Population level viral suppression among Ugandan and Kenyan children with HIV in the SEARCH study

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BACKGROUND

- Despite great progress, new HIV infections continue to occur in children globally. Many children with HIV have delayed diagnoses and present with advanced untreated disease.
- Our objective was to generate a population-level assessment of the current prevalence of HIV in children in rural regions of southwestern Uganda and western Kenya.
- We also sought to describe their treatment status and individual characteristics to inform better strategies for testing, linkage and care.

METHODS

- Household census in western Kenya & southwestern Uganda as part of the SEARCH-Sapphire trial. SEARCH-Sapphire (NCT05768763) is an ongoing cluster randomized trial evaluating a community precision health approach to HIV prevention and treatment. From March to September 2025, study teams visited enumerated households to assess infection and treatment status. For this analysis we evaluated outcomes in the 8 control communities.
- Children (< 15 years old) were considered "at-risk" for HIV if they had a mother known to be living with HIV, unknown status (absent or declined testing), or was reported deceased. At risk children were tested by rapid HIV antibody (≥18 months old) or HIV RNA (< 18 months old); prior knowledge of HIV and ART status was obtained by interview; HIV RNA levels were obtained from children with HIV.
- Descriptive statistics were used to characterize testing outcomes and the population level prevalence of HIV.

RESULTS

- Contacted 95% (25,785/27,158) of census enumerated children.
- Tested 97% (6,770/7,018) of children determined to be at risk.

Table 1. Characteristics of children tested (n=6,770)

Age	<18 months	72 (1%)
	18 months – 5 years	1926 (28%)
	6 – 10 years	2643 (39%)
	11 – 15 years	2129 (31%)
Sex	Female	3390 (50%)
	Male	3380 (50%)
Country	Uganda	3669 (54%)
	Kenya	3060 (45%)
At-risk reason	Mother unk. HIV status	3781 (56%)
	Mother with HIV	2841 (42%)
	Mother deceased	148 (2%)

- A population level survey of > 25,000 children in rural Kenya and Uganda identified 122 living with HIV.
- 13% were new diagnoses, underscoring persistent need for better postnatal testing.
- Virologic suppression was 72% among children with HIV on treatment.

RESULTS

- 122 children (median age 10 years) with HIV were identified.
- The population-level prevalence of HIV among evaluated children 0.47% (122/25,785).
- By maternal status, test positivity was 7.4% (11/148) if deceased, 3.5% if known to live with HIV (100/2,841), and 0.3%(10/3,781) if status unknown.

Table 2. Characteristics of children with HIV (n=122)

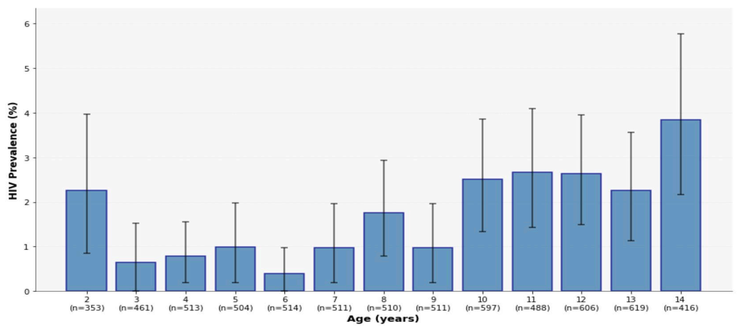
Age	< 18 months	6 (5%)
	18 months – 5 years	21 (17%)
	6 – 10 years	36 (30%)
	11 – 15 years	59 (48%)
Sex	Female	63 (52%)
Country	Uganda	45 (37%)
	Kenya	77 (63%)

Table 3. Prior knowledge of child HIV diagnosis, by maternal status

		Child Diagnosis	
		Known	*New*
Country	**Maternal Status**	*(n=105)*	*(n=16)*
Kenya	Mother Unk. Status	1 (2%)	0 (0%)
	Mother Known HIV+	60 (91%)	11 (100%)
	Mother Deceased	5 (8%)	0 (0%)
Uganda*	Mother Unk. Status	7 (18%)	2 (40%)
	Mother Known HIV+	26 (67%)	3 (60%)
	Mother Deceased	6 (15%)	0 (0%)

**Data missing from one child with HIV*

Test positivity by age among at-risk children



- Among the at-risk children tested, a greater proportion of the older at-risk children had HIV (0-5yo: 1.4%, 6-10yo: 1.4%, 10-14yo: 2.8%).

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Table 4. The pediatric HIV care cascade

	Parents aware of child HIV diagnosis*	Children with HIV on treatment*	On treatment with virologic suppression*
Uganda*	89% (39/44)	90% (35/39)	77% (27/35)
Kenya	86% (66/77)	97% (64/66)	69% (44/64)
TOTAL	87% (105/121)	94% (99/105)	72% (71/99)

** Per parent report at time of testing; data missing for one child with HIV.*

- At population level, the proportion of children with HIV who have virologic suppression was only 59% (71/121).

CONCLUSIONS

- In this 2025 population-level assessment of over 25,000 children in communities with standard HIV prevention and care in rural Uganda and Kenya, the HIV care cascade for children with HIV fell short of all UNAIDS 95-95-95 targets.
- Most but not all newly identified children had mothers with known HIV diagnoses; in settings with poor postnatal testing coverage, additional testing of children whose mothers are deceased or have unknown HIV status should be considered.
- The low prevalence of virologic suppression among children with HIV underscores persistent need for better drugs, access and treatment approaches.

Lay Summary: To determine the burden of HIV in children in rural Kenya and Uganda, we visited individual households. Among > 25 ,000 children, we found 122 had HIV. The child's HIV diagnosis was new information for 1 in 10, and 2 of 5 children with HIV were not having good response to treatment. Better approaches are needed find and treat HIV in children in these areas.

ACKNOWLEDGEMENTS

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Andrew Phillips
National Institute of Allergies and Infectious Diseases, USA
Jason Hataye, Joana Roe, Carolyn Williams, Carl Dieffenbach
National Heart, Lung, and Blood Institute, USA
Mary Masterson
National Institute of Mental Health, USA
Chris Gordon, Dianne Rausch
National Institute on Alcohol Abuse and Alcoholism, USA
Kendall Bryant

Funding: U.S. NIH/NIAID/NHLBI/NIMH/NIAAA (U01AI150510)