: 2015-16 (round 1); 2020 (round 2)
- Participating household members ≥15 years received rapid antibody HIV testing and blood sample collection.
- 12-month HIV incidence was estimated via Limiting Antigen-Avidity (Lag) enzyme immunoassays and an algorithm identifying recent HIV infections as a proxy for incidence.
- National population-level estimates of new HIV infections in AYA were estimated with 95% confidence intervals using survey weights with jackknife variance.
- Proportions of new infections among AYA out of all new HIV infections in adults ≥15 years were also calculated using population estimates.
- Rao-Scott tests accounting for sampling weights were used to compare estimates from the two survey rounds in each country.

RESULTS

- Across the four countries, 21,008 and 21,028 AYA participated in round 1 and 2, respectively.
- Estimated annual HIV incidence in AYA did not significantly decline in any country for 15-24-year-olds (Table 1).
- Estimated annual HIV incidence in Lesotho decreased in females from 1.49 (95%CI 0.58-2.39) in round 1 to 0.34 (95%CI 0.0-0.74) in round 2 (p=0.02) (Table 1).
- Approximately 25,600 AYA newly acquired HIV annually across the four countries according to the most recent PHIA surveys from 2020 and 2021.
- AYA accounted for up to half of all people new acquiring HIV in Eswatini (54.2%), Malawi (46.9%) and Zimbabwe (41.9%).

Data from two rounds of PHIA surveys in four countries show little to no progress in reducing HIV incidence in adolescents and youth (15-24 years) who account for a substantial proportion of all people newly acquiring HIV.

Table 1. Estimated HIV incidence in 15-24-year-olds across two rounds of PHIA surveys in four countries (2015-2021)

	ROUND 1				ROUND 2				
	Estimated annual HIV incidence	95% CI	Estimated new HIV infections	95% CI	Estimated annual HIV incidence	95% CI	Estimated new HIV infections	95% CI	p-value round 1 v. 2*
All 15-24 years									
Eswatini	1.07	0.48-1.66	2400	1000-3900	0.86	0.26-1.45	1900	600-3200	0.61
Lesotho	0.78	0.31-1.25	2900	1100-4800	0.33	0.03-0.63	1200	100-2400	0.11
Malawi	0.22	0.03-0.40	7000	500-13000	0.25	0.06-0.44	9500	2200-17000	0.77
Zimbabwe	0.30	0.08-0.52	8600	2200-15000	0.42	0.14-0.70	13000	4100-22000	0.49
Females									
Eswatini	1.67	0.62-2.71	1800	700-3000	1.63	0.43-2.81	1700	400-3000	0.93
Lesotho	1.49	0.58-2.39	2700	1000-4400	0.34	0-0.74	600	0-1300	**0.02**
Malawi	0.38	0.02-0.74	6200	200-12000	0.42	0.09-0.75	8000	1700-15000	0.86
Zimbabwe	0.46	0.09-0.82	6500	1200-12000	0.76	0.25-1.26	12000	3700-20000	0.33
Males									
Eswatini	0.52	0.0-1.14	1000	0-1400	0.17	0.0-0.50	200	0-600	0.35
Lesotho	0.13	0.0-0.41	300	0.0-800	0.33	0-0.78	600	0-1500	0.44
Malawi	0.05	0.0-0.19	700	0-3000	0.07	0.0-0.22	1300	0-4000	0.75
Zimbabwe	0.14	0.0-0.37	2100	0-5300	0.08	0.0-0.27	1300	0-4300	0.64

*Eswatini data used came from round 2 (2015-16) and round 3 (2021)

Figures 1 a-c. Proportion of new HIV infections among 15-24-year-olds out of all new adult infection (≥15 years) across two rounds of PHIA surveys (2016-2021)

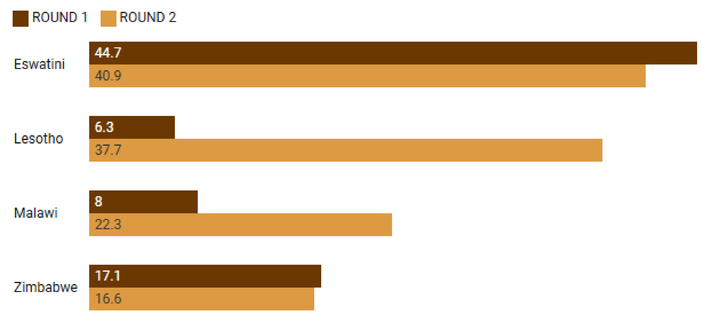
Figure 1a. All 15-24 years



Figure 1b. Females 15-24 years



Figure 1c. Males 15-24 years



CONCLUSIONS

HIV incidence did not decline among 15-24-year-olds in four countries from 2015 to 2021, and almost half of people newly acquiring HIV were AYA in the most recent PHIA surveys. Larger studies are needed to confirm these results. More effective and larger scale prevention efforts are urgently needed for this age group.